Achrugan Wind Farm

Information to Support a Formal Request for an Environmental Impact Assessment Scoping Opinion

May 2024

RSK GENERAL NOTES

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Abbreviations

Abbreviation	Meaning
AOD	Above Ordnance Datum
BESS	Battery Energy Storage System
BGS	British Geological Survey
CAA	Civil Aviation Authority
CEMP	Construction (or contract) environmental management plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CIfA	Chartered Institute for Archaeologists
CLVIA	Cumulative Landscape and Visual Impact Assessment
CO_2	Carbon Dioxide
CRM	Collision Risk Modelling
CTMP	Construction Traffic Management Plan
dB	Decibels
dB(A)	decibel (A-weighted), a unit of noise measurement
Defra	Department for Environment, Food and Rural Affairs
ECU	Energy Consents Unit
EIA	Environmental impact assessment
GDL	Garden and designed landscapes
GHG	Greenhouse gas emissions
GIS	Geographic information system
GWDTE	Groundwater Dependent Terrestrial Ecosystems
GW	Gigawatt
GVA	Gross Value Added
HER	Historic Environment Record
HGV	Heavy goods vehicle
HRA	Habitats Regulations assessment
HES	Historic Environment Scotland

Abbreviation	Meaning
HM	His Majesty
HwLDP	Highland-wide Local Development Plan
IEMA	Institute of Environmental Management and Assessment
IHBC	Institute of Historic Building Conservation
JNCC	Joint Nature Conservation Committee
km	Kilometre
LB	Listed Building
LCA	Landscape character area
LCT	Landscape character type
LDP	Local development plan
LLA	Local Landscape Area
LiDAR	Light detection and ranging
LVIA	Landscape and visual impact assessment
m	Metre
MW	Megawatt
MWh	Megawatt hours
NATS	Neural Autonomic Transport System
NDA	Non-designated heritage assets
NEMP	Nature Enhancement Management Plan
NERL	NATS en route plc
NHZ	Natural Heritage Zone
NPF3	National Planning Framework 3
NPF4	National Planning Framework 4
NRHE	National Record of the Historic Environment
NSA	National Scenic Area
NVC	National Vegetation Classification
OSA	Outer Study Area
OWESG	Onshore Wind Energy Supplementary Guidance

Abbreviation	Meaning
PAN	Planning Advice Note
RSPB	Royal Society for the Protection of Birds
SAC	Special area of conservation
SBL	Scottish Biodiversity List
SEPA	Scottish Environment Protection Agency
SM	Scheduled monument
SNH	Scottish Natural Heritage/NatureScot
SPA	Special protection area
SPP	Scottish Planning Policy
SSSI	Site of special scientific interest
tCO_2e	Tonnes of Carbon Dioxide equivalence
THC	The Highland Council
UNESCO	United Nations Educational, Scientific and Cultural Organization
VP	Vantage Point
WCA	Wildlife Countryside Act
WLA	Wild Land Area
ZPSF	Zone of Potential Shadow Flicker
ZTV	Zone of Theoretical Visibility

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Cultural Heritage Technical Appendix **(under separate cover)**

1 INTRODUCTION

1.1 Background and Context

1.1.1 STATKRAFT WINDCO 1 LIMITED (Statkraft), a company wholly owned by Statkraft UK Limited is planning to apply to the Scottish Ministers for consent under Section 36 of the Electricity Act 1989 for the construction and operation of an onshore wind development ('the Proposed Development') on land at Achrugan Forest. The Proposed Development will comprise up to 14 wind turbines, Battery Energy Storage System (BESS) and associated infrastructure. The Proposed Development will exceed 50 Megawatts (MW) in installed capacity.

1.1.2 The Proposed Development is located approximately 1.7km south of Strathy and 2.5km south east of Armadale, on predominantly commercial forestry land (hereafter referred to as 'the Site'), within the administration boundary of THC. The Site location is shown in **Appendix A, Figure 1.1.1**. The boundary of the Site (hereafter referred to as the 'Site Boundary') is shown in red.

1.1.3 As the Proposed Development is expected to have an installed capacity in excess of 50MW, an application for consent will be made to Scottish Ministers under Section 36 of the Electricity Act 1989. In addition, a direction will be sought for deemed planning permission under s.57(2) of the Town and Country Planning (Scotland) Act 1997 ("the 1997 Act").

1.1.4 It is acknowledged that the Proposed Development should be subject to Environmental Impact Assessment (EIA) pursuant to the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter referred to as 'the EIA Regulations'). Therefore, the application for a Section 36 consent will be accompanied by an EIA Report. Regulation 12 of the EIA Regulations provide for obtaining a 'Scoping Opinion' from Scottish Ministers as to the scope and level of detail to be provided in the EIA Report which will accompany the consent application.

1.1.5 This document is the EIA Scoping Report which accompanies Statkraft's written request to the Scottish Ministers for a formal EIA 'Scoping Opinion'. It provides a brief description of the nature and purpose of the development and of its likely significant effects on the environment. The final assessment of effects of the Proposed Development will be contained within the EIA Report which will be informed by any forthcoming adopted scoping opinion.

The Applicant

1.1.6 Statkraft (hereafter referred to as the 'Applicant') is a leading company in hydropower internationally and Europe's largest generator of renewable energy. The Group produce hydropower, wind power, solar power, gas fired power and supplies district heating. With a background in Norwegian hydropower, Statkraft has been generating renewable energy for over 125 years and has 6,000 employees in 20 countries.

1.1.7 Across their UK businesses, the Group employs over 450 staff with offices in Scotland (Glasgow), England and Wales. The Applicant has operated within the UK since 2006, developing, owning and operating renewable production facilities including wind farms in Wales and Scotland. In Scotland, the Applicant currently own or operate five onshore wind farms with a combined capacity of over 200MW and has consent for a further five onshore wind farms.

1.1.8 In addition, the Applicant are at the forefront of providing grid stability and storage with Greener Grid Parks. The Group currently has operational projects in Keith and Liverpool and projects under construction in Neilston, East Renfrewshire and Thornton, West Yorkshire, and one consented in Swansea. These developments increase the amount of renewable energy transmitted through the National Grid by delivering grid stability and/or energy storage services and will help to decarbonise the grid.

1.1.9 The Applicant is well positioned to enable a net-zero future. It is a solid, dependable partner, committed to playing a leading role in the UK energy market. The Proposed Development would make a very important contribution to the Applicant achieving this aim.

The EIA Consultant

1.1.10 RSK has been appointed by the Applicant to coordinate the EIA Scoping process for the Proposed Development. This EIA Scoping Report has been prepared by a team of technical specialists listed as follows:

- Landscape and Visual – MVGLA
- Ecology (non-Avian) – RSK
- Ornithology – Avian Ecology
- Geology, hydrogeology, hydrology and peat – Fluid EC

- Cultural Heritage – RSK
- Traffic and Transport – RSK
- Noise and Vibration – RSK
- Climate change – RSK
- Biodiversity – RSK Biocensus
- Socio-economics - RSK
- Shadow flicker - RSK
- Forestry – Scurrah Associates
- Aviation – Aviatica
- Telecommunications – Aviatica

1.1.11 The project team are competent experts with experience of undertaking EIA work for wind energy developments across Scotland, and meets the terms of Regulation 5(5) of the EIA Regulations.

1.2 The Requirement for an EIA

1.2.1 The EIA Regulations require that, before consent is granted for certain types of development, an EIA must be undertaken. The Regulations set out the types of development which always require an EIA (referred to as Schedule 1 developments), and other developments (Schedule 2 developments) which may be subject to EIA if they are likely to have significant effects on the environment due to their nature, size or location.

1.2.2 As the Proposed Development is development of a type in Schedule 2 of the EIA Regulations (i.e., (1) a generating station), and it is likely to give rise to significant environmental effects, the Applicant will prepare and submit an EIA Report to Scottish Ministers.

1.2.3 The term 'Environmental Impact Assessment' describes a process that must be followed for certain types of projects before they can be granted consent. Regulation 4 of the EIA Regulations describes the process as consisting of:

- the preparation of an EIA Report by the Applicant;
- the carrying out of consultation, publication and notification at certain stages of the process;
- the examination by the Scottish Ministers of the information presented in the EIA Report and any other environmental information; and
- the reasoned conclusion by the Scottish Ministers on the significant effects of the development on the environment, and the integration of that reasoned conclusion into the decision notice issued in respect of the Application.

1.2.4 The EIA Report prepared by the Applicant is a means of drawing together, in a systematic way, an assessment of a project's likely significant environmental effects, both beneficial and adverse. This helps to ensure that the importance of the predicted effects, and the scope for avoiding, preventing, reducing or, if possible, offsetting them, are properly understood by the public and the authority granting consent (the 'determining authority') before it makes its decision.

1.3 Purpose of this Report

1.3.1 Regulation 12 of the EIA Regulations allows a developer to request the relevant determining authority (in this case the Scottish Ministers) to state in writing their opinion as to the information to be contained in the EIA Report. Section 12(2) of the EIA Regulations sets out the information which must be provided in a request for a Scoping Opinion. **Table 1.3.1** lists the Section 12(2) information required and where it can be found in this EIA Scoping Report.

Table 1.3.1 Information required to accompany a request for a scoping opinion

Regulation ref.	Information required	Where the information is provided in the EIA Scoping Report
12 (2) (a)	A description of the location of the development, including a plan sufficient to identify the land	**Chapter 2**, and **Appendix A, Figure 1.1.1**
12 (2) (b)	A brief description of the nature and purpose of the development and of its likely significant effects on the environment	**Chapter 2** and **Chapter 6**.
12 (2) (c)	Such other information or representations as the person making the request may wish to provide or make	EIA Scoping Report in its entirety

1.3.2 The purpose of this EIA Scoping Report is to ensure that the subsequent EIA is focused on the key impacts likely to give rise to significant environmental effects, and to obtain agreement on the EIA approach and scope. As well as identifying the environmental factors to be considered in the EIA Report, this EIA Scoping Report also identifies those factors that are not considered necessary to assess further. This approach is in line with the general aim to undertake proportionate EIA.

1.3.3 Whilst this EIA Scoping Report seeks to establish the overall framework for the EIA in relation to the environmental factors and associated effects, the exact scope of the EIA will be influenced by the scoping opinion received, the ongoing design evolution of the Proposed Development, and through ongoing baseline data collection (e.g., desktop research and field surveys). In this regard, a list of 'scoping questions' is presented within this EIA Scoping Report to assist the aim of which is to assist Scottish Ministers and its consultees in forming the Scoping Opinion.

1.3.4 In accordance with the EIA Regulations, the Scoping Opinion received will inform the preparation of the EIA Report.

1.4 Report Structure

1.4.1 The remainder of this EIA Scoping Report is structured as follows:

- **Chapter 2** provides a brief description of the site and the nature and purpose of the proposed Development;
- **Chapter 3** describes the policy and legislation relevant to the Proposed Development;
- **Chapter 4** provides information on the EIA process and assessment methodology;
- **Chapter 5** presents the environmental factors which are not to be considered in the EIA;
- **Chapter 6** presents the environmental factors which are to be considered in the EIA;

1.4.2 This EIA Scoping Report is also accompanied by the following appendices:

- **Appendix A** comprises a number of relevant figures/drawings
- **Appendix B** presents the proposed structure of the EIA Report
- **Appendix C** details the significance criteria adopted for the environmental factors to be considered in the EIA Report
- **Appendix D** details the consultees that will be approached by the Energy Consents Unit (ECU) to inform the scope of the EIA, and the organisations / agencies proposed to be consulted by the Applicant in the EIA process.

1.4.3 This Report also contains a **Cultural Heritage Technical Appendix** (under separate cover) which comprises:

- **Appendix 6.5.1** Achrugan Wind Farm EIA Scoping Cultural Heritage Gazetteer
- **Appendix 6.5.2** Cultural Heritage Viewpoints
- **Appendix 6.5.2** Zone Of Theoretical Visibility 45km (.shp)

2 THE PROPOSED DEVELOPMENT

2.1 Need for the Development

2.1.1 The science behind climate change is well established and points strongly towards reducing our reliance on fossil fuels to avoid negative economic, environmental and social effects. All major economies have made international and European commitments to reducing CO_2 and tackling climate change. In response to these issues, in March 2021 the UK government made legally binding commitments to reduce carbon emissions by 78% by 2035 compared to 1990 levels. The UK Government sets out a sectoral plan to achieve Net Zero by 2050 in its Net Zero Strategy. In relation to power, the commitment is to fully decarbonise the production of electricity by accelerating deployment of renewable generation infrastructure.

2.1.2 In September 2019, the Scottish Government passed the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 which set a legally binding goal to achieve net zero greenhouse gas emissions by 2045 at the latest including interim targets.

2.1.3 The Scottish Government announced on 18th April 2024 that the 75% reduction target and annual targets will no longer be statutory targets and that new legislation will be taken forward to introduce multi year 'carbon budgets'. It is understood that this is in response to the Climate Change Committee's Progress in reducing emissions in Scotland – 2023 Report to Parliament which was published on 20th March 2024. The Climate Change Committee's Report states in the Executive Summary that:

"The Scottish Government is failing to achieve Scotland's ambitious climate change goals. Annual emissions targets have repeatedly been missed and the publication of Scotland's draft Climate Change Plan has been delayed. As such, there is still no comprehensive delivery strategy for meeting future emissions targets and actions continue to fall far short of what is legally required."

2.1.4 The key messages outlined in the Executive Summary of the Climate Change Committee's Report are:

"Scotland's annual target was missed again…

The acceleration required in emissions reduction to meet the 2030 target is now beyond what is credible…

Current overall policies and plans in Scotland fall far short of what is needed to achieve the legal targets under the Scottish Climate Change Act…

The Scottish Government has delayed its draft Climate Change Plan…

Most key indicators of deliver progress are off track…"

2.1.5 The Executive Summary of the Climate Change Committee's Report notes in relation to delivery progress that:

"By the end of this decade, Scotland will need to: treble the pace of roll-out of public electric vehicle charge points, reduce car traffic by 20%, increase heat pump installation rates by a factor of at least thirteen, and double onshore wind capacity. Woodland creation will need to more than double by the mid-2020s and peatland restoration rates need to increase significantly."
"

2.1.6 Section 2 of the Climate Change Committee's Report relates to Policy and delivery progress and next steps. In relation to electricity supply and onshore wind, page 18 states:

"The growth in onshore wind capacity has slowed, however, and it is slightly off track to deliver its 2030 target, which will require operational capacity to more than double."

2.1.7 A key point is that the net zero target by 2045 remains. It is clear that the Climate Change Committee's considers there is a path to this target but stronger action is needed to reduce emissions across the economy. All this means is that there is a change to the trajectory, but the overall target of net zero remains unchanged. Indeed, as set out in the Cabinet Secretary's Statement to Parliament (18th April 2024), the Scottish Government retains its "*unwavering*" commitment to attaining that legally binding target. In relation to the needs case for the Project, it remains very strong and, based on the recent developments, the scale and pace of action required to reduce emissions grows ever steeper and urgent.

2.1.8 This was recently reinforced in the Scottish Government's Onshore Wind Policy Statement (December 2022) which sets a target to achieve a minimum installed capacity of 20 gigawatts (GW) of onshore wind in Scotland by 2030.

2.1.9 In line with the UK and Scottish Government targets for achieving net zero emissions by 2050, additional capacity to generate electricity from renewable sources is required. The Proposed Development will help to meet that target by providing up to 100MW of renewable electricity generated via wind turbines.

2.2 Project Objectives

2.2.1 The project objectives are:

- To construct and operate a wind farm; and
- To contribute to the UK and Scottish government aims of achieving net zero emissions.

2.3 Site Description

2.3.1 The Proposed Development is located approximately 1.6km south of Strathy and 2.5km south east of Armadale on predominantly commercial forestry land within the Highland Council planning authority jurisdiction. Strathy North Wind Farm access road lies to the east of the Site and the A836 lies to the north.

2.3.2 The Site slopes eastward and sits at elevations between 90mAOD (above Ordnance Datum) to 30mAOD.

2.3.3 One aspect of the Proposed Development is its location adjacent to the Flow Country candidate World Heritage site. There are a number of lochs located within the Site Boundary including Achrugan Loch, Loch Nam Breac Beag and other unnamed lochans.

2.3.4 With the possible exception of an area of Ancient Woodland on the east of the Site, the Site falls outside national environmental designations.

2.3.5 There are no ecological statutory designated sites within the Site Boundary.

2.4 Description of the Proposed Development

2.4.1 The layout of the Proposed Development will utilise a relatively small footprint of the overall Site which will be developed for access and energy production purposes, with the majority of the land remaining untouched and/or subject to habitat improvement.

2.4.2 The Proposed Development will comprise up to 14 wind turbines with a maximum 200m blade tip height, a BESS and associated infrastructure including:

- turbine foundations;
- crane hardstandings;
- transformer/switchgear housings located adjacent to turbines;
- access tracks (existing, upgrade of existing or new as required);
- watercourse crossings (upgrade of existing or new as required);
- underground electrical cabling;
- permanent anemometer mast and LIDAR (Light Detection and Ranging) compound;
- a temporary windfarm construction compound area;
- a substation compound;
- concrete batching plant;
- permanent control building;
- borrow pit search areas; and
- habitat restoration and enhancement works.

2.4.3 The initial feasibility and design work indicates that the Site has the potential to accommodate up to 14 turbines with a maximum tip height of 200m. As the design is not yet fixed, assessing the likely maximum potential of the Proposed Development is considered appropriate to ensure that the effects and any mitigation identified in the EIA Report reflect the likely worst-case.

Wind Turbines

2.4.4 Based on current information, it is anticipated that the Site can accommodate up to 14 wind turbines. The final number of turbines will be determined by environmental, technical, and commercial constraints identified during the EIA and iterative design process. A maximum blade tip height of 200m is being considered, however, the final dimensions of the turbines up to a maximum tip height of 200m will be determined as the design progresses. The detailed design specification for each turbine foundation will depend on the type of turbine procured and the specific ground conditions at the location of each turbine.

2.4.5 The candidate turbine has not yet been confirmed however, for the purpose of assessment the 'worst case' turbine model will be used, with indicative dimensions as follows:

- Height to blade tip of up to 200m;
- Indicative hub height of up to 119m; and
- Indicative rotor diameter of up to 79.35m.

2.4.6 Preliminary wind turbine locations are provided in **Table 2.4.1** and shown in **Appendix A**, **Figure 2.4.1**.

Table 2.4.1 Grid references for EIA scoping turbine layout

Turbine ID	Easting	Northing
1	281068	962859
2	281746	963135
3	282403	963333
4	283069	963510
5	281221	962361
6	281777	962525
7	282316	962623
8	282849	962751
9	281321	961810
10	281976	961932
11	282632	962030
12	281206	961148
13	281872	961296
14	281252	960575

2.4.7 The precise number, location and dimensions of the turbines will be confirmed in the EIA Report.

Aviation Lighting

2.4.8 Where the proposed turbines tip heights are likely to be in excess of 150m, an aviation lighting scheme will be required. The starting point is that all turbines will require:

- Two fixed red 2000 candela lights on the nacelle (one operating and one for backup); and
- Three fixed red 32 candela lights on the tower at half the nacelle height (to provide the 360 degree coverage).

Access to Site and Internal Tracks

2.4.9 Access to the Site from the A836 is yet to be finalised, with three options currently being explored.

2.4.10 Access for turbine components from Scrabster Harbour is likely to be via the A9 (2.1km) to Thurso and then on the A836 (for ~30km) to the Site. Four alternative options are under consideration for potential access to the Site from the A836, each option having different engineering challenges to overcome, these including the need for track upgrades and significant water crossings over the Strathy to the east of the Site.

2.4.11 A new access to the Site for vehicles delivering both construction materials and the turbine components is required. Technical feasibility studies are ongoing to identify potential access options that are commercially and technically viable. These options will then be subject to an environmental and engineering appraisal before selecting the preferred option. The proposed Site access options will be included in the iterative design process and described in a section in the EIA Report on consideration of reasonable alternatives.

Permanent Anemometer Mast

2.4.12 The Proposed Development will likely include a permanent anemometer mast located within the Site to provide ongoing monitoring of the wind conditions after commissioning. The selection of a location for the mast will take account of the ease of construction and ability to reduce visual impact. Access to the anemometer mast would likely connect with the main network of Site tracks.

Borrow Pits

2.4.13 The Proposed Development will require crushed stone to construct new tracks, create hardstanding areas for the cranes and lay the turbine foundations. Whether the stone and aggregate will be sourced from on-site borrow pits and/or delivered to Site from external sources will be confirmed during the EIA and design process and assessed in the EIA Report.

Grid Connection

2.4.14 The grid connection will be subject to a separate application for consent by Scottish and Southern Electricity, under Section 37 of the Electricity Act 1989. Therefore, potential environmental effects as a result of off-site grid connection will not be considered as part of the EIA Report.

Battery Energy Storage System

2.4.15 The Proposed Development may include a Battery Energy Storage System (BESS) of approximately 50MW.(300MWh rated capacity). The location of the BESS within Project boundary will be determined at design stage, considering all baseline information available about the Site. A proposal to include a BESS will be subject to assessments by technical specialists in LVIA; Ecology; Ornithology; Hydrology, Hydrogeology and Peat; Cultural Heritage; and Noise and Vibration, as may be applicable. Typical drawings will be provided within the EIA Report and consent application.

Construction Phase Works

2.4.16 It is estimated that it will take up to 22 months to construct the Proposed Development. Construction works will include:

- Temporary and permanent highway modifications to enable vehicles to access the Site from the local and strategic highway network;
- Construction of permanent new access tracks required to access the wind turbine positions and BESS. These would be used by civil engineering plant and construction equipment and for the following maintenance during the operational period;
- Construction of a secure site compound(s)/laydown areas/storage areas for site office facilities and storage of materials and components;
- Creation of borrow pits to access stone and aggregate for construction;
- Installation of hardstandings and outrigger pads for the support of the cranes that would be used for the erection of the turbines;
- Construction of foundations for the support of the turbine structures;
- Wind turbine delivery and erection;
- Installation of transformers in separate housings alongside each wind turbine (if required);
- Installation of on-site High Voltage cabling, communication cabling and earthing;
- Installation of Supervisory Control and Data Acquisition system;
- Construction of site substation compound;
- Commissioning of site mechanical and electrical equipment;
- Reinstatement and landscaping, removal of temporary site offices, reseeding verges and areas around turbine base; and
- Installation of a permanent anemometer mast.

Operational Phase

2.4.17 It is anticipated that the Proposed Development would operate for 50 years. During this phase, regular servicing, repair and/or maintenance of Proposed Development components, including access tracks, would take place. Once operational, the Proposed Development would not be permanently manned.

Decommissioning Phase

2.4.18 At the end of its operational life, the Proposed Development would be decommissioned or an application may be submitted to extend the life or repower the operational wind farm. If the Proposed Development is decommissioned, this is likely to involve the complete removal of above ground components including the wind turbines, transformers, substation, switchgear and other equipment. The components would be removed off-site to be re-used elsewhere, dismantled and recycled, or disposed of as appropriate. Decommissioning proposals would be established and agreed with relevant authorities prior to commencement of decommissioning activities, which would follow guidance available at the time.

3 PLANNING AND ENERGY POLICY CONTEXT

3.1 Introduction

3.1.1 This Chapter outlines the relevant Planning, Climate Change and Energy legislation, policy and guidance context, which are considered to be relevant to the Proposed Development.

3.1.2 The Proposed Development will have an installed capacity in excess of 50MW. Applications for onshore renewable energy developments with a generation capacity over 50MW require an application to be made to the Scottish Ministers under Section 36 of the Electricity Act 1989 along with a direction for deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997.

3.1.3 Scottish Ministers have a duty to fulfil the requirements of Paragraph 3(1) of Schedule 9 of the Electricity Act 1989 which outlines:

"(a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and

(b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."

3.1.4 In addition, Schedule 9 also sets out a requirement for the protection of fisheries and Paragraph 3(3) states:

"Without prejudice to sub-paragraphs (1) and (2) above, in exercising any relevant functions each of the following, namely, a licence holder, a person authorised by an exemption to generate or supply electricity and the Secretary of State shall avoid, so far as possible, causing injuries to fisheries or to the stock of fish in any waters."

3.1.5 In applications submitted under Section 36 of the Electricity Act 1989, the role of the Development Plan is not the same as in applications submitted under the Town and Country Planning (Scotland) Act 1997. The test set out in Section 25 of the Town and Country Planning (Scotland) Act 1997, which requires that development shall be in accordance with the Development Plan, is not engaged in the case of a Section 36 application. The Development Plan is a relevant consideration in the determination of a Section 36 application.

3.2 Climate Change and Energy Policy

3.2.1 The following climate change and energy policies are considered to be relevant to the Proposed Development and are considered relevant considerations in the decision-making process.

3.2.2 The Scottish Government is legally committed to achieving Net Zero by 2045. The Net Zero target for Scotland is set out in and defined in the Climate Change (Scotland) Act 2009 as amended by the Climate Change (Emissions Reductions Targets) (Scotland) Act 2019.

3.2.3 **Section 2.1 of Chapter 2: Proposed Development**, outlines that the Scottish Government announced on 18th April 2024 that they accepted the 2030 interim target is out of reach and they:

"…will bring forward expedited legislation to address matters raised by the CCC and ensure our legislative framework better reflects the reality of long-term climate policymaking.

The narrowly drawn Bill will retain our legal commitment to 2045 alongside annual reporting on progress, whilst introducing a target approach based on five-yearly carbon budgets."

3.2.4 It is considered the most relevant policy and statements published by the UK and Scottish Governments include:

- Scottish Government Energy Strategy (December 2017);
- Scottish Government's declaration of a Climate Emergency (April 2019);
- Scottish Government Update to the Climate Change Plan 2018 -2032: Securing a Green Recovery on a Path to Net Zero (December 2020);
- His Majesty's (HM) Government The Energy White Paper Powering our Net Zero Future (December 2020);
- Scottish Government Update to the Climate Change Plan Securing a Green Recovery on a Path to Net Zero (December 2020);
- HM Government Net Zero Strategy: Build Back Greener (October 2021);

- HM Government British Energy Security Strategy (April 2022);
- Scottish Government, Onshore Wind Policy Statement (December 2022);
- Scottish Government, Draft Energy Strategy and Just Transition Plan (January 2023);
- HM Government, Powering up Britain, Energy Security Plan (March 2023) and Powering Up Britain: Net Zero Growth Plan (March 2023);
- Scottish Government, Onshore Wind Sector Deal for Scotland (September 2023).
- Scottish Government, Equality, Opportunity, Community: Our Programme for Government (September 2023);
- Scottish Government, Climate Change Committee Scotland report – next steps: Net Zero Secretary statement – 18 April 2024 (April 2024);
- Scottish Government, Stepping up action to net zero news article, 18 April 2024 (April 2024); and
- Scottish Government, Climate change action: policy package, 18 April 2024 (April 2024).

3.2.5 The Scottish Government has set a minimum target of 20GW of onshore wind deployed by 2030, which is detailed in the Onshore Wind Policy Statement.

3.3 The Development Plan

3.3.1 The Development Plan for the Site comprises:

- National Planning Framework 4 (NPF4) adopted 2023.
- Highland-wide Local Development Plan (HwLDP) adopted 2012 and the Highland Council Supplementary Planning Guidance which of relevance to the Proposed Development includes the Onshore Wind Energy Supplementary Guidance (OWESG) (2016) and its Addendum (2017).
- Caithness and Sutherland Local Development Plan adopted 2018.

National Planning Framework 4

3.3.2 The Scottish Government adopted and published NPF4 on 13 February 2023. NPF4 now forms part of the statutory Development Plan along with Local Development Plans (LDPs) and supersedes both National Planning Framework 3 (NPF3) and Scottish Planning Policy (SPP).

3.3.3 Section 24(3) of the Town and Country Planning (Scotland) Act 1997 states:

"In the event of any incompatibility between a provision of the National Planning Framework and a provision of a local development plan, whichever of them is the later in date is to prevail."

3.3.4 Therefore, at present, in this instance, the NPF4 would prevail if there is any incompatibility.

3.3.5 The NPF4 sets out in its introduction that '*Scotland's future places will be Net Zero.*' In Part 1 '*the National Spatial Strategy'* it also sets out that the north (where the Site is located):

"can continue to make a strong contribution towards meeting our ambition for a net zero and nature positive country by demonstrating how natural assets can be managed and used to secure a more sustainable future."

National Development

3.3.6 NPF4 includes a number of national developments which are detailed in Annex B – National Developments Statements of Need. NPF4 (page 99) describes national developments as:

"significant developments of national importance that will help us to deliver our spatial strategy."

3.3.7 The Proposed Development is categorised as a national development as part of National Development 3. Strategic Renewable Electricity Generation and Transmission Infrastructure as it is proposed to exceed 50MW capacity of renewable energy generation.

3.3.8 The Need statement for this development states on page 103:

"Additional electricity generation from renewables and electricity transmission capacity of scale is fundamental to achieving a net zero economy and supports improved network resilience in rural and island areas. Island transmission connections in particular can facilitate capturing the significant renewable energy potential in those areas as well as delivering significant social and economic benefits."

NPF4 Relevant Policies

3.3.9 Key policy considerations from NPF4 include:

- Policy 1 Tackling the climate and nature crises
- 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

3.3.10 Policy 11 is considered the lead policy within NPF4 for renewable energy developments, however NPF4 will be considered as a whole.

3.3.11 Policy 11 outlines that all forms of development proposals for renewable energy will be supported which includes:

"i. wind farms including repowering, extending, expanding and extending the life of existing wind farms;

iii. energy storage, such as battery storage and pumped storage hydro; and

vii. Proposals including co-location of these technologies."

3.3.12 Policy 11 confirms the only places wind farms will not be supported are National Parks and National Scenic Areas (NSA).

Local Development Plan

3.3.13 In the Highland Council, the LDP comprises of the HwLDP (adopted 2012) which includes planning policy for THC area, and the LDP's for this Site which is the Caithness and Sutherland Local Development Plan (adopted 2018).

3.3.14 The HwLDP also includes associated Supplementary Guidance, including the OWESG (adopted 2016), alongside its Addendum Supplementary Guidance: 'Part 2b' (adopted 2017).

Highland-wide Local Development Plan 2012

3.3.15 The HwLDP was adopted in April 2012, before the adoption of the NPF4.

3.3.16 Policies in the HwLDP will be considered in terms of their ongoing relevance to the Proposed Development.

The Onshore Wind Energy Supplementary Guidance (2016) and its Addendum (2017)

3.3.17 The HwLDP includes Supplementary Guidance for specific planning matters. To provide guidance on onshore wind proposals, the OWESG was adopted in 2016 and its Addendum adopted in 2017.

Caithness and Sutherland Local Development Plan

3.3.18 Caithness and Sutherland Local Development Plan aims to ensure development helps to maintain and grow a strong and diverse Caithness and Sutherland economy and refers to the importance of renewable energy in achieving this aim:

"Investment in renewable energy generation in North Highland is not only helping to meet Council and national climate change targets but it has also delivered economic benefits for the area. Onshore wind energy has grown significantly over recent years, particularly in the south and north-east of the Plan area."

3.4 National Planning Guidance

3.4.1 National planning guidance and advice prepared by the Scottish Government are relevant considerations to the Proposed Development. Those which are considered to be most applicable to the Proposed Development are listed below:

- Planning Advice Note (PAN) 1/2011 Planning and Noise (Scottish Government, March 2011);
- PAN 2/2011 Planning and Archaeology (Scottish Government, July 2011);
- PAN 60 Planning for Natural Heritage (Scottish Government, January 2008);
- PAN 75 Planning for Transport (Scottish Government, August 2005);
- PAN 79 Water and Drainage (Scottish Government, September 2006);

- Onshore wind turbines: planning advice (Scottish Government, May 2014); and
- Flood risk: planning advice (Scottish Government, June 2015).

3.5 Conclusion

3.5.1 The assessment of the Proposed Development against these policies will be undertaken in a standalone Planning Statement, which is separate to the EIA Report, and will be submitted with the application.

3.6 References

Climate Change Committee (2024), Progress in reducing emissions in Scotland 2023 Report to Parliament

Highland Council (2012), The Highland-wide Council Local Development Plan

Highland Council (2016), The Onshore Wind Energy Supplementary Guidance

Highland Council (2017), The Onshore wind Energy Supplementary Guidance Addendum

Highland Council (2018), Caithness and Sutherland Local Development Plan

Scottish Government (2019), Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.

Scottish Government (2022), Onshore Wind Policy Statement

Scottish Government (2023), The National Planning Framework 4

Scottish Government (2024), Stepping up action to net zero news article on Scottish Government website.

UK Government (1989), Electricity Act 1989.

UK Government (1997), Town and Country Planning (Scotland) Act 1997.

3.7 Scoping Questions

1. *The environmental factors detailed in **Chapter 6: Environmental Factors to be scoped in** include the applicable legislation, policy and guidance relevant to the assessments proposed to be undertaken. Can consultees please confirm if there is any other legislation, policy and guidance which is relevant and not listed within the Scoping Report?*

4 APPROACH TO EIA

4.1 Introduction

4.1.1 This Chapter sets out the overall approach that will be taken in preparing the EIA Report for the Proposed Development. The EIA Report will contain the information specified in Regulation 5 (2) and further detailed in Schedule 4 of the EIA Regulations. A proposed outline of the EIA Report is provided in **Appendix B**.

Environmental Factors and Topics Proposed to be Scoped Out of the EIA

4.1.2 It is proposed to scope out environmental factors and topics of the EIA on the basis that the proposed Development, during its construction, operation and decommissioning phases, is not likely to give rise to significant effects on:

- population and human health
- air quality
- material assets
- major accidents and disasters
- heat and radiation

4.1.3 The reasoning for scoping out the above environmental factors and topics is set out in **Chapter 5: Environmental Factors to be scoped out** of this Report.

4.1.4 It is considered that the Proposed Development, during its construction, operation and decommissioning phases, is not likely to give rise to significant environmental effects in respect of Socio-economics, and Forestry. **Chapter 5: Environmental Factors to be scoped out** of this Report presents the proposed methodology and approach to assessments which will be presented in separate technical reports to accompany the Application.

Environmental Factors and Topics Proposed to be Scoped In to the EIA

4.1.5 The environmental factors and topics proposed to be scoped into the EIA are listed below:

- Landscape – Landscape and Visual
- Biodiversity – Ornithology and Ecology
- Land, Soil and Water - Geology, Hydrogeology, Hydrology and Peat
- Cultural heritage
- Traffic and Transport
- Noise and Vibration
- Climate change

4.1.6 An overview of the guidance and methodology adopted for the assessment for the EIA Report is provided for each of the above environmental factors and topics in **Chapter 6: Environmental Factors to be scoped in** of this Report.

4.2 Consultation

4.2.1 Each environmental factor / topic presented in **Chapter 6: Environmental Factors to be scoped in** describes the consultations undertaken so far, and consultations planned to be undertaken throughout the EIA and design process. The consultations will serve three main purposes:

- To establish a sufficiently robust environmental baseline of the Site and its surroundings.
- To identify, early in the process, specific concerns and issues relating to the Site and Proposed Development in order that they can be discussed and accounted for appropriately in the design and assessment.
- To ensure appropriate involvement of the public and authorities in the assessment and design process.

4.2.2 To date, the Applicant and EIA team have undertaken consultations with telecommunications operators; with NatureScot on the scope of early bird survey work and with the Environmental Health Officer of THC.

4.2.3 A full list of the statutory consultees, Internal Scottish Government Advisors, Non Statutory Consultees, Community Councils, and Others which are proposed to be consulted as part of the EIA Scoping procedure is contained in **Appendix D**.

4.3 Public Consultation

4.3.1 The Applicant is committed to undertaking best practice and meaningful consultation with the local community and stakeholders. Although not mandatory under Section 36 of the Electricity Act 1989, the Applicant will seek to follow guidance set out in The Town and Country Planning (Development Management Procedures) (Scotland) Regulations 2013 and Circular 3:2022 – Development Management Procedures. During design and development phase of the Proposed Development, it is expected that engagement will consist of:

- Regular meetings with local community groups;
- Issuing a letter to residential and business properties within 5km of the Proposed Development;
- Regular email updates for interested parties; and
- Two rounds of public consultation events (in-person and virtual).

4.3.2 The Applicant will contact local community councils including Strathy and Armadale Community Council, and the surrounding community councils of Bettyhill, Strathnaver and Altnaharra Community Council, Melvich Community Council, and Caithness West Community Council, around the time the EIA Scoping Report is submitted to the ECU, to introduce themselves and the project, and to request the opportunity to meet with them should they wish.

4.3.3 Following this, it is anticipated that the first round of in-person public consultation events will be held in local venues in May 2024. This will provide an opportunity for the public to learn about the Proposed Development directly from the project team in attendance and through information panels and visualisations presented at the public consultation events. It will be an opportunity for the Applicant to encourage and hear first-hand feedback on the Proposed Development and to help shape the Proposed Development throughout the design process and delivery of the EIA Report. A summary of consultation with local community groups and stakeholders will be documented in a Pre-Application Consultation Report, included as part of the application submission.

4.3.4 The second round of public consultation events, which is proposed to be held following design finalisation, will provide the public with an update on progress of preparation of the design and EIA Report; explain how feedback from stakeholders may have influenced the proposal; and provide further details about the conceptual design of the Proposed Development. It will also be an opportunity to provide further information on community benefits and submission timescales.

4.4 General Difficulties and Uncertainties

4.4.1 Factor-specific difficulties and uncertainties are set out in **Chapter 6: Environmental Factors to be scoped in**. The following key general difficulties and uncertainties apply to a number of environmental factor assessments:

- The detailed design of the Proposed Development is still emerging, as are the environmental surveys and assessments required to support the planning and EIA process. This EIA Scoping Report is provided based on the information available at the time of writing. Where relevant, the proposed scope will be reviewed and updated to reflect iterations in the Proposed Development design that may occur post-scoping and agreed with relevant statutory consultees. Any changes to the scope of the EIA will be reported as necessary in the EIA Report.
- As the location and area of the components that the Proposed Development comprises are not yet defined or fixed, there is potential for uncertainty regarding the scope of assessment for each factor. However, the description of the Proposed Development presented in **Chapter 2**: **The Proposed Development** details the maximum parameters of the Proposed Development components as they are currently known, therefore outlining the 'worst case scenario'. The worst case is the scenario that will be assessed within the EIA Report and therefore whatever location or footprint is decided and applied, the EIA Report will ensure that the maximum level of significant environmental effects is considered.

4.5 Definition of the Study Area

4.5.1 Study areas have been defined individually for each environmental factor, taking into account the geographic scope of the potential impacts relevant to that factor and the information required to assess those impacts. The proposed study areas are described within **Chapter 6: Environmental Factors to be scoped in**.

4.6 Establishing Baseline Conditions

4.6.1 Environmental effects of the Proposed Development will be described in the EIA Report in relation to the extent of changes to the existing baseline environment as a result of the construction, operation and decommissioning of the Proposed Development. The baseline environment will comprise the existing environmental characteristics and conditions, based upon desktop studies and field surveys undertaken and information available at the time of the assessment.

4.6.2 The baseline conditions for each environmental factor / topic assessment will be set out within the respective assessment chapters of the EIA Report. Currently known baseline conditions relevant to the individual factor / topic assessments are presented in **Chapter 6: Environmental Factors to be scoped in**.

4.7 Establishing Future Baseline Conditions

4.7.1 Schedule 4, paragraph 3 of the EIA Regulations requires consideration of the likely evolution of the current state of the environment (baseline scenario) in the absence of the Proposed Development, as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge (the 'future baseline').

4.7.2 Whilst there are considerable limitations to the predictions that can be made about natural baseline conditions at a future point in time, reasonable effort will be made to characterise the future baseline in the absence of the Proposed Development in each environmental factor / topic assessment. In addition, some assessments require projections to account for future change, such as traffic growth, within the assessment of likely significant environmental effects associated with the Proposed Development.

4.8 Approach to Mitigation

4.8.1 Schedule 4, paragraph 7 of the EIA Regulations requires that an EIA report contains:

"A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases."

4.8.2 Identifying mitigation measures to reduce any potential significant environmental effects from the Proposed Development will be a key outcome of the EIA process. The sequential steps of the mitigation hierarchy are as follows:

- Avoidance – take measures to avoid creating impacts from the outset
- Minimisation – measures taken to reduce the duration, intensity and extent of the impact if they cannot be avoided
- Restoration – measures taken to improve ecosystems following exposure to unavoidable impacts
- Offset – measures taken to compensate for any residual impacts.

4.8.3 The 'Institute of Environmental Management and Assessment's (IEMA) Environmental Impact Assessment Guide to Shaping Quality Development' (November 2015) refers to three distinct forms of mitigation:

- Primary - an intrinsic part of the project design
- Secondary - typically described within the factor Chapters of the EIA Report, but often are secured through planning conditions and/or management plans
- Tertiary - required regardless of any EIA, as it is imposed, for example, as a result of legislative requirements and/or standard sectoral practices.

4.8.4 **Table 4.8.1** contains the embedded (primary) environmental mitigation measures that, based on the initial scoping layout of the Proposed Development, are considered to be an inherent part of the proposed Development (i.e., the project design principles and best practice measures adopted to avoid or prevent

adverse environmental effects). These will likely evolve over the course of the design evolution, up to submission of the Application.

Table 4.8.1 Embedded (primary) environmental mitigation measures

Environmental Factor	Embedded (Primary) Environmental Mitigation Measure and Associated Benefit
Ecology	The aim will be to retain as much existing habitat as possible so there is minimal loss for turbine bases and associated infrastructure. Significant effects upon ecological receptors will be avoided or minimised where possible through the iterative design process. Protected species resting sites (e.g., badger setts, otter holts, and bat roosts) would be avoided in project design with appropriate buffer zones applied. In relation to reducing bat morality risk from the operational wind turbines, minimum buffer zones around existing or proposed woodland edges and waterbodies will be proposed and will comply with current best practice guidance. As well as helping to inform the EIA process, the results of the proposed ecology baseline surveys and desk study will also be used to determine key constraints for the wind farm design. For example, the vegetation surveys will provide data to identify sensitive habitats, including ground water dependent terrestrial ecosystems (GWDTE), that should be avoided where possible. Buffer zone sizes, required to protect the local hydrological regime supporting the habitat, will vary depending on a range of factors including the extent and depth of proposed excavation. Recommended buffer zones will be determined alongside the hydrology and hydrogeology constraints and included as part of any necessary mitigation.
Cultural heritage	Any infrastructure including the Site access associated with the Proposed Development would be designed to avoid identified heritage assets. Any previously unknown heritage assets that may be found during the desk-based assessment or field visit would be avoided in project design.
Telecommunications	Layout design to ensure blade tip to link path separations exceed operator-defined minima to avoid diffraction and/or reflection effects on the performance of fixed telecommunications links.
Traffic and Transport	Construction (and permanent) site entrance(s) will be designed and constructed in accordance with the Highland Council's and/or Design Manual for Roads and Bridges guidance. Provides a safe and appropriate means of access.
Landscape	– A balanced composition – A layout that does not cross Landscape Character Type (LCT) boundaries – Use of turbines of a size that the landscape can accommodate
Visual	– A balanced composition without outliers and excessive overlapping/stacking from as many key views / view directions as possible – Appearance from key visual receptors to be balanced and carefully designed, if it cannot be avoided – Use of turbines of a size that the area can accommodate without excessive significant effects on views – Set back from properties to be at least 1km where possible, to avoid effects on residential visual amenity – Lighting at night to be minimised with a reduced lighting scheme if possible; and lights designed to be a horizontal beam with reduced brightness when seen from below
Landscape and Visual	– Ground level infrastructure to avoid excessive visibility of large areas of cut and fill – Substation and infrastructure to be located to minimise visibility from key receptors

4.8.5 The embedded (primary) environmental mitigation measures should not be confused with additional (secondary and tertiary) mitigation measures proposed in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment, which are described under the 'Additional (Secondary and Tertiary) Mitigation Measures' section within each environmental factor of this EIA Scoping Report (**Chapter 6: Environmental Factors to be scoped in**).

4.8.6 The EIA Report will further describe, for each environmental factor / topic, the compensatory mitigation measures which may be required to offset or further reduce significant effects of the Proposed Development, and will offer enhancement measures which would be beneficial to the environment above and beyond compensatory mitigation measures. For the purposes of this EIA Scoping Report and the EIA

Report, all mitigation measures (embedded, secondary and tertiary), as well as compensatory measures, will form part of the Proposed Development for which consent will be sought.

4.9 Assessment of Likely Significant Effects

4.9.1 The EIA Report will contain an assessment of the likely significant effects for the Site preparation, earthworks and construction (hereafter referred to as 'construction'), operational (i.e., once completed and open to use) and decommissioning phases of the Proposed Development.

4.9.2 The following criteria will be taken into account when determining significance:

- the receptors/resources (natural and human) which would be affected and the pathways for such effects
- the geographic importance, sensitivity or value of receptors/resources
- the duration (short-term, medium-term or long-term); permanence (permanent or temporary) and changes in significance (increase or decrease)
- reversibility (e.g., whether the change is reversible or irreversible, permanent or temporary)
- environmental and health standards (e.g., local air quality standards) being threatened
- feasibility and mechanisms for delivering mitigating measures (e.g., Is there evidence of the ability to legally deliver the environmental assumptions which are the basis for the assessment?).

4.9.3 The method for assessing significance of effects varies for each environmental factor/ topic but, in principle, will be based on the environmental sensitivity (or value/importance) of a receptor/resource and the magnitude of change from the baseline conditions. The approach to assessing the significance of effects for each individual environmental factor / topic assessment is outlined within **Chapter 6: Environmental Factors to be scoped in** and **Appendix C**.

4.9.4 Summary of effect tables that summarise the likely significant environmental effects associated with each of the environmental factors / topics will be provided in the EIA Report at the end of each environmental factor / topic assessment chapter. These tables will outline sensitive receptors, additional mitigation measures and residual effects. A distinction will be made between direct, indirect, secondary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects. Cumulative effects will be considered as a single coordinated assessment.

4.10 Opportunities for Enhancing the Environment

4.10.1 Where possible, there will be a commitment to identifying opportunities for enhancement within the relevant environmental factor / topic assessments. IEMA's Special Report on 'The State of Environmental Impact Assessment in the UK' (2011) defines enhancement as '*a measure that is over and above what is required to mitigate the adverse effects of a project*'.

4.10.2 Any identified enhancement measures will not be taken into account when determining the significance of effects. Enhancement measures will be assessed in accordance with steps set out in the NPF4 relevant supporting guidance.

4.11 Approach to Assessment of Cumulative Effects

Proposed Assessment Methodology

4.11.1 Schedule 4, paragraph 5 of the EIA Regulations states that the EIA Report should include: A description of the likely significant effects of the development on the environment resulting from, inter alia …(e) *the cumulation of effects with other existing and/or approved development, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;…*

4.11.2 Regulation 4 (2) of the EIA Regulations states that the EIA "*must identify, describe and assess in an appropriate manner, in light of the circumstances relating to the proposed development, the direct and indirect significant effects of the proposed development (including, where the proposed development will have operational effects, such operational effects)…*" including the interactions between the environmental factors listed in Regulation 4(3) (i.e., population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape).

4.11.3 Cumulative effects occur as a result of several actions on an environmental receptor which may overlap or act in combination. The following types of cumulative effects will be considered in accordance with the EIA Regulations and best practice guidance:

- **Intra-project combined effects** – the interaction and combination of different environmental residual (post-additional mitigation) effects from within the Proposed Development affecting a receptor
- **Inter-project cumulative effects** – the combined residual (post-additional mitigation) effects of the Proposed Development and another project or projects on a single receptor/resource.

Intra-project combined effects

4.11.4 The approach to the assessment of interactions of environmental effects (intra-project combined effects) will consider the changes in baseline conditions at common sensitive receptors (i.e., those receptors that have been identified as experiencing likely significant environmental effects by more than one environmental factor) due to the Proposed Development. The assessment will be based upon residual (post-additional mitigation) effects of '**slight/minor**' or greater significance only ('**negligible**' residual effects will not be considered). The assessment will also include consideration of where multiple non-significant effects could combine to become significant. The study area for the assessment of intra-project combined effects will be informed by the study areas for the individual environmental factor assessments.

4.11.5 A quantitative assessment of the overall significance of the cumulative effects on common sensitive receptors will be undertaken, based on technical information provided in the environmental factor assessment chapters and supporting appendices, as well as professional judgement. Given that the types of effects may be very different in some cases, a quantitative assessment may not be possible, and it may be necessary to apply professional judgement in determining the significance of each individual effect.

4.11.6 The evaluation at the receptor level will consider: the magnitude of change at the common receptor; previously identified sensitivity; duration and reversibility of interaction. The focus will be on determining a change in the level of effect likely to be experienced and whether this is significant or not.

Inter-project cumulative effects

4.11.7 The approach to the assessment of inter-project effects will consider the deviation from the baseline conditions at common sensitive receptors as a result of changes brought about as a result of the Proposed Development in combination with one or more other existing development and/or approved development(s). The assessment of the inter-project effects will be based upon the residual (post-additional mitigation) effects that have been identified in the various environmental factor assessments for the Proposed Development, and other existing development and/or approved development.

4.11.8 All of the 'other existing development and/or approved development' considered in the cumulative assessment will be documented and the reasons for their inclusion or exclusion will be clearly stated in the EIA Report.

4.11.9 There is no widely accepted methodology or best practice for assessing cumulative effects generally, although various guidance documents exist in respect of specific environmental factor / topic areas. Relevant guidance where available, including from the IEMA, will been considered in the EIA Report.

4.11.10 The following principles will be considered when assessing the significance of inter-project effects, and in consideration of any mitigation measures required to avoid, prevent, reduce or, if possible, offset any identified significant adverse cumulative effects:

- Is there an inter-project effect on any receptors/resources;
- The duration and frequency of the effects;
- The nature of the receptors/resources affected;
- How the impacts identified combine to affect the condition of the receptor/resource;
- The probabilities of the impacts occurring in relation to each other in such a way so as to produce a cumulative effect, considering the extent and duration of the impact change;
- The ability of the receptor/resource to absorb further impacts; and
- Is the level of effect different to that considered at the project level and is the cumulative effect significant or not.

Difficulties and Uncertainties

4.11.11 The assessment of inter-project cumulative effects will be limited to publicly available information obtained from the relevant planning applications on THC planning portal. For some of the identified other existing development and/or approved developments, relevant information for this assessment may not be available. Where this is the case, the inter-project cumulative effects assessment will be based upon assumptions and professional judgement, reliant on the review of mitigation measures proposed as part of the other existing development and/or approved developments rather than the Proposed Development.

Identification of other existing development and/or approved developments

4.11.12 Consultation and discussion with THC, NatureScot and other stakeholders (as required) will be carried out to determine which other existing development and/or approved developments should be considered within the cumulative assessment. The list of existing development and/or approved developments for consideration in the cumulative assessment will be reviewed throughout the project design and impact assessment process.

5 ENVIRONMENTAL FACTORS PROPOSED TO BE SCOPED OUT

5.1 Introduction

5.1.1 This section describes the environmental factors / topics which, as part of the EIA process and based on the information available to date, may be adequately addressed in other chapters of the EIA Report and for which it is considered a stand-alone assessment is not justified.

5.2 Population and Human Health

5.2.1 According to IEMA guidance 'Effective Scoping of Human Health in Environmental Impact Assessment' (2022), in respect of human health, the aim of scoping is to identify if there is potential for significant effects on based on whether, arising from a Proposed Development, a change in a wider determinant of health is likely and potentially significant for the health of the population in the study area. The wider determinants of health relate to the World Health Organisation definition of health, under the following categories: health related behaviours; social environment; economic environment, bio-physical environment; and institution and built environment. As relates to the Proposed Development, the bio-physical wider determinants of health (i.e., water quality or availability, noise and vibration) are the most relevant.

5.2.2 Properly designed and maintained wind turbines are a safe technology and the site design and in-built buffers from sensitive receptors will minimise any risk to human health (and nuisance) resulting from the operation of the turbines. All other potential interactions with human health, building in health and safety best practice, and an appropriate approach to layout design, resulting from ice, lightning strike and structural failures are unlikely to occur and, as a result, no adverse or significant effects are anticipated.

5.2.3 Population and Human Health is therefore proposed to be scoped out of the assessment.

5.3 Air Quality

5.3.1 The main source of impact on air quality would be increased traffic on local roads and emissions from activities during the construction phase (and to a lesser extent during decommissioning).This includes emissions from exhaust fumes and dust generated from quarrying activities at borrow pits, and from unmade ground at borrow pits and access tracks in dry conditions.

5.3.2 It is considered that the emissions associated with these activities would be transient, localised and highly unlikely to have a significant effect upon local air quality. In addition, there are well established best practice measures applied to construction that will form an integral part of the on-site environmental management protocol (e.g., speed control, optimising deliveries to Site, dust control, restrictions on idling plant/vehicles, etc.).

5.3.3 There would be negligible emissions to air during operation, with the only source being occasional vehicles accessing the Site for maintenance purposes.

5.3.4 Air quality is therefore proposed to be scoped out of further assessment.

5.4 Material Assets

5.4.1 Material assets can be defined as "*substances used in each lifecycle stage of a development, with particular focus on the construction, operation and maintenance, and decommissioning or 'end of first life' (deconstruction, demounting, demolition and disposal) phases*" (IEMA, 2020b). Material assets can include 'material' (i.e., physical resources that are used across the lifecycle of a development) and 'excavated arisings' (i.e., soil, rock, or similar resource generated by excavations).

5.4.2 Waste is defined as *"any substance or object which the holder discards or intends or is required to discard"* (IEMA, 2020b). The Waste Framework Directive (European Parliament and the Council, 2008) definition includes any substance or object that is discarded for disposal or that has not been subject to acceptable recovery (including reuse and recycling).

5.4.3 The main impacts (changes) and effects (consequences) of materials consumption and waste disposal are presented in **Table 5.4.1**.

Table 5.4.1 Material assets (from IEMA guide to Materials and Waste in EIA)

Matter	Direct impacts	Adverse effect	Applicable development phase
Materials	Consumption of resources	Depletion of resources, resulting in the temporary or permanent degradation of the natural environment.	Construction, decommissioning
Waste	Generation and disposal of waste	Reduction in landfill capacity. Unsustainable use or loss of resources to landfill resulting in the temporary or permanent degradation of the natural environment.	Construction, decommissioning

5.4.4 An assessment of the indirect impacts associated with materials consumption and waste disposal (e.g., release of greenhouse gas emissions, water consumption, amenity impacts, ecological impacts, etc.) will be presented within the relevant environmental factor / topic chapters of the EIA Report. Similarly, any impacts on the environment (i.e., habitats and related species, landscape character and visual amenity, and hydrological regimes) arising from removal of woodland cover as a result of the Proposed Development will be assessed within the relevant environmental factor / topic chapters of the EIA Report.

5.4.5 The indirect impacts of any off-site waste management facilities and material production facilities are expected to be assessed (and where necessary, mitigated) under the planning and permitting regime for those sites and thus do not form part of an EIA for a development that uses such facilities for material supply or waste management.

5.4.6 A description of the potential streams and volumes of construction materials and waste disposal will be described within the 'Project Description' Chapter of the EIA Report. In addition to this, a Construction Environmental Management Plan (CEMP) will set out how construction materials and waste will be managed on-site, and opportunities to recycle waste will be explored. Where possible, development-specific commitments for sustainable resource management will be presented within the EIA Report. It is anticipated that, as part of a CEMP, there would be a requirement to develop and implement a Site Waste Management Plan and Materials Management Plan in advance of the construction works.

5.4.7 It is also not intended to remove significant quantities of excavated arisings from the Site during construction (there are currently no demolition works proposed, for example). Where possible, soil arisings will be balanced through a cut and fill exercise to retain volumes on-site.

5.4.8 For the operational phase, the potential streams and volumes of construction materials and waste disposal will be described within the 'Project Description' Chapter of the EIA Report. There will be relatively little waste produced during the operation phase and the requirement for material assets will be limited to maintenance and replacement parts, as required.

5.4.9 During decommissioning, any material assets and waste removed from the Site will be recycled or disposed of in accordance with good practice and market conditions at that time. If items can be recycled, this will be the first-choice option.

5.4.10 Taking the above into account, it is not proposed to prepare a separate material assets and waste Chapter in the EIA Report.

5.5 Heat and Radiation

5.5.1 Due to the scale and nature of the Proposed Development, it is not anticipated that there will be any significant sources of heat or radiation during construction, operation or decommissioning.

5.5.2 It is therefore proposed to scope out heat and radiation from the scope of the EIA.

5.6 Major accidents and disasters

5.6.1 Guidance on the consideration of major accidents and disasters is provided in 'Major Accidents and Disasters in EIA: An IEMA Primer'. This focuses on the consideration of low likelihood/high consequence events which would result in serious harm or damage to environmental receptors, and which could encompass risks exacerbated by climate change. This includes accidents or disasters originating from a proposed development as well as external events (man-made or natural).

5.6.2 The Proposed Development is made up of standardised renewable energy generating technologies (i.e., wind turbines) which are governed by health and safety regulations during their manufacture, construction and operation. As such, the risk of a high consequence disaster or accident occurring during its operation is very low. During construction, the risk of peat landsides is addressed in **Section 6.4** of this EIA Scoping Report.

5.6.3 Given the Site is located away from other developments that might interact with the technologies, it is also expected that the chance of a high consequence event occurring that could then lead to a major accident or disaster happening to the Proposed Development is very low.

5.6.4 With regards to the potential for major accidents or disasters occurring due to climate change, none of the following climate trends identified in UK Climate Projections (Met Office, 2023) will affect the Proposed Development, with the potential exception of:

- Increased windstorms:
- Increased temperature;
- Wildfire;
- Changes in the frequency, intensity, and distribution of rainfall events (e.g., an increase in the contribution to winter rainfall from heavy precipitation events and decreases in summer rainfall);
- Increased windstorms; and
- Sea level rise.

5.6.5 Braking mechanisms installed on turbines allow them to be operated only under specific wind speeds and should severe windstorms be experienced, then the turbines would be shut down.

5.6.6 The mitigation in place is generally sufficient to manage vulnerabilities to major accidents and/or disasters without the need for additional mitigation in most circumstances. It is not expected that inclusion of major accidents and disasters in the EIA scope would add any greater level of safety performance to that already established process. By implementing recognised and approved safety legislation and regulation, no significant effects in relation to major accidents and disasters are anticipated during the construction, operation and decommissioning phases.

5.6.7 It is therefore proposed to exclude major accidents and disasters from the scope of the EIA.

5.7 Other issues

5.7.1 This section of the EIA Scoping Report sets out topics under 'Other Issues' which are not likely to give rise to significant effects or which through application of mitigation, are not likely to give rise to significant effects. These are important issues related to onshore wind development and the Site which will be covered in separate supplementary reports to the Application for the Proposed Development and will include:

- Socio-economics
- Shadow flicker
- Forestry
- Aviation
- Telecommunications

5.7.2 The Applicant requests feedback from consultees in relation to the 'Other Issues' topics now discussed.

Socio-economics

5.7.3 Socio-economics, tourism, recreation and land use, are important policy considerations for the determination of proposed renewable energy developments and it is considered that the Proposed Development has the potential to make an important positive contribution to key social and economic policy objectives.

5.7.4 Instead of including a socio-economic assessment in the EIA Report, a Socio-Economic Statement will be prepared and submitted in support of the Application for consent outside of the EIA process in order to address policy considerations. The Socio-economic statement will cover the following aspects.

Net Socio-economic Impacts During Construction and Operation

5.7.5 To evaluate the economic impact from project expenditure during construction and operation, an input-output model will be used to calculate the direct, indirect and induced impacts of localised economic activity on the overall economy. The model generates the Gross Value Added (GVA) to the economy and the years of employment supported within the economy as economic indicators of impact.

5.7.6 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 locally, regionally and nationally. This increase in turnover will then be used to estimate the economic impact associated with the Proposed Development.

5.7.7 In order to calculate the economic effect of new jobs, the GVA per head for civil engineering related projects in Highlands and Scotland will be utilised. These figures will be sourced from the Scottish Annual Business Statistics. The economic impact assessment will also take displacement and multiplier effects into consideration to provide a net economic impact figure at the regional, national and UK levels. Multiplier effects will also be built into the economic impact assessment, and these will be sourced from the Type II Output, Income, Employment and GVA Multipliers, produced by the Scottish Government (Scottish Government, 2022). Additionality factors, including leakages and displacement, will be considered to provide net GVA and years of employment. The sum of direct, indirect and induced impacts equals the total GVA and employment supported. This is consistent with Scottish Government advice on net economic benefit.

5.7.8 A similar model will also be used for co-located renewable technologies, including the proposed BESS, on the Site, with the analysis drawing on the experience of deployment of this technology elsewhere across Scotland and the UK.

5.7.9 Initiatives such as community benefit funding and community ownership do not form part of the formal appraisal process within the planning system. However, these shall also be considered within the Socio-economic statement to present a fuller picture of the economic and social impacts that the Proposed Development could have.

Tourism

5.7.10 The potential effects on individual attractions and tourism facilities will be assessed. The zone of theoretical visibility of the Proposed Development will be used to identify tourism receptors, including accommodation, attractions and events within a maximum study area of up to 15km from the Site.

5.7.11 The impacts on tourism will be assessed with a focus on whether visitor behaviour is likely to change as a result of the construction and operation of the Proposed Development. This will include potential effects on visitor attractions and accommodation providers, in particular key features that make them attractive. It will also consider the assets, or clusters of assets, in areas that have been identified as being impacted in other chapters, including Transport and Access, Noise and Landscape and Visual.

5.7.12 The assessment will be informed by the most up-to-date evidence on the relationship between tourism and onshore wind development.

Indirect Recreational Impacts

5.7.13 Recreation effects will be assessed qualitatively with reference to guidance, evidence from research and comparable wind farms and using professional experience and judgement. The magnitude of impact of any visual effect reported in the landscape and visual assessment will be modified using professional judgment and with reference to the guidance detailed below to reflect the level of importance the visual experience plays in the overall recreational amenity of that attraction.

5.7.14 A study area of 5km from the Site will be used to identify informal tourism and recreational receptors which relate to walking routes and open spaces which are not commercial in nature; however, direct impacts will only be assessed for receptors within the Site.

5.7.15 For recreational assets, guidance is provided by NatureScot (Scottish Natural Heritage (2018) Environmental Impact Assessment Handbook) (formerly Scottish Natural Heritage) on how to assess effects on recreational amenity. This takes into consideration a number of potential effects, including direct effect 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 considers recreational and access impacts to potentially be significant where:

- There are 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;
- There is 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;
- 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;
- There are major constraints on or improvements for access or accessibility to designated natural heritage sites; and
- Mitigation and/or compensatory or alternative recreational provisions considered to be inadequate.

Land Use Effects

5.7.16 Impacts relating to effects on land use will be assessed using simple area analysis to gauge the magnitude of any resource loss as a consequence of the Proposed Development. The study area will cover all the land taken by the Proposed Development, either temporarily during construction or permanently during operation.

5.7.17 The Socio-economic statement will refer to the following key documents:

National

- Onshore Wind Policy Statement 2022;
- Tourism Scotland 2020;
- Scotland Outlook 2030;
- Scotland's National Strategy for Economic Transformation 2022;
- Scotland's Economic Action Plan 2019-20;
- Scottish Energy Strategy;
- Scottish Government (2018), Scotland's National Performance Framework;
- Scottish Tourism Alliance (2021);
- Scotland Outlook 2030;
- Draft Energy Strategy and Just Transition Plan (2023); and
- Onshore Wind Sector Deal (2023).

Local

- THC Net Zero Strategy (2023);
- Action Plan for Economic Development in Highlands (2012); and
- Highlands and Islands Enterprise (2019), 2019-2022 Strategy.

Shadow flicker

5.7.18 There is no formal guidance on the amount of shadow flicker that is considered acceptable within the UK. Other European countries do have guidance on shadow flicker; however, these vary from one country to another. Guidance which has been utilised in Northern Ireland, Germany and Belgium, suggests shadow flicker should not exceed 30 hours per year with a maximum of 30 minutes per day.

5.7.19 The proposed assessment method, will however, be based on established best practice guidelines, including the following as published by the Scottish government, THC, and the UK's Department of Environment and Climate Change:

- The Scottish government's web-based guide relating to onshore wind turbines (Scottish government, 2014);
- THC's Onshore Wind Energy Supplementary Guidance (THC, 2022); and
- Update of UK Shadow Flicker evidence base (Department of Environment and Climate Change, 2011).

5.7.20 In line with THC's guidance on Shadow Flicker Assessments, the assessment will consider dwellings located within a distance of 11 rotor diameters from the proposed wind turbine generators (hereafter referred to as the Zone of Potential Shadow Flicker (ZPSF). The ZPSF is the study area for the purposes of the shadow flicker assessment. It is noted that in the UK, shadow flicker can only occur within 130 degrees either side of north.

5.7.21 The study area is currently based on a worst case indicative rotor diameter of 162m; therefore, the proposed shadow flicker study area is based on a buffer of 1,782m from each proposed wind turbine within 130 degrees either side of north.

5.7.22 Should the wind turbine specifications change, a new study area will be established to reflect the 11-rotor diameter distance requirement.

5.7.23 Resoft WindFarm© Release 5 will be employed to undertake computer modelling for the assessment. The following data will be used for the computer modelling:

- Survey 5 digital terrain dataset;
- Address database;
- Wind turbine locations and specifications; and
- Geographic information of the study area (e.g., latitude, longitude, true north orientation angle, and other).

5.7.24 No specific surveys have been undertaken to inform the assessment, and none are planned. Should significant adverse effects be predicted at any residential receptor, a site survey will be undertaken to determine whether:

- The identified receptors have windows facing the Proposed Development;
- There are physical screening objects between the Proposed Development and identified receptors; and
- How receptor spaces subject to shadow flicker are being utilised.

5.7.25 There are residential properties within the preliminary ZPSF study area. All dwellings located within the study area will be assessed equally against the reasonable worst-case scenario criteria, and where appropriate, mitigation will be proposed.

5.7.26 If the model predicts potential shadow flicker beyond the threshold limits for any of the receptors within the study area (exceedance of 30 hours per year with a maximum of 30 minutes per day), the presence of windows facing the Proposed Development will be confirmed. If no windows are present, then no significant shadow flicker impact will arise, and no additional mitigation will be required.

5.7.27 If it is confirmed that locations with the potential for shadow flicker have windows facing the Proposed Development, a scheme of operational mitigation will be proposed. If it is not possible to avoid shadow flicker effects through turbine placement, then the dates, times and durations of shadow flicker events for each property within the ZPSF will be calculated using a computer model and an assessment of effects at these properties will be conducted.

5.7.28 A technical report will be produced which shows the amount of shadow flicker experienced at each receptor to determine the impacts on amenity of the properties which may potentially be affected. This report will be provided with the Application, separate from the EIA Report.

Forestry

Introduction

5.7.29 This section outlines the approach for assessment of the potential effects on the forestry within the Site Boundary which would result from the construction and operation of the Proposed Development. The Site is comprised of commercial forestry with isolated areas of open land and lochans. Areas of woodland will need to be cleared for the construction and operation of the Proposed Development including access tracks, turbine locations, BESS and ancillary infrastructure. The potential impact would be changes to the woodlands, which may result in a loss of woodland area.

Consultation

5.7.30 No consultation has been undertaken to date.

5.7.31 The main consultees in regard to forestry on this Site would be Scottish Forestry, the Owners' Forestry Advisors/Agents and THC. In addition, there may be interrelated issues raised by other consultees e.g., Scottish Environment Protection Agency (SEPA) on forestry residues, which would be addressed within the forestry assessment.

Policy and Guidance

5.7.32 Relevant policy and guidance which will be considered during the EIA include:

- Scottish Forestry Strategy, Scottish Government 2019;
- Right Tree in the Right Place - Planning for Forestry & Woodlands 2010, Forestry Commission Scotland;
- Control of Woodland Removal, Forestry Commission Scotland, 2009;
- The SPP 2014, The Scottish Government;
- NPF4 2023, The Scottish Government; and
- Climate Change (Scotland) Act 2009.

Study Area

5.7.33 The Proposed Development lies within Strathy Forest, a commercial block of forestry. The Forest lies within the Strathy water catchment with a number of watercourses on Site running into the River Strathy which is located to the east of the Site Boundary. There are a number of lochs located within the Site Boundary including Achrugan Loch, Loch Nam Breac Beag and other unnamed lochans.

5.7.34 The Site slopes gradually in a south easterly direction and has elevations ranging from 90mAOD to 30mAOD.

Method of Assessment

5.7.35 Any areas of anticipated loss of woodland cover as a result of the Proposed Development will be assessed within other specialist chapters within the EIA Report. These will primarily relate to impacts upon habitat and related species, landscape character and visual amenity and hydrological regimes.

5.7.36 The forestry baseline will describe the crops existing at time of preparation of the EIA Report. This will include total area, species composition; age class structure, yield class, other relevant crop information, and baseline felling and restocking plans, as available. The baseline will be prepared from existing records, site surveys and aerial photography.

5.7.37 The principal output will include a Wind Farm Forest Design Plan. This will include a felling plan to show which woodlands are to be felled and when they are to be felled to accommodate the Proposed Development. It will further include a restocking plan showing which woodlands are to be replanted and when during the life of the Proposed Development. The changes to the woodland structure will be analysed and described including changes to species composition, age class structure, timber production, traffic movements and the felling and restocking plans. The resulting changes to the woodland structure and any requirement for compensation planting for any woodland loss will be considered in the context of the Forestry Commission's Control of Woodland Removal Policy and in consultation with Scottish Forestry. The current preference to satisfy the compensatory planting requirement would be to restore areas of felling to peatland habitat.

5.7.38 Commercial forestry is not regarded as a receptor for a formal impact assessment. Instead the Wind Farm Forest Design Plan will be presented in a separate factual Technical Appendix which will describe the changes to the forest and its management, together with a summary in the main Project Description and the description of the design evolution.

5.7.39 The effects of the changes to forest design as a result of the Proposed Development will be considered within relevant chapters of the EIA Report

5.7.40 Opportunities for compensatory planting and/or habitat improvement will be outlined in conjunction with the Ecology Chapter of the EIA Report. This will include consideration of potential effects from the proposed planting upon other disciplines covered within the EIA Report.

Key issues for consideration in the EIA

5.7.41 Any woodland removal will be required to demonstrate compliance with the Scottish Government's policy on the control of woodland removal (FCS, 2009).

5.7.42 Where felling is permitted but woodland removal is not supported, conditions conducive to woodland regeneration will be maintained through adherence to good forestry practice as defined in the UK Forestry Standard.

5.7.43 The current preference is to satisfy the compensatory planting requirement would be to restore areas of felling to peatland habitat.

5.7.44 Any areas identified for potential compensatory planting elsewhere within the Site Boundary will be assessed for potential impacts by relevant topic specialists.

Baseline Conditions

5.7.45 A site survey has not been undertaken at the time of writing this Scoping Report but will be undertaken once the draft design layout has been confirmed.

5.7.46 A desktop study of the area using the Scottish Forestry Map Viewer has indicated an area of Native Woodland adjacent to Strathy Forest that lies to the East of the River Strathy. This area will need to be considered in respect of any impacts that may be proposed as part of the wind farm design.

5.7.47 The baseline will be compiled from a desk-based assessment and field surveys.

5.7.48 The field survey will consist of a site walkover to verify and update baseline data as necessary; assess the woodlands with respect to integration of the Proposed Development infrastructure; and to identify any opportunities within the Site Boundary for compensatory planting, if required.

Scoping Questions

1. *Are consultees content with the proposed methodology and scope for the forestry assessment?*
2. *Do the consultees have any information, particularly with reference to new guidance, which should be taken into account?*
3. *Do you require any shapefiles to assist you in your review of the Proposed Development?*

Aviation

Consultation

5.7.49 Consultation will be undertaken with all aviation stakeholders with assets identified as being subject to potential significant effects from the Proposed Development.

Study Area

5.7.50 Study areas are derived from the recommended consultation radii set out in CAA guidance CAP 764, and are:

- 100km radius from the Site Boundary has been adopted for air defence and air traffic control primary surveillance radars;
- 60km radius from airports with instrument flight procedures;
- 25km for other airfields and landing sites; and
- 20km for secondary surveillance radars and aeronautical radio navigation aids.

Data Sources to Inform the EIA Baseline Characterisation

5.7.51 The aviation baseline has been determined from the UK Aeronautical Information Publication, the UK Military Aeronautical Information Publication, CAA aeronautical charts, and Aviatica databases.

Baseline Conditions

5.7.52 The Site is located in uncontrolled airspace from ground level to Flight Level 195 (approximately 19,500 feet above sea level). Above that level is the Class C controlled airspace of the Scottish Upper Airspace Control Area, within which air traffic services are provided by the NATS En Route (NERL) Prestwick Centre. There are no NERL primary surveillance radars within the study area.

5.7.53 RAF Lossiemouth is located approximately 100km south of the Site. It operates a primary surveillance radar located on the airfield. The RAF Lossiemouth primary surveillance radar has no line of sight to the Proposed Development due to intervening terrain.

5.7.54 Wick Airport, a certificated airport operated by Highlands & Islands Airports Ltd, is located 54km east of the Site. It has nine published instrument flight procedures.

5.7.55 There are no air defence primary surveillance radars , secondary surveillance radars or aeronautical radio navigation aids within the study area.

5.7.56 The Site is located within Low Flying Area 14, where military aircraft are permitted to fly as low as 250 feet above ground level. The Site is wholly located within a part of Low Flying Area 14 which has been designated by the Ministry of Defence as a "*low priority military low flying area less likely to raise concerns*".

Additional (Secondary and Tertiary) Mitigation

5.7.57 Any Infringement of the altitude minima of Wick Airport instrument flight procedures would be mitigated by commissioning an instrument flight procedures assessment by Highlands & Islands Airports's Approved Procedure Design Organisation and implemented by means of an airspace change proposal to the CAA.

5.7.58 Obstacle hazards to low flying aircraft at night will be mitigated by provision of lighting on the turbines in accordance with the Air Navigation Order (ANO) 2016, Article 222.

Description of Likely Significant Effects

5.7.59 There is potential for the Proposed Development to require an upward revision of one or more altitude minima in Wick Airport's instrument flight procedures.. This is a potentially significant effect which can be avoided or reduced through mitigation.

5.7.60 The turbine blade tip heights will exceed 150 metres above ground level and will therefore be subject to mandatory lighting in accordance with the ANO 2016, Article 222.

Receptors/Matters to be Scoped into Further Assessment

5.7.61 Aviation matters to be scoped in to further assessment are listed in **Table 5.7.1**.

Table 5.7.1 Aviation receptors/matters to be scoped in

Receptor/ Matter	Phase	Justification
Wick Airport instrument flight procedures	Construction & operation	Potential to require upward revision of altitude minima
Turbine lighting	Construction & operation	Legal requirement

Receptors/Matters to be Scoped Out of Further Assessment

5.7.62 Aviation matters to be scoped out of further assessment are listed in **Table 5.7.2**.

Table 5.7.2 Aviation receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
Effects on air traffic control or air defence primary surveillance radars	Operation	None in study area or with potential for line of sight to the Proposed Development
Effects on secondary surveillance radars	Operation	None in study area
Effects on aeronautical radio navigation aids	Operation	None in study area
Effects on aerodromes other than Wick Airport	Construction and operation	None in study area

Proposed Assessment Methodology

5.7.63 The aviation assessment will be undertaken in accordance with the CAA guidance contained in CAP 764.

Difficulties and Uncertainties

5.7.64 No difficulties or uncertainties have been identified as affecting the conduct of the aviation assessment.

References

The Air Navigation Order (ANO) (2016), CAA Policy Statement, "*Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150m Above Ground Level*" (June 2017).

Scottish Government (2016), The Town and Country Planning (Safeguarded Aerodromes, Technical Sites, Meteorological Technical Sites and Military Explosives Storage Areas) (Scotland) Direction 2016

Civil Aviation Authority (CAA)(2016), CAA Policy and Guidelines on Wind Turbines, CAP 764.

Scoping Questions

1. *Do you agree with the proposed list of consultees?*
2. *Do you agree with the proposed study areas?*
3. *Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?*
4. *Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?*
5. *Are any receptors/assets/resources not identified that you would like to see included in the EIA Report?*
6. *Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?*
7. *Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?*
8. *Do you agree with the proposed factor-specific assessment approach?*
9. *Do you require any shapefiles to assist you in your review of the Proposed Development?*

Telecommunications

Consultation

5.7.65 Consultation will be undertaken with all telecommunications stakeholders which have assets that have been identified as being subject to likely significant effects from the Proposed Development.

Study Area

5.7.66 A study area of 1km radius from the Site Boundary has been adopted for fixed telecommunications links.

Data Sources to Inform the EIA Baseline Characterisation

5.7.67 The telecommunications baseline has been determined from the Ofcom Spectrum Information Portal and Wireless Telegraphy Register, and from consultations with telecommunications operators.

Baseline Conditions

5.7.68 A microwave fixed link operated by Vodafone runs through the northern part of the Site.

5.7.69 Microwave fixed links operated by Airwave, BT, Rapid Computers and Vodafone pass within 1km of the northern Site Boundary.

5.7.70 Atkins, Arqiva and the Joint Radio Company have advised that they have no facilities with the potential to be adversely affected by the Proposed Development.

Description of Potential Significant Effects

5.7.71 There is potential for the Proposed Development to adversely affect the performance of fixed telecommunications links. This is a potentially significant effect which can be avoided or reduced through mitigation.

Receptors/Matters to be Scoped into Further Assessment

5.7.72 Telecommunications matters to be scoped in to further assessment are listed in **Table 5.7.3**.

Table 5.7.3 Telecommunications receptors/matters to be scoped in

Receptor/ Matter	Phase	Justification
Diffraction and/or reflection effects on the performance of fixed telecommunications links	Construction and operation	Potentially significant effect

Receptors/Matters to be Scoped Out of Further Assessment

5.7.73 Telecommunications matters to be scoped out of further assessment are listed in **Table 5.7.4**.

Table 5.7.4 Telecommunications receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
Energy industry UHF scanning telemetry links	*Construction and operation*	Operator consultation response
Water industry UHF scanning telemetry links	*Construction and operation*	Operator consultation response
Television re-broadcast links	*Construction and operation*	Operator consultation response

Proposed Assessment Methodology

5.7.74 Assessment of the likelihood of the Proposed Development to adversely affect fixed telecommunications links will be based on application of the Ofcom-recommended 'Bacon formula' for separation distances between wind turbines and fixed links.

Difficulties and Uncertainties

5.7.75 No difficulties or uncertainties have been identified as affecting the conduct of the telecommunications assessment.

References

Bacon, D.F, (2002), 'A proposed method for establishing an exclusion zone around a terrestrial fixed radio link outside of which a wind turbine will cause negligible degradation of the radio link performance'

Ofcom (2009), Tall Structures and Their Impact on Broadcast and Other Wireless Services.

Scoping Questions

1. *Do you agree with the proposed list of consultees?*
2. *Do you agree with the proposed study areas?*
3. *Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?*
4. *Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?*
5. *Are any receptors/assets/resources not identified that you would like to see included in the EIA Report?*
6. *Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?*
7. *Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?*
8. *Do you agree with the proposed factor-specific assessment approach?*
9. *Do you require any shapefiles to assist you in your review of the Proposed Development?*

6 ENVIRONMENTAL FACTORS PROPOSED TO BE SCOPED IN

6.1 Landscape and Visual

6.1.1 The Landscape and Visual Amenity chapter of the EIA Report will consider the potential effects of the Proposed Development on landscape and visual receptors during construction and operation, and evaluate whether these effects are likely to be significant. This section of the EIA Scoping Report sets out the proposed methodology for the landscape and visual assessment (LVIA) which will include an assessment of cumulative effects, with a focus on likely significant effects and will identify effects that can be scoped out of the assessment.

Consultation

6.1.2 As part of the on-going work to inform the landscape and visual assessment, a consultation exercise to obtain additional data and the views of statutory consultees on the selection of viewpoints and scope of the cumulative assessment will be undertaken with NatureScot and THC.

Study Area

6.1.3 The initial study area for the LVIA will be 45km from the outermost turbines of the Proposed Development, as advised by NatureScot guidance, but it will be reduced to focus on likely significant effects to those landscape and visual receptors. Effects on landscape character will be considered for the wider study area (45km), but the EIA Report will focus on a 10-15km radius study area where significant effects will be more likely. Visual effects will be considered for locations across the wider study area, but those reported on in detail are likely to be within an area of approximately 25km radius for viewpoints and routes, and approximately 10km radius for settlements. A number of more distant viewpoints will be included to illustrate visibility of the Proposed Development, even though they will not be assessed in detail. A Zone of Theoretical Visibility (ZTV) to 45km from the Proposed Development is shown in **Appendix A, Figure 6.1.1** showing the potential visibility of the turbine tips of the Proposed Development based on bare-ground landform and topography. The ZTV will be used to enable a focussed assessment that considers potential significant landscape and visual effects. **Appendix A, Figure 6.1.2** shows the ZTV on a 1:100,000 scale background map for additional detail.

6.1.4 Following identification of the study areas, a preliminary review of the baseline conditions has been undertaken and the findings are reported below.

Data Sources to Inform the EIA Baseline Characterisation

6.1.5 The key sources of information to inform the characterisation of baseline landscape and visual conditions of the Site and its surroundings are:

- Ordnance Survey and other leisure maps;
- Landscape Character Type (LCT) descriptions; and
- Citations for designated landscapes including NSA, Local Landscape Areas (LLA), and Gardens and Designed Landscapes .

Surveys to Inform the EIA Baseline Characterisation

6.1.6 Desk studies will be carried out to identify key landscape and visual receptors, and to identify the likely visibility of the Proposed Development based on ZTV mapping and 3D modelling. Computer generated 3D models will be used to prepare draft wireline images to illustrate theoretical visibility and to assist fieldwork, and for detailed visualisation modelling through the production of wirelines and photomontages.

6.1.1 Fieldwork will be carried out including a visit to the Site, all viewpoints, and the wider area more generally to assess potential effects on landscape character areas (LCA) and designated landscapes. Photography will be undertaken for viewpoint locations, including photography at dusk for locations for which night-time photomontages are required to illustrate the effects of aviation lighting.

Baseline Conditions

<u>The Site</u>

6.1.7 The Site is located near the north coast of Scotland, within Sutherland, between and inland of Armadale (1.3km away) and Strathy (1.6km away). The Site includes the northern part of the Strathy Forest plantation, set approximately 1.5km south of the A836. The Site is east-facing, above the River Strathy,

with the Armadale Burn to the west of it. It is drained by tributaries of the River Strathy, and the Site area includes a number of small lochans, including Loch Achrugan and Loch nam Breac Beag.

6.1.8 Key landscape and visual receptors will be people living, visiting, or travelling in the area, particularly those along the A836 which is the main coast road and promoted as part of the 'North Coast 500' tourist route.

The Surrounding Landscape

6.1.9 The 45km initial study area runs from Durness to Dunnet Head along the coast, and extends inland to Ben Klibreck and Scaraben, and just short of the coast at Dunbeath. It extends offshore also, but does not quite reach Hoy. The ZTV in **Appendix A, Figure 6.1.1**, illustrates that theoretical visibility will not cover all of this area, particularly inland beyond hills, and as discussed above, the assessment will focus on a smaller study area where significant landscape and visual effects may occur. The area of approximately 20-25km radius includes land between the Kyle of Tongue to the west, east to Forss and inland to Alnabreac Station, the Bens Griam, Syre in Strath Naver, and Loch Loyal.

6.1.10 There are a number of existing wind farms within 15-20km of the Site, as shown on **Appendix A, Figure 6.1.1** including Strathy North, Bettyhill, Limekiln (under construction), Baillie, and Forss. Strathy Wood and Strathy South wind farms are consented. Consideration of the relationship between the Proposed Development and these wind farms will be a key aspect for both design of the scheme and assessment of landscape and visual effects. There are also a number of other consented and proposed wind farm developments in the study area, which will be considered in the cumulative assessment.

Landscape Character

6.1.11 The LCT's within the Site and study area (15km) are described in the 2019 NatureScot review of the landscape character of Scotland (SNH, 2019), and illustrated on **Appendix A, Figure 6.1.3**. As significant changes to character of landscape as a result of development do not normally occur beyond approximately 10-15km away, at which distance wind farms form a more distant feature in the backdrop to local landscapes, it is proposed that the assessment of landscape effects will focus on likely significant effects on landscape character within approximately 15km from the Proposed Development.

6.1.12 The NatureScot Landscape Character Assessment (SNH, 2019) identifies the Site and much of its wider area as the Sweeping Moorland & Flows LCT (LCT134), characterised by wide open space and the simple visual composition of undulating moorland. In this LCT, infrastructure, such as power lines and roads, is visible due to the openness of the surroundings, and extensive coniferous plantations dominate some areas. Generally, the landscape can be described as large scale with limited development and man-made features.

6.1.13 To the west of the Site beyond the Armadale Burn, the landscape is identified as Rocky Hills & Moorland (LCT136). This type occurs extensively across Sutherland and is characterised by more rugged landform, rocky outcrops and frequent small lochans. The Sweeping Moorland & Flows and Rocky Hills & Moorland LCTs run almost to the coast, with narrow strips of High Cliffs & Sheltered Bays (LCT141) and Coastal Crofts & Small Farms (LCT144). Strath Halladale and Strath Naver are of Strath – Caithness & Sutherland LCT (LCT142), comprising settled valleys with broadleaf woodland and enclosed fields on the valley slopes below the level of the surrounding moorland.

Designated Landscapes

6.1.14 Designated Landscapes are illustrated on **Appendix A, Figure 6.1.4** and set out in **Table 6.1.1**.

6.1.2 No part of the Site is located within a designated landscape, although the Farr Bay, Strathy and Portskerra LLA, these LLAs are identified as 'Special Landscape Areas' in the Local Development Plan (THC, 2012) is close to the Site.

Table 6.1.1 Designated Landscapes within approximately 25km

Designated Landscape	Approximate distance at nearest point	ZTV coverage and notes on inclusion in assessment
Kyle of Tongue NSA	10.5km to the west	Limited visibility at over 10km away, unlikely to have significant effects on Special Qualities, but will be considered in the LVIA.
Farr Bay, Strathy and Portskerra LLA	1.6km to the north	Visibility from south-facing slopes inland of the coast. To be considered in the LVIA.
Bens Griam and Loch nan Clar LLA	17km to the south	Limited visibility from north-facing slopes beyond 17km, unlikely to have significant effects on key qualities – will not be considered further.
Eriboll East and Whiten Head LLA	23km to the west	Limited visibility from east-facing coastal slopes beyond 2km, unlikely to have significant effects on key qualities – will not be considered further.
Tongue House, Inventory listed Gardens and Designed Landscape	23km to the west	No theoretical visibility – will not be considered further.

6.1.15 In addition to the designated landscapes listed above, NatureScot has identified Wild Land Areas (WLAs) across Scotland. The East Halladale Flows (WLA39) is situated approximately 8km south east of the Site, and Causeymire – Knockfin Flows WLA (WLA36) lies approximately 22km to the south-south east. Following NPF4, assessment of effects on WLAs is not required if the Proposed Development is not within wild land.

6.1.16 The Caithness Flows candidate World Heritage Site includes much of the land around the Site, but not the site itself (it generally excludes forested areas). The Outstanding Universal Values do not include landscape and visual matters, but the LVIA will consider the implications for the candidate World Heritage Site.

Visual Amenity

6.1.17 Effects on views and visual amenity occur when the Proposed Development changes or influences the view or visual amenity as experienced by people. Visual amenity may be described as the overall visual experience from a given location, whilst a 'view' reflects a specific direction. People may engage in different activities or have different perspectives and in recognition of these differences, it is common practice to refer to 'visual receptors'. These include:

- Residents within settlements and of individual properties;
- People who travel through the area with potential views of the Proposed Development; and
- People engaged in recreational activities including walkers on hills, mountains or core paths and visitors to tourist destinations where the visual experience is likely to include a focus on the surrounding landscape.

Visual Receptors

6.1.18 Settlement is limited to the coast and valleys across the study area. The closest settlements to the Site include Strathy and Armadale. Portskerra and Melvich are further east, approximately 5km away, and Kirtomy and Bettyhill are approximately 6km and 10km west respectively. The ZTV shown in **Appendix A, Figures 6.1.1** and **6.1.2** indicates theoretical visibility from Strathy, Armadale and parts of Bettyhill. Other more distant settlements will not be considered in the LVIA as they will have only distant views or are not within the ZTV.

6.1.19 Residential properties within 2-2.5km of the Site are found along the A836, and north of that road within Strathy, around Lenagullin and around Armadale House. Properties south of the A836 include Strathy West and properties at Bowside Lodge to the south east of the Site (within 1km of the Site).

6.1.3 Roads within the study area are limited, but include the A836 that follows the coast (part of the North Coast 500), the A897 along Strath Halladale, the B871 along Strath Naver, and short access roads off these to settlements or individual properties. There are more frequent minor roads further to the east across the farmlands of Caithness. The railway follows the Strath of Kildonan along the A897 to Forsinard, then crosses flat, open land westwards towards Georgemas and Wick. It passes 19km from the Site at its nearest point at Forsinard. Of these routes, only the A836 has notable ZTV coverage, such that other routes will not be considered in detail in the LVIA.

6.1.20 Recreational routes tend not to be limited to valleys. No long-distance paths cross the study area, but there are short walks close to the coast. Core paths within 5km of the Site will be considered in the LVIA, and include (THC, 2019):

- SU04.05 from the A836 to Kirtomy via Cnoc Mor;
- SU04.06 from Armadale west to the ruins at Poulouriscaig;
- SU04.07, SU04.08 and SU04.09 around Armadale Bay;
- SU19.06 Strathy Point Road, from Totegan to the light house (this route is not in the ZTV); and
- SU19.07 Strathy Bay, a short route from the A836 bridge over the River Strathy to the graveyard.

Proposed LVIA Viewpoints

6.1.21 Viewpoints proposed for the assessment of visual effects will be discussed with THC and NatureScot. An initial list of locations has been identified in **Table 6.1.2** below, and are shown on **Appendix A, Figure 6.1.5**. These include locations to represent:

- Viewpoints representing different view directions or viewing experiences;
- Views from routes including those listed above;
- Views from settled areas close to the Proposed Development;
- Views from key visitor locations within the surrounding landscape (e.g., from Strathy Point);
- Views that can be used to represent views from designated landscapes;
- Views from hill/mountain tops that are popular with walkers, such as the Bens Griam, Ben Loyal, Ben Dorrery, Beinn Ràtha; and
- Longer distant views from key locations at the edges of the study area, for reference rather than because significant effects are likely: such as Dunnet Head.

6.1.22 All viewpoints can be used in the cumulative assessment.

Table 6.1.2 Proposed Viewpoints

Viewpoint Title		Grid Reference		Approx. Distance (km)	Reason for Selection and Representativeness
1	A836 east of Kirtomy	276230	962657	4.8	On the A836, essentially the first view of the Proposed Development travelling eastbound. Sequential, representative.
2	A836 Crasbackie Hill	277899	963899	3.3	On the A836, open view when travelling eastbound descending towards Armadale. Sequential, representative.
3	Armadale	278614	964675	3.1	View from within Armadale settlement. Representative.
4	Strathy junction	283019	965754	2.2	View from just off the A835 at a small layby with a memorial, and car park for the Presbyterian Church. Sequential, representative, specific.
5	Strathy Point	282767	968497	5.0	View from the Strathy Point road, a view seen by visitors, and with views along the coast. Specific.
6	Strathy East	284307	965257	2.1	On the A836 at the turn-off to Strathy East, close to Strathy Church (Church of Scotland). Representing views west-bound coming down into Strathy. Sequential, representative.
7	A836 Caithness-Sutherland boundary	292000	964478	9.0	On the A836 on the Caithness – Sutherland Boundary to the east of Melvich, representing views west-bound along the road with views across Strath Halladale. Sequential, representative.

Viewpoint Title		Grid Reference		Approx. Distance (km)	Reason for Selection and Representativeness
8	Beinn Ràtha (Ceann Mor)	294962	960944	12.2	On the summit of this hill, overlooking the coast and within wild land. Not a well visited hill, but has been used in LVIAs for other wind farms. Specific.
9	A836 Forss	305710	969424	23.4	On the A835 near Forss to the east of Dounreay, representing more distant views west-bound along the coast. Sequential, representative.
10	Ben Dorrery	306287	955037	24.7	On the summit of this hill, overlooking the coast and Caithness. A small but relatively well visited hill, and a location which has been used in LVIAs for other wind farms. Specific.
11	A897 Forsinard	288350	940480	21.3	On the A897, as the first view of the Proposed Development travelling northbound. Slightly higher elevation than the Royal Society for the Protection of Birds (RSPB) Forsinard viewing tower, and on the road representing travellers' views. Sequential, representative.
12	Ben Griam Beg	283175	941175	19.5	On the summit of this Munro[1], overlooking the Caithness and Sutherland moorlands. Specific.
13	A836 Cnoc Craggie	260939	952773	21.8	On the A836 near Loch Craggie, at a viewpoint with a bench and interpretation, above and to the west of the road. There will be only a brief glimpse from this route, and therefore this viewpoint is more specific than representative.
14	Ben Loyal	257800	948870	26.2	On the summit of this Munro, overlooking the coast and with panoramic views of Sutherland. Specific.
15	Dunnet Head	320530	976491	39.6	At the viewing platform on Dunnet Head, a very popular visitor viewing location with views along the coast, to Orkney and inland. Specific.

Cumulative Wind Energy Development

6.1.23 As noted above, there are existing wind farms within and around the study area, which will be considered as part of the baseline for the LVIA. With respect to potential cumulative landscape and visual effects with other proposed wind farms, there are a number of developments at various stages in the planning process. Given the ever-changing situation, cumulative data (beyond existing and consented schemes) is not collated exhaustively at this time but will be prepared during the LVIA. Local authority planning portals and the Energy Consents Unit website will be used to identify proposed wind farms, and the final list will be agreed with statutory consultees to give as up-to-date a picture as possible.

Additional (Secondary and Tertiary) Mitigation

6.1.24 Potential additional (secondary and tertiary) mitigation measures which will be taken into account within the LVIA, during both the construction and operational phases of the Proposed Development are set out below.

Construction

- Restoration of disturbed ground, for example access track sides, as soon as possible after construction, particularly more visible sections.

[1] Munros are Scottish hills over 3000 feet / 914m.

Operation

- Operation of aviation lighting at reduced intensity in clear conditions, Civil Aviation Authority regulations for lighting (CAA, 2017) stipulate medium intensity steady red (2000 candela) lights on the hubs, but sets out that they can be reduced to 10% of peak intensity (200 candela) when the visibility around the Proposed Development exceeds 5km.

Decommissioning

- Restoration of disturbed ground, for example access track sides, as soon as possible after decommissioning, particularly more visible sections.

Description of Potential Significant Effects

6.1.4 Likely significant effects during the phases of the Proposed Development are set out below.

Construction

6.1.25 The landscape and visual effects that could arise as a result of the Proposed Development during construction are identified as follows:

- Temporary effects on landscape character, primarily as a result of wind turbine installation and felling during construction, with direct effects on the fabric on the landscape and on the character of the Site landscape relating to ground level structures, and indirect effects on the perceived effects on the character of the surrounding character areas; and
- Temporary visual effects on views, primarily as a result of visibility of ground level activity and structures following felling, as well as wind turbine installation during construction, experienced by people (visual receptors).

Operation

6.1.26 The landscape and visual effects that could arise as a result of the Proposed Development during operation are identified as follows:

- Long-term effects on landscape character, as a result of wind turbine operation and ground level structures, either affecting the pattern of elements that define the character or affecting the visual/perceptual characteristics of LCA's;
- Long-term visual effects as a result of the Proposed Development on nearby views, with effects as a result of wind turbine operation on wider views, experienced by people at places with visibility of different elements of the Proposed Development. This includes effects of aviation safety lighting after dark and effects on the visual aspects of residential amenity for residential properties close to the Site;
- Cumulative effects of the Proposed Development in combination with consented and proposed wind farm schemes across the wider area, including combined, successive and sequential visibility; and
- Significant effects on the landscape and visual resource identified in or affecting designated landscapes, which may affect their special qualities and reasons for designation.

Decommissioning

6.1.5 The effects of the Proposed Development during decommissioning will be less than those identified during construction as no ground disturbance is proposed, and will reduce as decommissioning proceeds.

Receptors/Matters to be Scoped into Further Assessment

6.1.27 To allow a focussed assessment, where receptors are unlikely to be affected by the Proposed Development, either through having little or no theoretical visibility, or being distant from the Proposed Development, they will be scoped out of the LVIA. The exception to this may be a few long-distance viewpoints specifically requested by consultees to provide evidence of likely visibility of the wind turbines from these locations, though effects are unlikely to be significant.

6.1.28 Landscape and visual receptors to be scoped in to the assessment are set out in **Table 6.1.3** below.

Table 6.1.3 Landscape and Visual Receptors/Effects to be scoped in

Receptor/ Effect	Main Phase	Justification
LCTs within approximately 15km radius	all	Significant effects on landscape character are more likely nearby, but 15km is considered a suitable distance to include all likely significant effects
Designated landscapes within approximately 20km radius	operation	Effects on key/special qualities are more likely nearby, but 20km is considered a suitable distance to consider potential implications on designated landscapes
Selected viewpoints within approximately 25km	all	Significant effects on views and visual amenity are more likely nearby, but 25km is considered a suitable distance to include all likely significant effects. There will be additional viewpoints provided to illustrate more distant views, although these will not be assessed (as there is no likelihood of significant effects)
Settlements within approximately 10km	operation	Significant effects on views from within settlements are more likely nearby, but 10km is considered a suitable distance to include all likely significant effects
Routes within approximately 25km, and paths to 5km	operation	Significant effects on views from routes are more likely nearby, but these distances are considered suitable to include all likely significant effects
Existing and under construction wind farms will be included in the LVIA baseline	operation	These are existing features in the landscape, wind farms under construction will be assumed to be present in full
Consented and proposed wind farms will be included in the cumulative assessment (those with valid applications, appealed) within approximately 25km, and scoping stage schemes within approximately 5km	operation	The patterns of development will be reviewed to 45km from the Proposed Development. Significant effects relating to relationships between wind farms are more likely nearby, but data for wind farms within 25km will be collated prior to focussing on key relationships likely to result in significant effects. Often groupings within 10-15km are most likely to result in significant effects, but sequential cumulative effects on routes can extend beyond this range, such that the scope may need to be extended rather than reduced.
Residential properties within approximately 2.5km	all	Guidance on Residential Visual Amenity Assessment (Landscape Institue, 2019) indicates that assessment should include properties within approximately 2km of proposed turbine locations. Given the size of turbines currently proposed, this will be increased to 2.5km
Selected viewpoints for assessment of aviation lighting effects	operation	NatureScot guidance (SNH, 2017) sets out that 2-3 viewpoints are likely to be required for the assessment of visual effects of aviation lighting

Receptors/Matters to be Scoped Out of Further Assessment

6.1.30 At this stage, it is proposed that the receptors set out in **Table 6.1.4** will not be included in the assessment, on the basis of the initial desk-based work undertaken.

Table 6.1.4 Landscape and Visual Receptors/Effects to be scoped out

Receptor/ Matter	Main Phase	Justification
Receptors without theoretical visibility (except routes where visibility can be intermittent)	all	No theoretical visibility Sections of routes without visibility will be included when considering views of the Proposed Development as part of the experience of the route
LCTs beyond 15km radius	all	No likelihood of significant effects beyond this range
Designated landscapes beyond 20km radius	operation	No likelihood of significant effects beyond this range
Viewpoints beyond approximately 25km	all	Wireline visualisations for selected viewpoints will be provided for illustration of more distant views, but these locations will not be assessed in detail as these are too distant for likely significant effects.
Settlements beyond 10km	operation	No likelihood of significant effects beyond this range
Routes beyond approximately 25km, paths beyond 5km	operation	No likelihood of significant effects beyond this range More distant sections of route may be included when considering views of the Proposed Development as part of the experience of the route
Scoping schemes beyond 5km and developments with turbines below 50m to blade tip height	operation	No likelihood of significant effects beyond this range
Residential properties beyond 2.5km	all	Guidance on Residential Visual Amenity Assessment indicates that assessment should include properties within approximately 2km of proposed turbine locations. Given the size of turbines currently proposed, this will be increased to 2.5km
Wild Land	operation	NPF4 sets out in policy 4g that *"Buffer zones around wild land will not be applied, and effects of development outwith wild land areas will not be a significant consideration*" (NPF4, 2023). As the Site is approximately 8km from the nearest Wild Land Area, a detailed assessment of effects on wild land is not required.

Opportunities for Enhancing the Environment

6.1.6 Opportunities for enhancing the environment around the Site will largely be at ground level, and will therefore not provide screening or mitigation for the tall structures proposed (turbines and anemometer masts). There are opportunities for enhancements at ground level that can be designed to assist screening of ground level structures, such as creating screening earthworks or banks.

Proposed Assessment Methodology

6.1.7 The landscape and visual assessment will identify likely significant effects of the Proposed Development on the landscape resource and visual amenity, in accordance with Guidelines for Landscape and Visual Impact Assessment (2013). Other sources of guidance and references used in the assessment will be industry standards. The exact documents used will be set out in more detail in the EIA Report. Local planning policy and guidance will also be reviewed in the EIA Report.

6.1.31 All maps and visualisations will be produced in accordance with NatureScot guidance. In addition to this, as the site is within THC area, visualisations compliant with THC Visualisation Standards (THC, 2016) will also be produced.

6.1.8 The most widely visible elements of the Proposed Development will be the wind turbines. Much of the LVIA will therefore, necessarily, consider primarily the visibility and effects of the turbines. However, the assessment of effects will consider all other elements of the Proposed Development throughout (i.e. tracks, BESS, substation, electrical infrastructure, etc).

Desk Study and Field Surveys

6.1.32 Desk studies will be carried out to identify key landscape and visual receptors (in addition to the reviews set out above), and to identify the likely visibility of the Proposed Development based on ZTV mapping and 3D modelling. Computer generated 3D models will be used to prepare draft wireline images to illustrate theoretical visibility and to assist fieldwork, and for detailed visualisation modelling through the production of wirelines and photomontages.

6.1.9 Fieldwork will be carried out as noted above.

Assessment of Landscape Effects

6.1.33 Effects on landscape character will be considered in detail for LCTs within approximately 15km of the Site, with ZTV mapping used as a means of identifying which LCTs require assessment. Predicted changes in both the physical landscape and landscape character will be identified. The assessment will identify the magnitude and type of change to the landscape, with reference to its key characteristics as set out in the NatureScot LCT descriptions (SNH, 2019).

6.1.34 The sensitivity of the landscape will also be taken into account, and value placed on the landscape through designation, key or unique characteristics, as well as the presence of other consented and operational wind farms. The magnitude of the effect will be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect. These aspects will all be considered, to form a judgement regarding the overall effect and whether this is judged to be significant.

6.1.10 Significance of landscape effects, considering receptor sensitivity and the magnitude of change as set out above, and in **Appendix C, Table 1 and 3**, will identify the level of effect using four categories: major, moderate, minor, and negligible (see **Appendix C, Table 5**). Major and moderate effects will be considered to be significant in the context of the EIA Regulations.

Assessment of Visual Effects

6.1.35 Visual effects are experienced by people at different locations around the study area, at static locations (for example from settlements or from selected viewpoints) and sequentially when travelling along routes. It is usually considered that grouping people related to 'status' (e.g., residents, visitors/tourists/motorist) or the 'activity' they are engaged in (sport, informal recreation, commuting) will help the assessment of sensitivity and lead to findings which can be considered representative. Assessment of the visual effects of the Proposed Development on receptors will be based on analysis of the ZTVs, field studies and assessment of representative viewpoints. Proposed viewpoints have been listed in **Table 6.1.2** above. Some key views of over 25km away may be provided with wirelines to illustrate potential visibility, even if no significant effects are likely to occur.

6.1.36 Guidelines for Landscape and Visual Impact Assessment states that the nature of visual receptors, commonly referred to as their 'sensitivity', should be assessed in terms of the susceptibility of the receptor to change in views/visual amenity and the value attached to particular views. The magnitude of the effect will be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect. These aspects will all be considered in forming a judgement regarding the overall effect and whether this is judged to be significant.

6.1.11 Significance of visual effects, considering receptor sensitivity and the magnitude of change as set out above, and in **Appendix C, Table 2 and 4**, will identify the level of effect using four categories: major, moderate, minor, and negligible (see **Appendix C, Table 5**). Major and moderate effects will be considered to be significant in the context of the EIA Regulations.

Aviation Lighting

6.1.37 In the interests of aviation safety, CAA policy (CAA, 2017) states that turbines over 150m to tip height are required to incorporate visible lighting. An assessment of the visual effects of aviation lighting on the proposed wind turbines will be carried out as part of the LVIA and included within the assessment.

6.1.38 The night-time context at viewpoint locations will be described, with the related sensitivity and magnitude of change arising from the proposed aviation lighting drawn upon to assess the likely visual effects of aviation lighting and to provide general comment on the likely effects across the wider area, to approximately 20km, beyond which distance attenuation and atmospheric conditions (even in clear weather) will reduce the brightness of the lights to very low to the point of not being visible to most people.

6.1.39 Night-time photomontages, using photographs taken shortly after dusk (with due consideration of safety of photographers), will be produced for two to three viewpoints to illustrate the potential appearance of aviation lights on turbines relative to the existing night-time baseline. The selection of viewpoints to be represented will be agreed with consultees, but may include:

- Viewpoint 2 A836 Crasbackie Hill – as a location on the A836 approaching the Proposed Development from the west;

- Viewpoint 4 Strathy junction – as a location close to the Site, on the A836 and seen from local properties.
- VP6 Strathy East - as a location on the A836 approaching the Proposed Development from the east, and seen from local properties.

6.1.40 It is not proposed to provide night-time visualisations from hills or remote off-road locations for Health and Safety reasons, and because there are less likely to be viewers in those locations after dark.

Visualisations

6.1.41 Visualisations and graphics used to support the assessment will include:

- ZTV maps analysing visibility of the proposed wind turbines to tip and hub heights as well as combined ZTV maps with other wind farms;
- Photographs of existing views from the selected viewpoints;
- Wireline images to illustrate theoretical visibility of the Proposed Development;
- Photomontages to illustrate the predicted changes to views; and
- Night-time photomontages for two to three viewpoints to illustrate the appearance of aviation lighting after dark.

6.1.12 Visualisations will include cumulative schemes, and will be produced in accordance with NatureScot guidance (SNH, 2017). Visualisations compliant with THC Visualisation Standards (THC, 2016) will also be produced.

Assessment of Cumulative Effects

6.1.42 The LVIA will consider operational wind farms and those under construction as part of the existing baseline.

6.1.43 The cumulative assessment (CLVIA) will consider the current pattern of wind farms across the wider landscape (to approximately 45km), but will focus on closer wind farms and the relationship that the Proposed Development will have with them. The CLVIA will assess the combined visual effects of the Proposed Development with other existing or reasonably foreseeable wind farms within approximately 15-20km. The CLVIA will consider operational and consented schemes, and those which have undetermined applications or appeals. The CLVIA will seek to focus detailed assessment on the cumulative effects of the Proposed Development with developments most likely to have cumulative relationships with the Proposed Development that result in significant effects.

6.1.44 As noted above, the research to collect cumulative data will be undertaken using the Council's planning portal and ECU website, and the scope of assessment and 'cumulative cut-off date' will be agreed with the Council and NatureScot to ensure the most up to date information available is included. Schemes at scoping stage within 10-15km will be included in the CLVIA if sufficient data is available. More distant scoping proposals and schemes with turbines below 50m to blade tip height will not be included in the CLVIA.

6.1.45 The CLVIA will be carried out in accordance with the principles contained in NatureScot guidance on cumulative assessment (NatureScot, 2021). This methodology assesses different development scenarios with increasing levels of **'uncertainty'**. Cumulative scenarios will include:

- Existing Scenario: this assesses the effects with all operational developments and those under construction present in the baseline and thus represents the LVIA;
- Consented Scenario: this scenario assumes that consented developments are also present in the landscape;
- In-planning Scenario: this is a speculative scenario because it assumes all undetermined applications, as well as all developments included in the earlier scenarios, are present in the landscape and therefore considers the effect of adding the Proposed Development into this landscape; and
- Scoping Scenario: As this is a highly speculative scenario, consideration will be brief, noting key potential relationships.

6.1.46 The intervisibility of the Proposed Development with other developments in the surrounding area will be explored by overlaying the ZTVs of other developments with that of the Proposed Development. Paired or grouped ZTVs will be prepared to illustrate the key relationships between the Proposed Development and other developments. It is not proposed that exhaustive combined ZTVs will be produced, but rather that selected combinations will be used to illustrate key intervisibility relationships. Cumulative visual effects

will be assessed through analysis of combined ZTVs, views from individual viewpoints, and sequential views from routes.

6.1.47 The magnitude of additional cumulative change to views or landscape character is the additional influence the Proposed Development has on the views or character of the landscape, assuming the other developments are already present.

6.1.48 The CLVIA will consider the in-combination effects of emerging wind energy development patterns, and how the Proposed Development relates to these patterns and trends.

Designated Landscapes

6.1.49 The LVIA will review the baseline description and citations of designated landscapes within the ZTV and within 20km of the Site. Following the assessment of landscape, visual and cumulative effects, there will be a review of the identified effects for landscape and visual receptors within those designated areas, and how the identified effects will affect the key qualities and reasons for designation. No separate assessment of effects on designated areas will be made, to avoid double counting.

Residential Visual Amenity Assessment

6.1.50 Visual amenity is a component of 'residential amenity', which includes noise, shadow flicker, etc., and is strictly a planning consideration relevant to residents at their properties. Changes in visual aspects of residential amenity will be considered in a 'Residential Visual Amenity Assessment', which typically considers effects on properties within approximately 2.5km of proposed turbine locations.

6.1.51 It is considered that a Residential Visual Amenity Assessment will be required as there are a number of residential properties near the Proposed Development. The Residential Visual Amenity Assessment will be carried out in accordance with the Landscape Institute guidance (2019) , considering properties individually or in groups where they have similar location, setting and outlook.

Difficulties and Uncertainties

6.1.13 To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- The reliance on bare-ground modelling for wireframes and ZTVs used in graphics, which does not take account of potential screening by buildings and vegetation. The theoretical visibility indicated by the bare-ground models is therefore an over-estimation of visibility. Actual visibility will be identified for receptors based on fieldwork, and will also be illustrated in photomontages. Photomontages will illustrate forest removal as part of the Proposed Development.
- It should be noted that illustrations and modelling cannot replace the need for site visits and can only be used to represent what people may see from the viewpoint. Whilst accuracy of modelling is essential, modelling can only be as accurate as the data used, and cannot be used to replace field visits. It is noted also that the movement of the turbines may render them more noticeable in the view than static photographs/photomontages can portray.
- Limitations to the cumulative assessment include the certainty of whether the proposed wind farms will be built in the future. This includes consented schemes that may or may not be built. The assessment will also rely on data available at the 'cut-off' date, and it should be noted that the locations and specifications of turbines may change for proposed and consented schemes before the are actually built, through redesign and/or micro-siting.

6.1.14 Any further assumptions and limitations encountered during the assessment process will be set out in the EIA Report.

References

Civil Aviation Authority (2017), DAP Policy 124: Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150m above Ground Level.

Highland Council (2012), Highland-Wide Local Development Plan (HwLDP)

Highland Council (2016) Visualisation Standards for Wind Energy Developments.

Highland Council (2019) Modified Core Paths Plan (Caithness and Sutherland) amended.

Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition.

Landscape Institute (2019) Residential Visual Amenity Assessment (RVAA). Technical Guidance Note 2/19

Scottish Government (2023) National Planning Framework 4.

Scottish Natural Heritage (2017) Visual Representation of Wind Farms Guidance Version 2.2.

Scottish Natural Heritage (2019) Digital map-based national Landscape Character Assessment. Available at: https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions. [Accessed 16/05/2024].

NatureScot (2021). Guidance-Assessing the cumulative impact of onshore wind energy developments.

Scoping Questions

1. *Do you agree with the proposed study areas for the various parts of the LVIA?*
2. *Do you agree that the data sources listed to inform the LVIA baseline characterisation are appropriate?*
3. *Do you agree with the initial selection of viewpoints for assessment?*
4. *Are any receptors or viewpoints not identified that you would like to see included in the LVIA?*
5. *Do you agree with the proposed mitigation measures and are these measures appropriate?*
6. *Do you agree with the receptors/effects that are proposed to be scoped in and out of the LVIA?*
7. *Do you agree with the proposed LVIA assessment approach?*
8. *Do you require any shapefiles to assist you in your assessment of the Proposed Development?*

6.2 Ecology

Consultation

6.2.1 Consultation will be undertaken with relevant ecological stakeholders including NatureScot, THC, Scottish Badgers and the local fisheries trust as required.

Study Area

6.2.2 Initial high-level baseline data collection has been undertaken to understand the context of potential ecological considerations for the Proposed Development.

6.2.3 The study area for the purpose of reporting preliminary baseline conditions for ecology comprises the Site Boundary with ecological receptors within 1km, 2km and 10km buffers referenced where applicable.

6.2.4 The proposed study areas for field surveys for habitats and protected species are determined in accordance with best practice guidelines. Study areas for protected species are defined in **paragraph 6.2.11**, where the proposed surveys are discussed.

6.2.5 The study areas may be refined if the Site Boundary is reduced to a developable area, as it would not be necessary to survey areas where there would be no development and potential impacts can be avoided.

6.2.6 Once selected, the preferred access routes will be surveyed with appropriate buffers applied.

Data Sources to Inform the EIA Baseline Characterisation

6.2.7 A background data search was undertaken in February 2024. The Highland Biological Recording Group was contacted for records of protected species within 2km of the Site Boundary, extended up to 10km for bats. Records for designated sites within 2km (including statutory and non-statutory) were also obtained, extended up to 10km for European designated sites. Ancient woodlands within 1km were also searched for.

6.2.8 The following data sources were used to inform this Scoping Report:

Table 6.2.1 Data Sources for Ecology scoping

Information Obtained	Available From
Protected and noteworthy species-records	Highland Biological Recording Group
Designated site locations and citations	NatureScot
Designated site locations and citations	Joint Nature Conservation Committee (JNCC) website
Designated site locations and citations	Highland Biological Recording Group
Designations and legal protection of noteworthy species	Joint Nature Conservation Committee (JNCC) website
Areas / Habitats of Strategic Significance	Highland Nature Biodiversity Action Plan https://www.highlandenvironmentforum.info/wp-content/uploads/2022/01/Highland-Nature-Biodiversity-Action-Plan-2021-2026-_compressed-.pdf

Surveys to Inform the EIA Baseline Characterisation

6.2.9 To build on the existing known baseline, a suite of surveys will be undertaken at the Site including the proposed turbine base locations plus access tracks to determine the ecological significance of the Site, presence of any potential ecological constraints, and to enable assessment of likely significant effects based on the criteria set out in **Appendix C, Table 6**.

6.2.10 A Phase 1 habitat survey will be undertaken, and national vegetation classification (NVC) surveys will then be undertaken in suitable habitat to determine the likelihood for ground water dependent terrestrial ecosystems (GWDTEs). NVC and GWDTE surveys will be undertaken within 250m of proposed working areas.

6.2.11 Based on existing information and local knowledge, it is proposed that surveys for the following protected species are also undertaken:

- badger (*Meles meles*) (detailed surveys within 100m of all proposed works areas to search for evidence such as setts, latrines and footprints followed by monitoring of setts if required);
- otter (*Lutra lutra*) (search of evidence 250m upstream and downstream of any proposed watercourse crossings);
- water vole (*Arvicola amphibius*) (search of evidence 100m upstream and downstream of any proposed watercourse crossings (followed by surveys in spring and late summer/autumn to account for seasonal variation if required);

- pine marten (*Martes martes*) (detailed surveys of suitable habitat within 250m of all proposed works areas to search for evidence such as dens, scats and footprints (followed by monitoring of dens if required);
- red squirrel (*Sciurus vulgaris*) (detailed surveys of suitable habitat within 50m of all proposed works areas to search for evidence such as dreys, feeding remains and footprints (followed by monitoring of dreys if required);
- wild cat (*Felis silvestris*) (detailed surveys of suitable habitat within 200m of all proposed works areas to search for evidence such as dens, scats and footprints (followed by monitoring of dens if required);
- fish habitat walkover and freshwater pearl mussel (*Margaritifera margaritifera*) walkover 50m upstream and 100m downstream of any proposed watercourse crossings (to determine if further surveys are required), as well as aquatic invertebrate surveys; and
- bat surveys using static bat detectors deployed in spring, summer and autumn throughout the Site. A total of 12 detectors will be deployed (based on the proposed 14 turbine layout) in close proximity to proposed turbine locations (where possible) and these will be left to record for a minimum of ten nights per season. Based on current guidelines, it is not proposed to undertake static detector surveying at height given that there is no met mast or turbine currently on the Site on which to attach a detector, in addition, the majority of the Site will be clear-felled. Prior to deploying detectors, a bat scoping walkover will be undertaken to determine if there are any potential features which could support maternity or hibernation roosts, or swarming sites. If suitable locations are identified, it may be necessary to undertake further surveys to determine if bats are present (i.e., tree climbing surveys and/or emergence surveys).

6.2.12 The results of the above surveys will be reported within separate technical appendices to the EIA Report. Should any confidential information be reported (i.e., pertaining to badger setts), this will be provided in a confidential annex.

6.2.13 Presence/absence surveys for reptiles and great crested newt (*Triturus cristatus)* have been scoped out as reptiles are assumed to be present and can be safeguarded by precautionary mitigation implemented during construction works, whereas great crested newts are considered to be absent from this geographical location.

6.2.14 All detailed ecology surveys will follow recognised industry best practice guidance and survey protocols, including, but not limited to, the use of the following guidance:

- Rodwell, J.S. (ed.) (1991 - 2000) British Plant Communities. Volumes 1 - 5. Cambridge University Press, Cambridge, UK.
- Smith, A.J.E. (2004) The Moss Flora of Britain and Ireland, 2nd Edition. Cambridge University Press, Cambridge.
- Stace, C.A. (2019) New Flora of the British Isles, 4th Edition. Cambridge University Press, Cambridge, UK.
- Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition), Bat Conservation Trust.
- Gurnell, J., Lurz, P., McDonald, R. and Pepper, H. (2009) Practical techniques for surveying and monitoring squirrels, Forestry Commission Technical Note, FCPN011.
- Neal, E. and Cheeseman, C. (1996) Badgers. T & A D Poyser Ltd, London; Andrews (2013) Badger sett classification method (In Practice, CIEEM).
- Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines.
- Strachan, R. (2007). National survey of otter *Lutra lutra* distribution in Scotland 2003-04. Scottish Natural Heritage Commissioned Report No. 211.
- Strachan R., Moorhouse, T. and Gelling, M. (2011). Water Vole Conservation Handbook. Wildlife Conservation Research Unit.

6.2.15 In addition to the above surveys, information provided by relevant statutory bodies and interested parties (i.e., NatureScot and THC) as well as other stakeholders (i.e., Scottish Badgers and the local fisheries trust) during Scoping will be reviewed and included in the EIA Report as appropriate.

Baseline Conditions

6.2.16 Information on designated sites was collated and mapped by RSK to show their proximity in relation to the Site. This includes Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites

and Sites of Special Scientific Interest (SSSI), as well as Ancient Woodlands and Local Wildlife Sites. Designated sites located within the 10km study area are shown on **Appendix A, Figure 6.2.1**.

6.2.17 Caithness and Sutherland Peatlands SAC, SPA and Ramsar sites border the Site Boundary to the west. **Table 6.2.2** contains a list of the designated sites that lie within 10km of the Site Boundary.

Table 6.2.2 Statutory designated sites within 10km of the Site Boundary

Site Name	Designation	Distance (m) and orientation
Caithness and Sutherland Peatlands	SAC	Borders the Site Boundary to the west
Qualifying Features / Reason for Designation The general site characteristics include inland water bodies, bogs, marshes, heath, scrub, and dry grassland. It is designated due to having a range of high-quality freshwater loch habitats that include Oligotrophic to mesotrophic standing waters. There are also natural dystrophic lakes and ponds. This site also holds the largest peat mass in the UK and includes a large abundance of continuous sphagnum species. It also has extensive habitat suitable for otter as well as Marsh saxifrage (*Saxifraga hirculus*). The SAC borders the Site Boundary to the west.		
Caithness and Sutherland Peatlands	SPA	Borders the Site Boundary to the west
Qualifying Features / Reason for Designation This site is designated due to having populations of the following breeding birds listed in Annex II of Directive 92/43/EEC: black-throated diver (*Gavia arctica*), red-throated diver (*Gavia stellata*), common scoter (*Melanitta nigra*), dunlin (*Calidris alpina schinzii*), golden plover (*Pluvialis apricaria*), greenshank (*Tringa nebularia*), wood sandpiper (*Tringa glareola*), wigeon (*Anas penelope*), golden eagle (*Aquila chrysaetos*), hen harrier (*Circus cyaneus*), short-eared owl (*Asio flammeus*) and merlin (*Falco columbarius*).		
Caithness and Sutherland Peatlands	Ramsar	Borders the Site Boundary to the west
Qualifying Features / Reason for Designation The site designated due to having large areas of blanket bog as well as there being internationally important populations of North Scottish greylag goose (*Anser anser*) and dunlin and nationally important populations of ten other waterfowl species.		
Strathy Point	SAC	2,110 - North
Qualifying Features / Reason for Designation The general site characteristics include shingle, sea cliff, inland water bodies, heath, scrub, inland rocks, permanent snow and ice as well as some built up areas. This site is designated due to having vegetative sea cliffs with extensive maritime communities.		
North Caithness Cliffs	SPA	5,260 – North - East
Qualifying Features / Reason for Designation The general site characteristics include caves, cliffs, rocky inlets and intertidal rock. It is designated due to supporting internationally important breeding populations of fulmar (*Fulmarus glacialis*), guillemot (*Uria aalge*), kittiwake (*Rissa tridactyla*), peregrine (*Falco peregrinus*), puffin (*Fratercula arctica*) and razorbill (*Alca torda*), as well as it's assemblage of other breeding seabirds.		
River Naver	SAC	9,000 – South-West
Qualifying Features / Reason for Designation The general site characteristics include inland water bodies, bogs, marshes, heath, scrub, dry grassland, broad-leaved woodland and inland rocks. The site is designated due to its populations of freshwater pearl mussel and Atlantic salmon (*Salmo salar*).		

6.2.18 Lochan Buidhe Mires SSSI borders the Site Boundary to the west. **Table 6.2.3** contains a list of the statutory designated sites that lie within 2km of the Site Boundary.

Table 6.2.3 Statutory designated sites within 2km of the Site Boundary

Site Name	Designation	Distance (m) and orientation
Lochan Buidhe Mires	SSSI	Borders the Site Boundary to the west
Qualifying Features / Reason for Designation Designated due to having blanket bog and a nationally important assemblage of breeding birds.		
West Halladale	SSSI	390 - East
Qualifying Features / Reason for Designation Designated due to supporting a nationally important assemblage of breeding birds including black-throated diver and common scoter. There is also blanket bog present on site.		
Armadale Gorge	SSSI	515 - West
Qualifying Features / Reason for Designation Designated due to having scrub and subalpine dry heath.		
Strathy Coast	SSSI	1,580 - North
Qualifying Features / Reason for Designation Designated due to having machair, maritime cliff, moine, saltmarsh and sand dune habitats as well as an important assemblage of vascular plants.		

6.2.19 There are no non-statutory designated sites within 2km of the Site Boundary.

6.2.20 Potential effects on the outstanding universal value attributes of the Flow Country WHS will also be assessed should the application for the candidate site be approved by UNESCO.

6.2.21 There is one area of ancient semi-natural woodland (31 hectares) in the north east part of the Site.

6.2.22 The habitats listed below are local formal targets (habitats identified as needing considered) in the Highland Nature Biodiversity Action Plan 2021 – 2026 (Highland Environment Forum, 2021) which are relevant to the Site.

- Upland and moorland
- Peatland and forest
- Woodland and forest
- Freshwater: rivers, burns and lochs
- Agricultural land.

6.2.23 Habitats within the Site Boundary comprise predominantly commercial forestry with small areas of open habitat most likely to include areas of peatland. The River Strathy borders the eastern Site Boundary and there are several smaller watercourses and lochans within the Site which flow westwards into the River Strathy.

- The background data search undertaken in February 2024 returned records of the following protected species:
- Six records of otter from within / potentially within 1km of the Site from between 2006 and 2012; and
- One common pipistrelle (*Pipistrellus pipistrellus*) record from within 1km of the Site from 2009.

6.2.24 In addition, there are records of the following noteworthy species: four invertebrate species (moss carder bee (*Bombus muscorum*), large heath butterfly (*Coenonympha tullia*), slender-horned horsefly (*Hybomitra montana)* and beetle (*Otiorhynchus desertus*), and European hedgehog (*Erinaceus europaeus*) which is a Scottish Biodiversity List (SBL) species.

Additional (Secondary and Tertiary) Mitigation

6.2.25 Where likely significant effects cannot be mitigated, measures to prevent and reduce significant adverse effects will be proposed and set out in the EIA Report for each phase of the Proposed Development (i.e. construction, operation and decommissioning).

6.2.26 Good practice measures during construction and operation of the Proposed Development would also be implemented (i.e., maintaining a minimum 10m buffer from watercourses to reduce effects on aquatic species). Methods of works would be described in suitable documents as appropriate such as Nature Enhancement Management Plan (NEMP) and species protection plans, as well as employment of an Ecological Clerk of Works as required. In accordance with the requirements of Policy 3 of NPF4, opportunities for biodiversity enhancement measures will also be identified and included within the NEMP.

6.2.27 Where mitigation by avoidance is not achievable, appropriate best practice mitigation measures would be proposed and the potential effects of the loss or disturbance to such sites fully considered in the EIA Report and in accordance with the legislation protecting the species. Should any protected species be identified within the study area that cannot be avoided in project design, development licences from NatureScot would be applied for as required using up-to-date survey information. These licences would either be for disturbance or closure/relocation of a species/feature.

6.2.28 Prior to the construction, a detailed CEMP, as well as a Habitat Environmental Management Plan will be prepared. The CEMP will identify those responsible for the management and reporting on the environmental aspects during the construction of the Proposed Development and will also include the restoration and remediation of habitats following the construction phase.

6.2.29 Toolbox talks will be given to contractors to make them aware of the protected species which may be present at the Site.

Description of Potential Significant Effects

6.2.30 The assessment will concentrate on the effects of the Proposed Development upon those ecological receptors that are identified during desktop studies and baseline surveys, as advised by consultees. Likely significant effects of the Proposed Development at construction, operation and decommissioning phases are described below.

Construction

6.2.31 The Proposed Development is likely to give rise to significant ecological effects during construction, including:

- effects on statutory designated sites due to their close proximity to the Site, including Caithness and Sutherland Peatlands SAC and Lochan Buidhe Mires SSSI which border the Site. This could include effects to aquatic designated sites due to the potential for pollution events. Effects on sites designated for birds (SPA and Ramsar sites will be addressed in **Chapter 6.3: Ornithology**);
- effects on terrestrial habitats including direct (i.e., permanent loss of habitat within the working areas due to ground and excavation works for the new turbine bases, infrastructure and access tracks) and indirect (i.e., changes caused by effects to supporting systems such as groundwater or overland flow);
- fragmentation of habitats or severance of ecological corridors during construction, as well as degradation of habitats that cannot easily be recreated;
- effects to aquatic habitats will be limited to the ecological effects of changes in water conditions through potential pollution. Hydrological effects such as potential impacts upon GWDTEs, hydrology and peat will be addressed separately within the Hydrology Chapter of the EIA Report (**Chapter 6.4: Hydrology, Geology, Hydrogeology, and Peat** of this Scoping Report) and will be considered within the Ecology Chapter, as appropriate;
- impacts on ancient woodland, including the protected species using them, given the presence of an ancient woodland within the Site Boundary;
- effects on protected species including direct (i.e., loss of life as a result of the Proposed Development; loss of key habitat; barrier effects preventing movement to/from key habitats; and general disturbance from movement of personnel and machinery as well as noise and vibration) and indirect (i.e., loss/changes of/to food resources; population fragmentation; degradation of key habitat (e.g., as a result of pollution);
- temporary and potentially permanent displacement of species from within the working areas, which would be particularly relevant to species such as bats, fish, otter, red squirrel, pine marten, reptiles and water vole (if present);
- impacts on adjacent habitats (and the species that use them), for example through noise and visual disturbance;
- environmental incidents and accidents (e.g., spillages, noise, fire and emissions); and
- rainwater runoff from hard-standing or during construction, such as track-way panels or temporary stone access routes.

6.2.32 Longer-term impacts, though more likely to be avoided or reduced through mitigation, may include the following in increasing order of permanence:

- modification of habitats and introduction of undesirable species (such as injurious weeds or invasive alien species) as a result of traffic movements, reinstatement works and landscaping; and
- long-term recovery of important habitats which cannot easily be recreated, although this is considered unlikely as it should be possible to avoid important habitats given the small amount of land-take required for turbine bases and infrastructure.

6.2.33 Where such impacts occur, additional mitigation measures may be adopted to help eliminate or offset impacts, such as timing of works, micrositing of the turbine bases and pre-construction checks for protected species, as discussed in **paragraphs 6.2.25 - 6.2.29**.

Operation

6.2.34 There may be direct effects on protected species, namely bats, during the operation of the Proposed Development, due to strikes with turbine blades or other infrastructure. This could be significant depending on the species recorded during the baseline surveys.

6.2.35 There may be local disturbance to species due to noise from the Proposed Development; however, it is expected that animals will readily adapt to new levels of noise over time. The significance of this will depend on the species recorded during the baseline surveys.

6.2.36 There may be an opportunity to enhance the habitat following construction in such a way as to benefit biodiversity such as improving degraded habitats, new native planting, and erecting bat or bird boxes in nearby trees, etc.

6.2.37 The current preference is to satisfy the compensatory planting requirement would be to restore areas of felling to peatland habitat.

6.2.38

Decommissioning

6.2.39 At the decommissioning phase, the potential effect on ecological receptors is expected to be similar to those experienced during construction.

6.2.40 The reinstatement of land would offer potential to enhance the area for biodiversity.

Habitat Regulations Assessment (HRA)

6.2.41 As part of the ecological assessment process, there will be a requirement for assessment of the project under The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and (depending on the details of the project design and the results of the screening) for Appropriate Assessment. This is due to the presence of designated sites within 10km of the Proposed Development.

6.2.42 A Habitats Regulations Assessment (HRA) screening report will be prepared and submitted for the Proposed Development for the designated sites relating to ecological receptors (i.e. SAC, SPA and Ramsar sites).

Receptors/Matters to be Scoped into Further Assessment

6.2.43 Based on the justification presented in **paragraphs 6.2.30 - 6.2.43**, the receptors/matters proposed to be scoped into the EIA are presented in **Table 6.2.4**.

Table 6.2.4 Ecological receptors/matters to be scoped in

Receptor/ Matter	Phase	Justification
Lochan Buidhe Mires SSSI, Caithness and Sutherland SAC, West Halladale SSSI and Armadale Gorge SSSI	Construction and decommissioning	Potential impact pathways identified due to the peatland and aquatic nature of these designated sites and close proximity to the Site.
The Flow Country proposed World Heritage Site (WHS)	Construction, operation and decommissioning	The Flow Country was nominated for WHS status in early 2023, based on natural heritage: internationally important blanket bog and associated biodiversity, plus ability to sequester and store carbon. The potential impacts upon peatland habitats associated with the WHS will be assessed in the EIA should the application for the candidate site be approved by UNESCO.
Ancient woodland	Construction and decommissioning	Ancient woodland is present within the Site therefore there is potential for direct impacts on the trees and species present, as well as indirect impacts.

Receptor/ Matter	Phase	Justification
Habitats	Construction and decommissioning	Loss and fragmentation of habitats during construction, some of which may be priority habitats. Effects due to environmental incidents, runoff etc. during construction and decommissioning.
Species - general	Construction and decommissioning	Potential disturbance to species during construction and decommissioning works due to noise etc as well as loss and fragmentation of habitat. Direct effects such as loss of life due to machinery movements and ground works.
Species - general	Operation	Disturbance and displacement due to new levels of noise at the Site.
Bats	Operation	Loss of life due to turbine strike and/or barotrauma.

Receptors/Matters to be Scoped Out of Further Assessment

6.2.44 Based on the justification presented in **paragraphs 6.2.30 - 6.2.43** the receptors/matters proposed to be scoped out of the EIA are presented in **Table 6.2.5**.

Table 6.2.5 Ecological receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
Great crested newt	All	Great crested newts have been scoped out of the proposed assessment due to the upland nature and the geographical location of the Site. Further to this, no records of great crested newt have been identified within 2km of the Site during a high-level desk study. It is considered unlikely that this species will be present within the Site and the surrounding habitats.
Strathy SAC, Strathy SSSI, River Naver SAC and Invernaver SAC	All	Due to the size of the Site and the distance of some designated sites from the Site Boundary (i.e. Strathy SAC, Strathy Coast SSSI, River Naver SAC and Invernaver SAC) it is considered that these will not be impacted by the Proposed Development and are therefore scoped out.

Opportunities for Enhancing the Environment

6.2.45 In accordance with the requirements of Policy 3 of NPF4, opportunities for biodiversity enhancement will be identified and included within the NEMP. These may include erection of bat and bird boxes in nearby trees, planting of native species and restoration of peatland habitat, for example. It is noted that the Scottish Government is developing a biodiversity metric for Scotland; however, it is unclear whether this will be developed in time for use in this application. It is noted that in both the Scottish Government's Draft Planning Guidance: Biodiversity (2023) and THC's minutes from the meeting of the Economy and Infrastructure Committee on 2nd May 2024, in which they adopted their Draft Biodiversity Planning Guidance with modifications, that the method of calculating biodiversity enhancement is not prescriptive currently. The approach used for calculating biodiversity enhancement would be clearly set out and justified.

Proposed Assessment Methodology

6.2.46 Ecological impact assessment is governed by international and national legislation. In Scotland, the key legislation applicable for ecology is as follows:

- Habitats Directive in relation to Natura 2000 sites;
- The Conservation (Natural Habitats, & c.) Regulations 1994 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act 2004;
- Wildlife and Natural Environment (Scotland) Act 2011; and
- Protection of Badgers Act 1992.

6.2.47 Planning policy relevant to the Proposed Development is set out in **Chapter 3: Planning and Energy Policy Context** of this Scoping Report.

6.2.48 On completion of field surveys, an Ecology Chapter for the EIA Report will be produced. Impacts will be assessed in accordance with the Chartered Institute of Ecological and Environmental Management (CIEEM) guidance (2018) and other relevant guidance.

6.2.49 The assessment will describe the potential direct and indirect effects of the Proposed Development upon ecological receptors. The significance criteria to be applied in the Ecology Chapter of the EIA Report is described in detail in **Appendix C.**

Difficulties and Uncertainties

6.2.50 To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- The impacts on ecological receptors cannot be accurately determined until completion of baseline surveys to gain up-to-date information on habitats and protected species at the Site. On completion of the baseline surveys, a more detailed assessment of effects and their significance can be made.

References

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

Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition), Bat Conservation Trust;

Gurnell, J., Lurz, P., McDonald, R. and Pepper, H. (2009) Practical techniques for surveying and monitoring squirrels, Forestry Commission Technical Note, FCPN011

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Strachan, R. (2007). National survey of otter *Lutra lutra* distribution in Scotland 2003-04. Scottish Natural Heritage Commissioned Report No. 211;

Scoping Questions

1. *Do you agree with the proposed list of consultees?*
2. *Do you agree with the proposed study areas?*
3. *Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?*
4. *Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?*
5. *Are any receptors/assets/resources not identified that you would like to see included in the EIA Report?*
6. *Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?*
7. *Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA Report?*
8. *Do you agree with the proposed factor-specific assessment approach?*
9. *Do you require any shapefiles to assist you in your review of the Proposed Development?*

6.3 Ornithology

Consultation

6.3.1 Preliminary consultation with NatureScot was undertaken in May 2023 to detail the proposed scope for ornithological surveys. NatureScot (Operations Officer - North) confirmed they were satisfied with the proposed approach to baseline ornithological surveys (by email dated 18th May 2023).

6.3.2 NatureScot agreed that potential effects on the following statutory designated sites, with ornithological interest, can be scoped out of detailed assessment: North Caithness Cliffs SPA, Red Point Coast SSSI, Skelpick Peatlands SSSI and East Halladale SSSI, principally due to the spatial separation between the designated sites and the Site.

6.3.3 NatureScot added that relevant ornithological interests will be covered by consideration of interests of the Caithness and Sutherland Peatlands SPA and advised that peregrine (*Falco peregrinus),* osprey (*Pandion haliaetus*) and Greenland white-fronted goose (*Anser albifrons flavirostris*) should be considered as target species.

6.3.4 NatureScot confirmed that desk-based study should be undertaken, and this should include consideration of publicly available documentation from the other nearby wind farms under development or in operation.

6.3.5 The Royal Society for the Protection of Birds (RSPB), Highland Raptor Study Group and Highland Biological Recording Group will also be contacted by relevant ornithological records (see information sought in **paragraph 6.3.8**).

Study Area

6.3.6 Study areas for baseline ornithological information gathering have been based upon the Site Boundary, extended to record flight activity, nest, roost and display sites for target species in accordance with NatureScot guidance (SNH, 2017 and 2018a). Study areas specific to the survey type are provided in **paragraph 6.3.8**. Study areas adopted will be updated over the course of the EIA to account for changes in scheme design and where land access permissions allow.

6.3.7 The study areas for the desk studies will be out to 10km from the Site Boundary for eagle records and statutory designated sites (extended to 20km for statutory designated sites with migratory goose interest), and typically out to 6km for other notable and protected ornithological species.

Data Sources to Inform the EIA Baseline Characterisation

6.3.8 The following key sources have (or will) be consulted to inform baseline information gathering, which will be included in the EIA Report:

- Sitelink website (NatureScot, 2024a);
- Aerial imagery (Google Maps, 2024);
- NatureScot pre-application guidance for onshore wind farms (NatureScot, 2024b);
- NatureScot guidance on bird survey methods at onshore wind farm (SNH, 2017);
- NatureScot guidance on assessing significance of impacts from onshore wind farms outwith designated sites (SNH, 2018a);
- NatureScot guidance on assessing connectivity with SPAs (SNH, 2016);
- RSPB Scotland for records of protected, rare and/or notable avian species, within 6 km (extended to 10km for eagles), of the Site;
- Highland Raptor Study Group for records of raptors and owls within 6km (extended to 10km for eagles), of the Site;
- Highland Biological Recording Group for records of non-statutory sites, and protected, rare and/or notable avian species, within 2km, of the Site; and
- Publicly available documentation relevant to ornithology for nearby wind farms, including Strathy South (ECU Ref: ECU00002133) and Strathy Wood (ECU Ref: ECU00005239).

6.3.9 In addition, the ornithological field team, with considerable experience in the survey of comparable sites in the Highlands and across Scotland, were also able to advise on the known presence or potential presence of sensitive ornithological interests within the Site and surrounding area.

Surveys to Inform the EIA Baseline Characterisation

6.3.10 The scope of field surveys has been determined through a review of key sources listed above. In accordance with NatureScot guidance (SNH, 2017) two years of ornithological surveys are required,

unless it can be demonstrated that a reduced survey effort is appropriate. Given the close proximity of the Caithness and Sutherland Peatlands SPA it is considered that two years of ornithological surveys will be necessary. The following field studies are being undertaken to establish baseline ornithological conditions and potentially important ornithological features within the Site and surrounding area, which may be impacted by the Proposed Development:

- VP Flight Activity Survey (September 2022 to August 2024) covering indicative turbine locations at the time of survey plus a 500m buffer;
- Moorland Breeding Bird Survey comprising four visits covering open habitats within the Site extent plus 500m, where accessible, from April to July 2023 and 2024;
- Annex 1 and Schedule 1 Breeding Raptor and Owl Searches covering the Site extent plus 2km (extended to 6km for eagles (where accessible)), from February to early September 2023 and 2024; and
- Breeding Diver Searches covering suitable waterbodies within the Site plus waterbodies within 1km, where accessible, in April and May 2023 and 2024 (noting that waterbodies were also checked during raptor and owl searches, so information on divers was also gathered in July to August 2023).

6.3.11 All ornithological surveys were / are being carried out in accordance with NatureScot guidance (SNH, 2017).

Target Species

6.3.12 In review of existing ornithological information, the locality and consultation with NatureScot, the key ornithological sensitivities identified for this Site are considered to comprise the following target species, in accordance with NatureScot guidance (SNH, 2017 and 2018a):

- all Annex 1 and Schedule 1 raptors and owls;
- all divers;
- terns;
- skuas;
- common crane (*Grus grus*); and
- all other waders and waterfowl, including greylag goose (excluding feral species and mallard (Anas platyrhynchos)).

6.3.13 Secondary species comprise all non-Schedule 1 and non-Annex 1 raptors (buzzard (*Buteo buteo*), kestrel (*Falco tinnunculus*) and sparrowhawk (*Accipiter nisus*)), all gulls and any notable passerines e.g. BoCC Red-listed (Stanbury *et al*., 2021), and those listed on Schedule 1 of the Wildlife Countryside Act (WCA) 1981 (as amended; UK Government, 2024a).

Baseline Conditions

Desk Study

6.3.14 Statutory (international and national) designated sites located within 10km of the Site (extended to 20km for sites with migratory goose interest) are shown in **Appendix A, Figure 6.3.1** and summarised in **Table 6.3.1.**

Table 6.3.1 Statutory Designated Sites for Nature Conservation with Ornithological Interests

Site Name	Approximate Distance from the Site (km)	Qualifying Interests
Caithness and Sutherland Peatlands SPA and Ramsar	Adjoins the Site to the west.	*Breeding* • Red-throated diver (*Gavia stellata*); • Black-throated diver (*Gavia arctica*); • Hen harrier (*Circus cyaneus*); • Golden eagle (*Aquila chrysaetos*); • Merlin (*Falco columbarius*); • Golden plover (*Pluvialis apricaria*); • Wood sandpiper (*Tringa glareola*); • Short-eared owl (*Asio flammeus*); • Dunlin (*Calidris alpina*); • Common scoter (*Melanitta nigra*); • Wigeon (*Anas penelope*); and • Greenshank (*Tringa nebularia*). The eight wetland species listed above are qualifying features of the Ramsar site.
Lochan Buidhe Mires SSSI	Adjoins the Site to the west.	• Breeding bird assemblage.
West Halladale SSSI	0.4km, east.	*Breeding* • Black-throated diver; • Common scoter; and • Bird assemblage.
North Caithness Cliffs SPA	3.3km, north east.	*Breeding* • Peregrine ;and • Seabird assemblage, including fulmar (*Fulmarus glacialis*), kittiwake (*Rissa tridactyla*), Atlantic puffin (*Fratercula arctica*) and razorbill (*Alca torda*). *Migratory* • Guillemot (*Uria aalge*).
Red Point Coast SSSI	6.8km, west.	• Guillemot (breeding).
Skelpick Peatlands SSSI	7.6km, south west.	• Breeding bird assemblage.
East Halladale SSSI	8.2km, east.	*Breeding* • Dunlin; • Golden plover; and • Bird assemblage.
North Sutherland Coastal Islands SPA	10.2km, north west.	• Barnacle goose (*Branta leucopsis*) – (wintering).
Caithness Lochs SPA and Ramsar	19.5km, east.	*Wintering* • Whooper swan (*Cygnus cygnus*); • Greenland white-fronted goose; and • Greylag goose (*Anser anser*).

6.3.15 Full details of all other desk study records gathered will be presented in the EIA Report. Ornithological data considered sensitive (e.g. that pertaining to the breeding places of Schedule 1 of the WCA species) will be included within a confidential Annex to the EIA Report. This will not be made publicly available but will be issued to NatureScot and the ECU.

Field Surveys

6.3.16 Eighteen months of field surveys have been completed with surveys ongoing until, and including, August 2024. As such the following summary is based on survey results to date (up to, and including, February 2024).

6.3.17 Prior to the surveys commencing a reconnaissance visit was undertaken in August 2019 to appraise the most suitable locations for VPs, providing appropriate coverage of the VP flight activity survey study area (proposed turbines plus 500m).

6.3.18 Three VPs were used from September 2022 to April 2023 in Year 1 from the following locations:

- VP1 – NC 83397 603387;
- VP2 – NC 81758 63774; and
- VP3 – NC 83406 62633.

6.3.19 The VP locations and viewsheds, used in September 2022 to April 2023 are shown in **Appendix A, Figure 6.3.2**.

6.3.20 In late April 2023 in Year 1, VP1 was relocated to Grid Ref. NC 80708 60490 ('VP1a'), to provide increased coverage of the western extreme of the Site, following access being permitted to offsite land. Note, VPs 2 and 3 remained in the same locations as stated above. The VP locations and viewsheds used from late April 2023 to present surveys, are shown in **Appendix A., Figure 6.3.3**.

6.3.21 The number of hours carried out at each VP exceeded the minimum annual number of 72 hours required by NatureScot (SNH, 2017), with 84 hours per VP undertaken. This included additional hours carried out in the breeding season (February to May) coinciding with the core breeding seasons for qualifying species of the adjacent Caithness and Sutherland Peatlands SPA and Ramsar.

6.3.22 It is expected that layout will be refined further prior to EIA but should there be any gaps in survey coverage or deviations from standard guidance, these will be acknowledged and addressed in the EIA Report.

6.3.23 Total VP flight activity (thus including flights not at-risk from collision with indicative proposed) across the from September 2022 to February 2024 (thus 18 month period) was limited for most target species, with the number of flights highest for osprey (*Pandion haliaetus*; 31 flights), white-tailed eagle (*Haliaeetus albicilla*; 26 flights), golden eagle (*Aquila chrysaetos*; 15 flights), greylag goose (*Anser answer*; five flights), and greenshank (*Tringa nebularia*; four flights), with low (≤3 flights) for 12 other target species.

6.3.24 Collision Risk Modelling (CRM) will be undertaken on those target species with sufficient data to provide a robust assessment. Based on the Proposed Development layout, this is likely to be osprey (*Pandion haliaetus),* golden eagle (*Aquila chrysaetos*), white-tailed eagle (Haliaeetus albicilla), greylag goose (*Anser anser),*and possibly greenshank (*Tringa nebularia*).

6.3.25 The range of breeding wetland species within the study area, in 2023, was narrow and comprised greenshank (four pairs), golden plover (*Pluvialis apricaria*; three pairs), common sandpiper (*Actitis hypoleucos)* (one pair) and snipe (*Gallinago gallinago*) (two pairs), with all of these breeding territories in open habitat and/or wetland habitat offsite, except for a greenshank pair (*Tringa nebularia*) at Loch Achrugan in the north of the Site.

6.3.26 In 2023, the Site supported a pair of breeding osprey (*Pandion haliaetus*). There was no evidence of territorial or any other breeding behaviour of any other Schedule 1 and Annex 1 raptor or owl recorded.

6.3.27 In 2023, the Site did not support any breeding divers. However, a breeding pair of red-throated diver (*Gavia stellata*) were present at a waterbody c. 1km from the Site. No further evidence of breeding divers was recorded within 1km of the Site.

6.3.28 No further ornithological surveys are proposed, given the ornithology survey scope and effort has been agreed with NatureScot (see **paragraph 6.3.1**) and is in accordance with NatureScot guidance (SNH, 2017).

Primary Mitigation

6.3.29 **Table 6.3.2** provides the primary mitigation measures that apply to key ornithological features.

Table 6.3.2 Ornithological primary mitigation measures

Environmental Factor	Embedded (Primary) Environmental Mitigation Measure and Associated Benefit
Nesting osprey	Indicative turbines are offset from the osprey nest by 750m to avoid disturbance (as per disturbance distances recorded in Goodship and Furness, 2022). Forestry will be retained within this 750m buffer around the nest site to minimise disturbance of nesting birds from the Proposed Development.
Ground-nesting birds (e.g. greenshank)	Indicative turbines are offset (at least 300m) from Loch Achrugan onsite which supports breeding greenshank, to avoid disturbance.

Additional (Secondary and Tertiary) Mitigation

6.3.30 No additional mitigation is considered likely to be required, with the adoption of embedded (primary) mitigation summarised above, and good practice measures including:

- Works close to the nest site should avoid the breeding season for osprey (April to August, inclusive), when the species is not present in Scotland.
- Pre-construction surveys would be undertaken prior to any clearance works associated with the Proposed Development. Any further species-specific working buffers required will be incorporated into a breeding bird protection plan to ensure legislative compliance is in line with current good practice guidance.
- Clearance works were possible should avoid the bird breeding season (March to August, inclusive), to negate potential direct effects on actively nesting birds.

- Given a large proportion of the Site would be clear-felled for the Proposed Development, the clear-felled area around the indicative turbines would be managed (such as vegetation kept short) to limit the potential for species like hen harrier to be attracted (nest) to the turbine area.

Description of Potential Significant Effects

6.3.31 The EIA Report will consider the potential for significant adverse effects upon important ornithological features, which could arise during the construction, operational and decommissioning phases of the Proposed Development.

6.3.32 Important ornithological features that will be considered within the EIA Report will include:

- relevant statutory designated sites, and their cited qualifying interests, such as SSSIs, SPAs and Ramsar sites and
- populations of ornithological species listed on Annex IV of the EC Habitats Directive (European Environment Agency, 2024) or Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (UK Government, 2024a), or scarce, or a priority for conservation under the UK BAP (JNCC, 2007) and/or SBL (NatureScot, 2020).

6.3.33 The assessment process will be informed on the basis of baseline ornithological information obtained through desk study and field surveys and through consultation with relevant specialist groups, as required.

Construction

6.3.34 During construction of the Proposed Development, in the absence of mitigation, potentially significant adverse effects upon important ornithological features may arise from:

- habitat loss, fragmentation or change as a result of the delivery and installation of Proposed Development infrastructure; and
- disturbance to and loss of nest sites, eggs and/or dependent young.

6.3.35 Construction activities are predicted to result in a temporary increase in noise, vibration and human presence within construction areas. This has the potential to displace birds from the vicinity of construction areas for the duration of the works (18 to 24 months).

6.3.36 The potential for direct disturbance from construction on the designated sites Caithness and Sutherland Peatlands SPA and Ramsar, Lochan Buidhe Mires SSSI and the West Halladale SSSI will be considered in the EIA Report (and information to inform HRA) given the proximity of these designated sites. Such effects on all other designated sites listed in **Table** 6.3.1 are considered unlikely by virtue of spatial separation from the designated sites, and the documented disturbance distances of the qualifying species (taken from Goodship and Furness, 2022).

6.3.37 Overall construction disturbance would be considered temporary and would occur only when construction activities are taking place. Furthermore, construction would not be expected to take place over the whole Site, but within defined working areas, phased over small areas. It is considered that potential effects on breeding birds (including those which are qualifying features of the above listed designated sites) from the Proposed Development are not likely to be significant, with the adoption of embedded mitigation, most notably by siting turbines away from identified nest sites with appropriate buffers applied (750m).

Operation

6.3.38 The operation of turbines and maintenance activities has the potential to cause disturbance and displacement of birds throughout the Proposed Development's operational lifetime. The extent of displacement is, however, highly variable between species and species-group and therefore a species-specific assessment will be undertaken on the basis of baseline studies.

6.3.39 The risk of avian mortality resulting from the collision of birds with the turbine blades (or additional wind farm infrastructure) is also acknowledged to be higher for some species due to their biometrics and flight behaviour. The likelihood of collision is also influenced by the type of habitats within the Site and the surrounding area.

6.3.40 Where flight activity data is sufficiently recorded (≥3 flights in the 'collision risk zone', or >20 birds), CRM following the Band Model and in accordance with NatureScot guidance (Band *et al*., 2007; SNH, 2000) will be undertaken to quantify the likelihood of mortality for target species. Based on the field survey results gathered to date, this is likely to be appropriate for osprey, white-tailed eagle, golden eagle, greylag goose (and possibly greenshank).

6.3.41 Golden eagle and greenshank are qualifying features of the adjacent Caithness and Sutherland Peatlands SPA and Ramsar, and (wintering) greylag goose is a qualifying feature of the Caithness Lochs SPA and Ramsar. The Site is within the documented core foraging distances of these species (from SNH, 2016). Furthermore, greenshank and golden eagle are also listed as notable species on the Lochan Buidhe Mires

SSSI and the West Halladale SSSI citations. Effects on these designated sites will accordingly be considered in the EIA Report, and within the information to inform HRA.

6.3.42 Operational phase effects on the above listed species (for which CRM is likely a requirement) are considered unlikely to be significant at the Natural Heritage Zone (NHZ) and/or SPA population level, but detailed assessment will determine the extent of these effects.

Decommissioning

6.3.43 Potential impacts associated with the decommissioning phase are likely to be less than, but of a similar nature to, those identified for the construction phase and will not be discussed exclusively within the EIA Report.

Receptors/Matters to be Scoped into Further Assessment

6.3.44 **Table 6.3.3** provides those receptors/matters to be scoped into further assessment. This list is based on survey results to date (after 18 months) and may be subject to change in the event that for example, the breeding bird survey results reveal a notable constraint (such as a nest site for a Schedule 1 species, or high activity of a species not listed in **Table 6.3.3**). In this instance, an additional ornithological receptor may be required to be scoped into further assessment.

Table 6.3.3 Ornithological receptors/matters to be scoped in

Receptor/ Matter	Phase	Justification
Caithness and Sutherland Peatlands SPA and Ramsar	Construction, Operation & Decommissioning	SPA and Ramsar adjoins the Site and therefore potential effects on ornithological qualifying features are scoped into detailed assessment, at all three phases. Effects on the SPA and Ramsar will be considered within an information to inform HRA section of the EIA Report.
Lochan Buidhe Mires SSSI	Construction, Operation & Decommissioning	SPA and Ramsar adjoins the Site and therefore potential effects on ornithological qualifying features are scoped into detailed assessment, at all three phases.
West Halladale SSSI	Construction, Operation & Decommissioning	SPA and Ramsar is adjacent to the Site and therefore potential effects on ornithological qualifying features are scoped into detailed assessment, at all three phases.
Golden eagle	Construction, Operation & Decommissioning	A qualifying feature of the Caithness and Sutherland Peatlands SPA and Ramsar, and also included on citation of the Lochan Buidhe Mires SSSI and West Halladale SSSI. Number of flights to date are 15 and, although at this stage specific 'within collision zone' flights are not known, CRM is considered likely to be required for this species for during the operation phase. Although no nest sites/confirmed breeding territories have been identified, construction works has potential to affect activity for the species and result in some habitat loss (of open habitats out to 300-500m from the Site).
Greenshank	Construction, Operation & Decommissioning	A qualifying feature of the Caithness and Sutherland Peatlands SPA and Ramsar, and also included on citation of the Lochan Buidhe Mires SSSI and West Halladale SSSI. Number of flights to date are 5 and, although at this stage specific within collision zone flights are not known, CRM is highly likely to be required for this species for during the operation phase. Four breeding territories were also recorded within the study area, including one onsite. Construction activities have potential to result in habitat loss and disturb breeding birds.
Osprey	Construction, Operation & Decommissioning	Number of flights to date are 31 and, although at this stage specific within collision zone flights are not known, CRM is highly likely to be required for this species for during the operation phase. A breeding osprey pair were present onsite in 2023 ('Year 1') and thus affects on construction on the pair (particularly if the nest site were to move to somewhere else onsite) will be scoped into the detailed assessment. Further construction works may affect bird activity and result in habitat loss.

Receptor/ Matter	Phase	Justification
White-tailed eagle	Construction, Operation & Decommissioning	Number of flights to date are 26 and, although at this stage specific within collision zone flights are not known, CRM is highly likely to be required for this species for during the operation phase. Further construction works may affect bird activity and result in habitat loss.
Caithness Lochs SPA and Ramsar	Operation	Greylag goose (wintering) is a qualifying feature of the Caithness Lochs SPA and Ramsar. The Site is just within the documented foraging distance for wintering greylag goose (up to 20km; from SNH, 2016). Five greylag goose flights were recorded (during non-breeding season) and, although at this stage specific within collision zone flights are not known, CRM may be required for this species. Effects on the SPA and Ramsar will be considered within an information to inform HRA section of the EIA Report.
Greylag goose (wintering)	Operation	Greylag goose (wintering) is a qualifying feature of the Caithness Lochs SPA and Ramsar. Five greylag goose flights recorded (during non-breeding season) and, although at this stage specific within collision zone flights are not known, CRM may be required for this species for during the operation phase.

Receptors/Matters to be Scoped Out of Further Assessment

6.3.45 **Table 6.3.4** provides those receptors/matters to be scoped out of further assessment (including from within the information to inform HRA). This is based on survey results to date (after 18 months), and therefore may be subject to change if there is any notable change in survey results. For example, a species listed in **Table 6.3.4** using the Site to a greater extent and/or for nesting in Year 2.

Table 6.3.4 Ornithological receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
North Caithness Cliffs SPA	Construction, Operation & Decommissioning	Given spatial separation between the Site and the SPA (3.3km), the qualifying species (principally seabirds), core foraging range of SPA species where documented (peregrine, 2km; SNH, 2016), lack of suitable onsite habitat for qualifying species, lack of records from field surveys (at least to date), and lack of potential pathways, effects on the SPA are scoped out of detailed assessment. NatureScot agreed during informal consultation in May 2023 that it is appropriate to scope out such effects.
Red Point Coast SSSI	Construction, Operation & Decommissioning	Given spatial separation between the Site and the SSSI (6.8km), the qualifying species (seabirds), lack of suitable onsite habitat for qualifying species, lack of records from field surveys (at least to date), and lack of potential pathways, effects on the SSSI are scoped out of detailed assessment. NatureScot agreed during informal consultation in May 2023 that it is appropriate to scope out such effects.
Skelpick Peatlands SSSI	Construction, Operation & Decommissioning	Given spatial separation between the Site and the SSSI (7.6km), core foraging range of SSSI species where documented (from SNH, 2016), lack of suitable onsite habitat for qualifying species, and lack of potential pathways, effects on the SSSI are scoped out of detailed assessment. NatureScot agreed during informal consultation in May 2023 that it is appropriate to scope out such effects.
East Halladale SSSI	Construction, Operation & Decommissioning	Given spatial separation between the Site and the SSSI (8.2km), core foraging range of SSSI species where documented (from SNH, 2016), lack of suitable onsite habitat for qualifying species, and lack of potential pathways, effects on the SSSI are scoped out of detailed assessment. NatureScot agreed during informal consultation in May 2023 that it is appropriate to scope out such effects.

North Sutherland Coastal Island SPA	Construction, Operation & Decommissioning	The SPA is 10.2km from the Site and has wintering barnacle goose as qualifying species. Core foraging range for species is 15km (SNH, 2016). The SPA citation states that the species roost and feed on Eilean nan Ron off the Kyle and Tongue and Eilean Hoan at the mouth of Loch Eriboll, as well as on other small island, as well as improved agricultural land on the mainland. Given the lack of suitable onsite (and adjacent) habitat for qualifying species, lack of records of the species from field surveys, and lack of potential pathways, effects on the SPA are scoped out of detailed assessment.
Caithness Lochs SPA and Ramsar	Construction & Decommissioning	The SPA and Ramsar is 19.5km from the Site and given construction and decommissioning effects are likely to be localised, and lack of suitable foraging habitat for qualifying species onsite, such effects on qualifying species of the SPA and Ramsar (wintering greylag goose, whooper swan and Greenland-fronted goose) are scoped out of detailed assessment.
Breeding divers	Construction, Operation & Decommissioning	No breeding divers recorded onsite, with the nearest breeding pair *c*. 1km from Site. Only one red-throated diver flight during VP flight activity surveys and no black-throated diver flights (to date). Effects on breeding divers are scoped out of detailed assessment.
Moorland passerines	Construction, Operation & Decommissioning	As per NatureScot guidance (SNH, 2017) these are scoped out of detailed assessment.
Ground-nesting wetland species & Schedule 1 and Annex 1 raptors and owls	Construction, Operation & Decommissioning	The Site (which is largely forested) is of limited value for ground-nesting wetland species with only greenshank (one breeding territory) within the Site itself. The modest breeding assemblage of wetland species was principally concentrated in the open habitat around the Site. With adoption of a breeding bird protection plan effects on ground-nesting wetland species, and Schedule 1/Annex 1 raptors and owls are scoped out of detailed assessment, with exception of osprey and greenshank (see **Table 6.3.3**).
Target Species (not listed in **Table 6.3.3**)	Operation	For those target species with only a modest number of collision zone flights (≤ three flights, or <20 birds if fewer than three flights), CRM will not be undertaken. Based on surveys to date, this will be those species not listed in **Table 6.3.3**.

Opportunities for Enhancing the Environment

6.3.46 Suitable principles for biodiversity enhancement to be delivered as part of the Proposed Development will be outlined within the EIA Report, and with consideration given to the requirements of NPF4. The appropriateness and feasibility of principles will be discussed with NatureScot and other relevant consultees over the course of the EIA, with a view to prescriptive enhancement measures being detailed at a post-consent stage. The NEMP will be presented in the EIA Report, which will seek to establish the principles of enhancement.

6.3.47 Measures to be included are peatland/heath enhancement of clear-felled areas of the Site, to benefit ornithological features, including ground-nesting wetland species like golden plover and greenshank.

Proposed Assessment Methodology

Relevant Policy and Legislation

6.3.48 The following key pieces of legislation and policy will be referred to:

- Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (hereafter the 'Habitats Directive'; EU, 2024a);
- Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (codified version of Directive 79/409/EEC as amended) (Birds Directive; EU, 2024b);

- The Habitat Regulations 1994 (as amended) and The Conservation of Habitats and Species Regulations 2010, as amended in Scotland (hereafter the 'Habitat Regulations'; UK Government, 2024b);
- The WCA 1981 (as amended; UK Government, 2024a);
- The Wildlife and Natural Environment (Scotland) Act 2011 (UK Government, 2024c);
- The Nature Conservation (Scotland) Act 2004 (UK Government, 2024d);
- NPF4 (Scottish Government, 2023);
- SPP (Scottish Government, 2014);
- UK BAP Priority Species and Habitats (JNCC, 2007);
- SBL (NatureScot, 2020);
- The Highland Nature Biodiversity Action Plan (2021-2026; Highland Environment Forum, 2021);
- The Caithness and Sutherland Local Development Plan (THC, 2018);
- Draft Biodiversity Planning Guidance (THC, 2023); and
- The Highland-wide Local Development Plan (THC, 2012).

Method of Assessment and Reporting

6.3.49 Impact assessment presented within the EIA Report for ornithological features will be undertaken in accordance with NatureScot guidance (SNH, 2018a), and based on current CIEEM guidance (2018, updated 2019).

6.3.50 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 impacts;
- assessment of the significance of any residual effects after such measures;
- identification of appropriate compensation measures to offset significant residual effects; and
- identification of opportunities for ornithological enhancement.

6.3.51 The approach to assessment will take account of existing guidance and published scientific literature in relation to birds and windfarms, together with professional judgement and experience of wind farm EIA.

6.3.52 The EIA Report will be supported by Technical Appendices and relevant figures, which will provide full details of desk studies, consultations and field surveys undertaken to inform the design and assessment of the Proposed Development.

6.3.53 Ornithological data considered sensitive (e.g. that pertaining to the breeding places of Schedule 1 of the WCA species) will be included within a confidential appendix to the EIA Report. This will not be made publicly available but will be issued to NatureScot and the ECU.

6.3.54 It will be ensured that sufficient information is presented within the EIA Report to allow an objective and robust assessment of potentially significant adverse impacts upon important ornithological features to take place.

Determining Importance

6.3.55 The EIA Report will only assess in detail impacts upon important ornithological features which are likely to be significantly affected by the Proposed Development. A detailed assessment of features that are sufficiently widespread, unthreatened and resilient to impacts of the Proposed Development will not be undertaken and justification for "*scoping out*" will be provided.

6.3.56 Relevant European, national and local legislation policy and guidance will be referred to in order to determine the importance (or 'sensitivity') of ornithological features. In addition, importance will also be determined using professional judgement, specialist consultation advice and the results of baseline surveys and the importance of features within the context of the geographical area.

6.3.57 Important ornithological features will broadly include:

- species listed on Annex 1 of the Birds Directive;
- species listed on Schedule 1 of the Wildlife and Countryside Act; and

- 'Priority bird species for assessment when considering the development of onshore wind farms in Scotland' as listed on Annex 1 of NatureScot guidance (SNH, 2018a).

6.3.58 Importance will not necessarily relate solely to the level of legal protection that a feature receives, and ornithological features may be important for a variety of reasons, such as their connectivity to a designated site and the rarity of species or the geographical location of species relative to their known range.

6.3.59 The importance of ornithological features will be defined in a geographical context from "*Local*" to "*International*".

Identification and Characterisation of Impacts

6.3.60 The identification and characterisation of impacts on important ornithological features will be undertaken in accordance with the CIEEM guidelines (2018) with reference made to magnitude (e.g. area or number of individuals to be impacted), extent, duration and reversibility, as appropriate.

6.3.61 Impacts will be considered during the construction, operational and decommissioning phases and will be assessed on the basis that a clearly defined range of avoidance and standard good practice measures are implemented.

Significant Effects

6.3.62 For the purposes of assessment, the significance of effects will primarily be expressed within the EIA Report with reference to the regional, national or international scale (as relevant) in line with NatureScot's interests of bird species status at wider spatial levels. The significance of effects at a local scale may also be assessed where sufficient information allows a meaningful assessment. The significance criteria to be applied in the Ornithology Chapter of the EIA Report is described in detail in **Appendix C.**.

6.3.63 CIEEM guidelines (2018) do not recommend the sole use of a matrix table as commonly set out in EIA Report chapters to determine 'significant' and 'not significant' effects. For the purposes of this assessment presented herein, sets out adapted CIEEM terminology and equivalent in the context of the EIA Regulations 2017.

6.3.64 **'Major'** and **'Moderate'** effects are considered significant in the context of the EIA Regulations.

6.3.65 The assessment of effects will be undertaken taking into consideration collated field survey information and information available from the desk study. Bird flight activity data will be collated and analysed to assess the potential risk to individual species of conservation concern from collision mortality, following the method described by Band *et al.* (2007).

6.3.66 In order to assess significance, population information will be collated on relevant regional and national scales, where available. A precautionary approach on the basis of uncertainty, will be adopted throughout the assessment process.

Cumulative Impacts

6.3.67 Cumulative impacts will be assessed with reference to NatureScot guidance (SNH, 2012 and 2018b) for all ornithological features subject to a detailed assessment. The potential for significant cumulative effects due to habitat loss, disturbance/displacement and collision risk mortality will be assessed. The assessment will be based on the consideration of residual effects (i.e., assuming that proposed mitigation and compensation measures (where relevant) are implemented).

6.3.68 The assessment will encompass the effects of the Proposed Development in-combination with existing developments, either built or under construction; approved developments; awaiting implementation; and proposals awaiting determination within the planning process with design information in the public domain.

6.3.69 The inclusion of additional non-wind farm proposals is not proposed unless specifically requested by NatureScot.

6.3.70 With regard to the spatial extent of the cumulative assessment, NatureScot guidance (SNH, 2012 and 2018b) stipulates that cumulative effects should typically be assessed at the relevant Regional NHZ scale, unless there is a reasonable alternative. The Proposed Development is located within the 'Peatlands of Caithness & Sutherland' NHZ 5 (Wilson *et al.,* 2015). It is therefore proposed that where the availability of relevant information is sufficient enough to allow for a meaningful cumulative assessment at the NHZ 5 scale to be undertaken, this will be done.

6.3.71 NatureScot guidance (SNH, 2012) does however recognise that access to relevant data for other developments may be limited and therefore a meaningful assessment of cumulative effects of such developments is not always possible. It is our understanding that NatureScot are in the process of collating a list of other wind farm developments within each NHZ, along with documented impacts on key species (particularly CRM estimates) as a result of these developments. If available, and shared by NatureScot, we propose using the information from the NHZ 5 to assess impacts on key species in-combination with

other wind farm developments. It is considered that key species may include golden eagle, white-tailed eagle, osprey, and greylag goose (for which CRM may be required). If not available, however, we propose an alternative approach, whereby the core foraging range for each species (taken from SNH, 2016) requiring consideration will be used to determine the spatial extent of the cumulative assessment, adopting a precautionary approach as necessary.

Avoidance and Mitigation

6.3.72 The adoption of embedded mitigation measures to avoid or minimise adverse impacts upon ornithological features will be part of the iterative design process for the Proposed Development.

6.3.73 Full details of the scheme design evolution and embedded mitigation measures in relation to ornithology will be detailed within the EIA Report. Measures to be included are summarised in **Table 6.3.3**. In accordance with the principles of proportionate EIA, these measures will be considered at the outset of the assessment process, in determining the likely 'importance' of ornithological features in the context of the Proposed Development. This will include the specification of any species-specific working buffers as a necessary requirement for the production of Breeding Bird Protection Plan to ensure legislative compliance in line with current good practice guidance.

Residual Effects

6.3.74 An assessment to determine the significance of residual ornithological effects (those remaining after mitigation measures) will be undertaken.

Enhancements

6.3.75 Where significant residual effects remain, enhancements which include replacement habitat, or habitat improvements will be provided to offset potentially significant residual effects.

Difficulties and Uncertainties

6.3.76 To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- Between September 2022 to April 2023 the VP locations did not provide full coverage for the western extreme of the Site due to access restrictions to the west of the Site. Following access being granted, VP1 was relocated in late April 2023 (VP1a) to provide coverage of the western extreme of the Site. CRM will be split between the breeding season and non-breeding season in Year 1 to negate any issues with differently located VP1/1a. By August 2024, a total of approximately 18 month of surveys will have been undertaken from VPs with coverage covering the entire Site (plus as much of 500m from the Site as possible), with a further six months of survey from VPs covering most of the Site (with the exception of the western extreme of the Site). This change in VP1/1a location is not considered to represent a limitation and the relocation was notified in consultations with NatureScot in May 2023.
- The ornithological features scoped in and out are based on baseline data gathered to date, with field surveys for example continuing until August 2024 and desk study information pending. These may be subject to some change if, for example, further important ornithological features are subsequently identified, or the layout of the Proposed Development is altered so that previously scoped in ornithological species are no longer recorded in sufficient number within the collision zone to warrant CRM.
- The target species likely to be considered for CRM for assessing operation phase effects are preliminary given the Proposed Development layout is not yet frozen. However, given the typically high number of flights, the target species are considered likely to require CRM and will be considered in detailed assessment. The final frozen layout of the Proposed Development will be used to determine which target species are subject to CRM.
- The Site is largely commercial forest. Wind-blown trees were regularly observed during field surveys. Surveys of the Site were typically undertaken from open habitats adjacent to the Site and traversing clearings and rides within the Site rather than any attempt to traverse the dense plantation onsite itself. This is considered an appropriate survey methodology and would have identified the main important ornithological features, whilst ensuring surveys were completed adhering to health and safety considerations.
- It will not be possible to conclusively establish whether birds recorded during field surveys of species which are qualifying features of nearby designated sites (like wintering greylag goose of the Caithness Lochs SPA and Ramsar) are part of the designated site's population. However, given the close proximity of the Caithness and Sutherland Peatlands SPA and Ramsar for the purpose of the assessment it will be assumed that birds recorded which are SPA qualifying species are likely to be part of the site's population. Furthermore, the assumption will be made for the assessment that greylag geese recorded between September and April 2023 may

represent wintering birds of the Caithness Lochs SPA and Ramsar population. This precautionary approach is considered to be appropriate for detailed assessment.

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the United Kingdom, Channel Islands and Isle of Man and second IUCN Red list assessment of extinction risk for Great Britain. British Birds 114, 723-747.

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UK Government (2024b), The Conservation (Natural Habitats, &c.) Regulations 1994.

UK Government (2024c), Wildlife and Natural Environment (Scotland) Act 2011.

UK Government (2024d), Nature Conservation (Scotland) Act 2004.

Wilson, M. W., Austin, G. E., Gillings, S. and Wernham, C. V (2015), Natural Heritage Zone Bird Population Estimates. SWBSG Commissioned report number SWBSG_1504pp 72.

Scoping Questions

1. *Do you agree with the proposed list of consultees?*
2. *Do you agree with the study areas adopted for each ornithology survey?*
3. *Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?*
4. *Do you agree that the ornithology surveys (being) undertaken to inform the EIA baseline characterisation are appropriate?*
5. *Do you agree with approach to the cumulative assessment? Are there any specific non-wind energy developments that you consider should be included within the cumulative impact assessment? If so, please advise of planning references for these.*
6. *Are there any other embedded (primary) mitigation over the ones stated in this chapter which are recommended?*
7. *Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?*
8. *Can NatureScot provide an up-to-date list of those wind farm developments within the NHZ 5 ('Peatlands of Caithness and Sutherland) which should be considered within the cumulative assessment?*
9. *Can NatureScot provide a list of accepted cumulative collision risks for golden eagle, white-tailed eagle, osprey, greenshank, greylag goose and for all other ornithological species listed in Annex 1 of their guidance (SNH, 2018a) for those wind farm developments within NHZ 5?*
10. *Does NatureScot have any up to date information on the populations of qualifying species of the designated sites scoped into assessment, particularly Caithness and Sutherland Peatlands SPA and Ramsar and Caithness Lochs SPA and Ramsar?*
11. *Do you require any shapefiles to assist you in your review of the Proposed Development?*

6.4 Hydrology, Geology and Peat

Consultation

6.4.1 No formal consultation has been undertaken with regards to land, soil and water at this stage. However, consultations will be carried out with the following stakeholders and organisations:

- SEPA in relation to hydrology and peat;
- Nature Scot in relation to peatland habitats;
- The forest agent/landowner in relation to felling plans and compatibility of any peatland restoration measures;
- The Highland Council for private water supply records; and
- Scottish Water for public water supply infrastructure.

Study Area

6.4.2 The area assessed will include the Site boundary plus a buffer zone of 2km around the Site boundary. For hydrological receptors, impacts downstream up to 5km from the Site boundary will also be considered, as impacts such as pollution events can be transmitted downstream for greater distances.

Data Sources to Inform the EIA Baseline Characterisation

6.4.3 The following information should be included:

- Topographical information at the Site, as provided by Ordnance Survey contour mapping.
- 1:25,000 and 1:50,000 scale Ordnance Survey mapping to identify watercourses within the Site.
- Solid and superficial geology information provided by British Geological Survey (BGS) mapping.
- SEPA online flood maps.
- Water quality information at and near the Site set out in SEPA River Basin Management Plans.
- Hydrogeology information given by BGS data accessed via Department for Environment, Food and Rural Affairs Magic Maps.
- Designated nature conservation sites identified using information from Nature Scot's mapping database.
- Soil information provided by the National Soil Map of Scotland.
- The potential for peat being present across the Site has been identified using the SNH Carbon and Peatland Map (2016), BGS mapping and aerial imagery. Peat depth data will be assessed using a Phase 1 Peat Survey.
- Consultation with SEPA, The Highland Council, within River Strathy catchment will be undertaken to obtain relevant flood, water supply and further peat information, including any licenced abstractions and with neighbouring residents to determine location of private water supplies.
- GWDTEs will be identified based on habitat mapping and ecological surveys and reviewed by the hydrologists in the field.

Surveys to Inform the EIA Baseline Characterisation

6.4.4 Peat probing will be undertaken in a 100m grid to obtain an initial understanding of the peat depth and distribution on Site. Further high-density peat depth surveys will be undertaken within the Site in accordance with the relevant guidance (Guidance on Developments on Peatland: Peatland Survey (2017) across the footprint of proposed infrastructure and a micro-siting allowance to inform the proposed design. In relation to peat, an aim of the design will be to avoid all peat where possible, with a particular emphasis on the peat > 1m, and unmodified peat.

6.4.5 A walkover hydrological survey of the Site will be carried out to identify the existing baseline conditions, including identifying and documenting watercourse crossings (proposed and existing), identification of other water features such as wetlands and springs, undertaking an overview assessment of areas identified as floodplain within the SEPA Flood Maps, and providing a general overview of landscape and land cover of importance to hydrology and soils including geomorphology. This data along with mapped water features from other information sources will be used to locate the infrastructure of the Proposed Development outside of flood risk areas and 50m buffers of the identified water features. Any watercourse crossings will be designed to the 1:200 year flow plus climate change allowance.

6.4.6 An assessment of GWDTE will be undertaken based on the NVC survey provided by the ecologists. Any that are considered to be groundwater dependent will be assessed in the field and used to adjust the infrastructure layout so that they are outside of the required 100m or 250m buffer zones.

6.4.7 A geomorphological walkover will be completed following the completion of a site geomorphological map. This will be used, along with other parameters to assess the Peat Landslide Hazard Risk. Areas of peat slide risk will be used as a constraint to the layout design.

6.4.8 Private water supply visits will also be undertaken, if required, following consultation with the private water supply owners to verify the source location, the conveyance infrastructure, use, treatment and any other pertinent details. Catchment areas or buffer zones will be mapped around the source locations to assist with layout design with infrastructure located outside of 250m for groundwater sources and outside of the catchment areas of surface water sources wherever possible.

Baseline Conditions

Geology, hydrogeology and soils

6.4.9 The bedrock underlying the entire Site is Quartzose banded gneisses of the Strathy Complex.

6.4.10 One east-west trending fault slightly encroaches into the south west of the Site by about 200m. No other faults are present on the Site, however faults do run roughly parallel to all site boundaries.

6.4.11 The BGS Hydrogeology (1:625,000 scale) map shows the bedrock within the Site to be a low productivity aquifer, with 'small amounts of groundwater in near surface weathered zone and fractures'.

6.4.12 BGS superficial mapping indicates that peat is present across the majority of the site with two small areas of alluvium present in the west of the site and there are north south trending bands of hummocky glacial deposits, alluvium and glaciofluvial deposits along the eastern Site boundary. The alluvium is associated with the River Strathy.

6.4.13 The SNH Carbon and Peatlands 2016 mapping shows several different classes of peatland across the Site. Class 5 peat (peat soil with no peatland vegetation) is shown on the majority of the Site and Class 1 (nationally important carbon-rich soils, deep peat and priority peatland habitats) is restricted to the north and north west of the Site. There are mineral soils along the eastern Site boundary, associated with the River Strathy.

6.4.14 Soil mapping shows that the Site is underlain mostly by peaty gleys, with peat in the north of the Site and peaty podzols along the eastern Site boundary.

Surface hydrology, site drainage and flooding

6.4.15 The majority of the Site drains east via Dubh-chlais, Allt Dail Teine and several other un-named tributaries to the River Strathy, which runs along the eastern Site boundary. The River Strathy discharges at Strathy Bay, 2.3km to the north of the Site. The west of the Site drains to Armadale Burn via Allt Ruadh and another un-named tributary. Armadale Burn discharges to Armadale Bay 2.2km north west of the Site.

6.4.16 The SEPA Flood Maps indicate localised flooding of watercourses and waterbodies within the Site. There are also areas of medium and high likelihood river flooding along the River Strathy, along the eastern Site boundary and downstream of the Site.

Land use and designated sites

6.4.17 The Site lies on the eastwards facing slopes of River Strathy and is forested. The elevation ranges from about 90mAOD in the north east to 30mAOD on the north west Site boundary. The land generally slopes moderately from west to east with several minor summits, lochs and lochans.

6.4.18 The Caithness and Sutherland Peatlands is a SPA, SAC and Ramsar site. This area is located along the western Site boundary and 1km to the south east of the Site. The SPA is designated for 12 species of breeding birds, including golden eagle. The SAC is designated for several freshwater and upland habitats, vascular plants and otter. The Ramsar site is designated for blanket bog and breeding birds.

6.4.19 The Lochan Buidhe Mires Site of SSSI is adjacent to the western site boundary and is designated for blanket bog and breeding birds.

6.4.20 The Flow Country candidate World Heritage Area lies adjacent to the western boundary and the northern boundary of the Site, as well as 500m to the east of the Site. It is designated due to the presence of blanket bog and biodiversity in the area.

6.4.21 The West Halladale SSSI (1km south east) is designated for blanket bog and breeding birds.

6.4.22 Armadale Gorge SSSI (1km west of the Site) is designated for upland habitat and for woodland.

6.4.23 Strathy Coast SSSI (2.7km north west and 3.1km north east) is designated for earth sciences, machair, maritime cliff and for saltmarsh.

6.4.24 Strathy bogs SSSI (4.0km south). and Strathy Bogs is designated for blanket bog.

Water quality and water use

6.4.25 The River Strathy, which drains the eastern part of the Site, is currently of Good Overall Status (SEPA, last updated 2022) in accordance with The Scotland River Basin District (Standards) Directions 2014.

6.4.26 The Armadale Burn, which drains the western part of the Site, is currently of High Overall Status, (SEPA, last updated 2022) in accordance with The Scotland River Basin District (Standards) Directions 2014.

6.4.27 There are no known water supply boreholes or Surface Water drinking water protected areas in the Site.

6.4.28 The Bowside Burn which is located 200m to the east of the Site is listed on the Scottish Government's 2014 Scotland River Basin District drinking water protected areas map as a surface water drinking water protected areas. The burn provides water supply to three properties: The Bothy, Bowside Cottage and Bowside Lodge. None of the Site is situated within the catchment area of Bowside Burn.

Additional (Secondary and Tertiary) Mitigation

6.4.29 There are industry-established mitigation measures that will be employed in the design of the Proposed Development and the methodologies used for the construction and operation to minimise, or mitigate for, impacts on peat and the geological environment. These will be assumed as standard when undertaking the assessment and any required mitigation measures would be over and above these standards.

Construction

- Surface water and sediment management.
- Peat management, restoration and peat handling
- Peat slide risk factors and management including the installation of catch-fences as a precaution against runout into sensitive watercourses and the preparation of a geotechnical risk register.
- Floating tracks and other construction methodologies to avoid the excavation of peat.

Operation

- Ongoing monitoring of water quality, drainage infrastructure and track status.
- Sediment management during maintenance.
- Pollution prevention.
- Peat restoration of excavated peat in accordance with the Peat Management Plan.

6.4.30 The peat restoration strategies will be in accordance with guidance including: 'Good practice during windfarm construction' (Scottish Renewables, SNH, SEPA & Forestry Commission Scotland, 4th Edition 2019); 'Good practice guidance on peat excavation and reuse' (Scottish Renewables and SEPA, 2012) and 'Regulatory Position Statement – Developments on peat' (SEPA, 2010) with any additional requirements specified by SEPA addressed as part of the assessment. Peat restoration will focus on areas where peat has been removed, eroded or degraded for restoration.

Description of Potential Significant Effects

6.4.31 Potential effects on hydrology, hydrogeology and soils will be assessed as part of the EIA process. This will include the identification of both generic effects of construction (e.g., sediment release, pollution, fuel spills, etc.), disturbance of soils and peat, and effects on specific locations such as sensitive habitats (i.e., GWDTEs, private water supplies, water features, etc.) which are sensitive to pollution risk and/or disturbance from required engineering works.

6.4.32 Potentially significant effects are considered more likely to occur during the construction phase. The Applicant is committed to implementing good practice construction methods to complement the high standards expected by SEPA.

Receptors/Matters to be Scoped into Further Assessment

Table 6.4.1 Hydrology, Geology and Peat receptors/matters being scoped in

Receptor/ Matter	Phase	Justification
Pollution of surface water through sediment or contaminants	Construction and decommissioning	Where the site is hydrologically connected, the construction and decommissioning of the Proposed Development has the potential to impact on surface watercourses where infrastructure is unable to be located outside of the 50m buffer. This would be ideally limited to watercourse crossings and the approach tracks, and upgraded access tracks.
Peat, peat soil and peatland	Construction, operation and decommissioning	Peat is present on the site and is likely to be impacted by the Proposed Development. Changes due to direct removal, or from erosion due to the infrastructure changing the hydrological environment; dewatering of peat due to excavations or pumping; removal of peat; and an increase in the peat slide risk. Peat is also the qualifying interest of the Caithness and Sutherland Peatlands SAC and the Flow Country candidate World Heritage Area.
Groundwater terrestrial ecosystems	Construction, operation and decommissioning	Where the potential for hydrogeological connectivity is identified, the construction of the Proposed Development has the potential to impact GWDTEs through the alteration of groundwater flow or a change in groundwater quality.

Receptors/Matters to be Scoped Out of Further Assessment

Table 6.4.2 Hydrology, Geology and Peat receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
Groundwater Flood risk	Construction and Operation	The underlying bedrock is a low permeability aquifer and does not support abstractions.
Private Water Supplies	Construction, operation and decommissioning	The private water supplies located to the east of the Site are not hydrologically connected to the Site as they are located within the Bowside Burn catchment, east of the River Strathy. Therefore they can be scoped out of the assessment.
All other surface water bodies	Construction and Operation	Assuming that best practice is followed, including the siting of all infrastructure over 50m from all 1:25,000 Ordnance Survey mapped water features, and the provision, and adherence to, a detailed and approved Construction Environmental Management Plan (CEMP), it is considered that effects on all other surface waterbodies aside from the River Strathy (including Strathy Coast SSSI can be scoped out due to its distance from the Site).
Flood Risk	Construction and Operation	As all infrastructure, with the exception of any watercourse crossing will be located outside of any flood zones and drainage will be managed according to Sustainable drainage systems to avoid any increase in flooding due to infrastructure. Any watercourse crossing will be constructed to 1:200 year flow plus climate change.

Opportunities for Enhancing the Environment

6.4.33 An enhanced peat management plan will be completed incorporating forest-to-bog restoration through ground smoothing or bunding (using excavated peat). Much of this would be dependent on peat depth and habitat condition and would involve collaboration with the ecology and ornithology teams and the forestry consultant.

Proposed Assessment Methodology

6.4.34 The findings of the baseline assessment (refer to **paragraph 6.4.3)** and survey work (refer to **paragraph 6.4.4 - 6.4.8**) will contribute to environmental constraints mapping and will provide input and feedback into design iterations and subsequent environmental assessment.

6.4.35 An assessment of the significance of the effects will be undertaken through a combination of the magnitude of the effect, the sensitivity of the receptor and the likelihood of the effect occurring. Refer to **Appendix C.**

6.4.36 Findings from the geomorphological assessment of peat will be compared with those from ecological surveys to enable a holistic assessment of peatland condition across the Site and avoidance of the highest quality habitats.

Difficulties and Uncertainties

6.4.37 No difficulties or uncertainties regarding the land, soils and water assessment have been identified at this stage.

References

Highland Council (2012), Highland-wide Local Development Plan.

Highland Council (2016), Onshore Wind Energy: Supplementary Guidance.

Scottish Government (2000), The Contaminated Land (Scotland) Regulations 2000 (as amended).

Scottish Government (2001), PAN 61: Sustainable urban drainage systems.

Scottish Government (2003), The Water Environment and Water Services (Scotland) Act 2003.

Scottish Government (2006), PAN 51: planning, environmental protection and regulation.

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Scottish Government (2011), The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended).

Scottish Government (2012), The Pollution Prevention and Control (Scotland) Regulations 2012.

Scottish Government (2023), NPF4.

Scottish Government, Scottish Natural Heritage (SNH), and Scottish Environment Protection Agency (SEPA) (2017), Peatland survey: Guidance.

Scottish Renewables, NatureScot, SEPA & Forestry Commission Scotland (FCS)'s (2019), Good practice during Wind Farm construction Guidance.

SEPA (2014), Position Statement (WAT-PS-10-01): Assigning Groundwater Assessment Criteria for Pollutant Inputs.

SEPA (2017), Land Use Planning System (LUPS) Guidance Notes 4 & 31.

SEPA (2018), GPP 5: Works and maintenance in or near water.

SEPA (2021), GPP 1: Understanding your environmental responsibilities – good environmental practice.

SEPA (2021), GPP 21: Pollution incident response planning.

SEPA (2023), GPP 6: Working at construction and demolition sites.

UK Government (1990), The Environmental Protection Act 1990 (as amended).

Scoping Questions

1. *Do you agree with the proposed list of consultees?*
2. *Do you agree with the proposed study areas?*
3. *Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?*
4. *Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?*
5. *Are any receptors/assets/resources not identified that you would like to see included in the EIA Report?*
6. *Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?*
7. *Do you agree that excavated peat can be used in the restoration of forest to bog areas?*
8. *Do you require any shapefiles to assist you in your assessment of the Proposed Development?*

6.5 Cultural Heritage

6.5.1 The cultural heritage chapter of the EIA Report will be prepared by Headland Archaeology Ltd. Headland is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA) and abides by its standards and codes of conduct. As part of the RSK Group, Headland Archaeology is formally recognised as an Historic Environment Service Provider with the Institute of Historic Building Conservation (IHBC), an externally audited status which confirms our work is carried out in accordance with the highest standards of the profession.

6.5.2 The cultural heritage chapter of the EIA Report will characterise the historic environment within the Site Boundary and in the wider area. Consultation, desk-based research including field visits, a ZTV and setting visits will be used to define proportionate study areas for the assessment. A baseline of designated and non-designated heritage assets will be assembled to assess the potential direct, indirect, and setting effects of the Proposed Development. Where likely significant effects are identified, mitigation measures will be identified.

6.5.3 The cultural heritage of an area comprises archaeological sites, historic buildings, gardens and designed landscapes, historic battlefields and other sites, features or places in the landscape that have the capacity to provide information about past human activity, or which have cultural relevance due to associations with folklore or historic events. Sites of cultural heritage interest may derive some, or all, of that interest from their setting within the wider landscape.

6.5.4 This chapter of the EIA Scoping Report is intended to identify likely significant effects of the Proposed Development upon the physical fabric and settings of heritage assets within the Site, and likely significant effects on the cultural significance of assets within the wider landscape through development within their setting, which would need detailed consideration through EIA.

6.5.5 Direct and indirect physical effects involve alteration or destruction of the fabric of heritage assets and could result from the construction of the Proposed Development.

6.5.6 Effects on the setting of heritage assets can arise due to the relative scale of turbines, their potential to detract from understanding of key views from/towards an asset, or a change resulting in an adverse experience of a heritage asset.

6.5.7 As part of this Scoping Report, a Stage 1 Setting Assessment has been carried out. The purpose of the assessment is to propose and agree with consultees the heritage assets that may be affected by the Proposed Development and will require further detailed assessment in the EIA Report Chapter. The Stage 1 Setting Assessment considers all heritage assets within defined study areas to identify whether it is likely that their cultural significance could be affected through development within their setting. The iterative design process will aim to minimise negative impact upon the heritage assets that it is agreed may be affected to avoid significance adverse effects in EIA. The scoping layout is considered a ‘worst case’, and the final layout will be the subject of the cultural heritage chapter’s impact assessment.

6.5.8 To assess the significance of the effect of the Proposed Development upon cultural heritage, the importance of each heritage asset is assessed against the potential magnitude of change upon its cultural significance using a reasoned matrix-style approach outlined in **Appendix C**. This use of the word cultural ‘significance’ in this context refers to the range of cultural values or interest attached to an asset.

6.5.9 Cultural significance is a quality that applies to all heritage assets and, as defined by Historic Environment Scotland (HES) in Appendix 1, page 175, of Scottish Natural Heritage (now NatureScot) and HES (2018), relates to the ways in which a heritage asset is valued both by specialists and the general public. It may derive from factors including the asset’s fabric, setting, context and associations. Following National Planning Framework (NPF) 4 ’Policy Principles’, the analysis of a heritage asset’s cultural significance aims to identify its ‘special characteristics’ which should be protected, conserved or enhanced. Such characteristics may include elements of the asset’s setting, which is defined in Section 1 of HES guidance (2016, updated 2020) as “*the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated*”.

6.5.10 Historic landscape is not treated as a heritage asset for the purposes of this assessment except where a defined area of landscape has been designated for its cultural heritage interest. It is recognised that all landscapes have a historic dimension, and this will be considered as part of the assessment of Landscape Character (covered in the LVIA chapter of the EIA Report). Furthermore, although any effects on the cultural significance and importance of heritage assets due to change in their setting are likely to be visual in nature, the assessment of these visual effects is distinct from the assessment of visual change in the LVIA. The assessment of effects on setting may be informed by visualisations prepared as part of the LVIA but the conclusions reached regarding visual change in the setting of a heritage asset are distinct.

Legislation, Policy, and Guidance

6.5.11 It is proposed that the cultural heritage EIA will be carried out with reference to the following legislation, policy and guidance:

Legislation

- The Ancient Monuments and Archaeological Areas Act 1979;
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997;and
- The Historic Environment Scotland Act 2014.

Policy

- NPF4 Part 1 A National Spatial Strategy for Scotland 2045 and NPF4 Part 2 National Planning Policy (The Scottish Government, February 2023) Policy 7: Historic assets and places;
- Historic Environment Policy Scotland (HEPS) (HES, 2019); and
- Highland-wide Local Development Plan (HwLDP, 2012): Policy 57: Natural, Built and Cultural Heritage.

Guidance

- Historic Environment Scotland Circular (HES, 2019).
- PAN 2/2011: Planning and Archaeology (Scottish Government).
- IEMA/CIfA/IHBC Principles of Cultural Heritage Impact Assessment in the UK (2021).
- Designation Policy and Selection Guidance , (HES 2019).
- Our Past, Our Future: The Strategy for Scotland's Historic Environment (HES 2023).
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists (CIfA 2020).
- Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (CIfA 2020).
- Managing Change in the Historic Environment: Setting (HES 2016, updated 2020), and any other relevant Managing Change in the Historic Environment guidance.
- Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment Process in Scotland (NatureScot and HES, 2018).
- Highland Council Standards for Archaeological Work (2012).

Consultation

6.5.12 It is proposed that following stakeholders will be consulted in relation to the assessment:

- Historic Environment Scotland (HES); and
- THC Historic Environment Team , statutory historic environment advisors to The Highland Council.

Study Areas

6.5.13 Overlapping study areas have been used for the identification of heritage assets that may be affected by the Proposed Development:

- the Site Boundary(**Appendix A, Figure 6.5.1**), to identify potential direct and indirect (physical) impacts; and
- the Outer Study Area (OSA) (**Appendix A, Figure 6.5.2**) based on a bare earth ZTV to identify assets beyond the Site that may be affected through development within their setting.

6.5.14 Within the OSA, assets are included in the assessment based on the level of importance assigned to them to ensure that all likely significant effects are recognised. The overlapping OSA reflects that the more important the asset, the more likely significant effects could be generated over further distances, as follows:

- Up to 20km from proposed turbines: World Heritage Sites, Category A Listed Buildings, Inventory Gardens and Designed Landscapes, Scheduled Monuments, and Inventory Historic Battlefields;
- Up to 10km Conservation Areas;

- Up to 5km from proposed turbines: Category B Listed Buildings; and
- Up to 2km from proposed turbines: Category C Listed Buildings and non-designated heritage assets.

6.5.15 In addition, beyond the OSA as defined above, consideration has been given to whether any other designated asset which is within the ZTV and considered exceptionally important and/or sensitive to visual change within its setting, and/or where long-distance views from or towards the asset are thought to contribute to cultural significance. In the case of this assessment, there are none.

6.5.16 The baseline has been screened (and will be agreed with the relevant consultees and stakeholders) to identify any assets of particular sensitivity or importance. Criteria for the identification of assets of particular sensitivity or importance is based on the approach set out in HES (2016, updated 2020) which lists a range of factors which might form part of the setting of a heritage asset as follows:

- "Current landscape or townscape context;
- Views to, from and across or beyond the historic asset or place;
- Key vistas: for instance, a 'frame' of trees, buildings or natural features that give the historic asset or place a context, whether intentional or not);
- The prominence of the historic asset or place in views throughout the surrounding area, bearing in mind that sites need not be visually prominent to have a setting;
- Aesthetic qualities;
- Character of the surrounding landscape;
- General and specific views including foregrounds and backdrops;
- Views from within an asset outwards over key elements in the surrounding landscape, such as the view from the principal room of a house, or from a roof terrace;
- Relationships with other features, both built and natural;
- Non-visual factors such as historical, artistic, literary, place name, or scenic associations, intellectual relationships (e.g., to a theory, plan, or design), or sensory factors; and
- A 'sense of place': the overall experience of an asset which may combine some of the above factors."

Data Sources to Inform the EIA Baseline Characterisation

Desk Based Assessment

6.5.17 A Desk-Based Assessment will be conducted to establish the baseline condition of the Site. The principal source of information will be THC Historic Environment Record (HER), supplemented by relevant published documentary and cartographic material as appropriate, including sources of aerial photography. Various other sources will also be consulted for the collation of data, including but not limited to:

- Designation data downloaded from HES;
- HER data, digital extract from THC Historic Environment Team;
- The National Record of the Historic Environment (NRHE), including the Canmore database and associated photographs, prints/drawings and manuscripts held by HES;
- Conservation Area Character Appraisals;
- Historic Landscape Assessment data;
- The National Collection of Aerial Photography;
- Geological data available online from the British Geological Survey;
- Historic maps held by the National Library of Scotland;
- Unpublished maps and plans held by the National Records of Scotland;
- Relevant internet resources, including Google Maps, Google Earth, Bing satellite imagery and PastMap;
- Readily available published sources and unpublished archaeological reports.
- ZTV / cumulative ZTV; and
- Findings of other environmental topics (LVIA, peat depth, ground conditions, noise and vibration).

6.5.18 No LIDAR data is available from the Scottish Remote Sensing Portal for this Site.

Stage 1 Setting Assessment

6.5.19 A 'Stage 1' setting assessment of cultural heritage assets has been completed as part of the scoping process. This approach identifies likely significant effects on the settings of heritage assets from an initial desk-based appraisal of data from HES, the HER and consideration of current maps and aerial images available via online sources. The methodology adopted for the identification and assessment of potential effects on setting follows the approach set out in HES (2016, updated 2020) and Scottish Natural Heritage (now NatureScot) and HES (April 2018) and Appendix 1 of Scottish Natural Heritage (now NatureScot) and HES (2018).

6.5.20 The guidance sets out three stages in assessing the impact of development on the setting a heritage asset or place as follows:

"Stage 1: Identify the historic assets that might be affected by a development;

Stage 2: Define and analyse the setting by establishing how the surroundings contribute to the ways in which the historic asset or place is understood, appreciated and experienced; and

Stage 3: Evaluate the likely significant effect of the proposed changes on the setting, and the extent to which any negative impacts can be mitigated."

6.5.21 The Stage 1 Setting Assessment methodology has considered each heritage asset in the OSA in turn to identify heritage assets in the ZTV that have a wider landscape setting that contributes to their cultural significance and whether it is likely that cultural significance would be negatively impacted by the Proposed Development. The Stage 1 Setting Assessment is presented in full in a gazetteer (**Appendix A, Figure 6.5.1**) and supported by wireline visualisations (**Appendix A, Figure 6.5.2**). A digital version of the ZTV used for the Stage 1 Setting Assessment is provided in **Appendix A, Figure 6.5.3**.

6.5.22 The assessment of the scoping layout at this stage is considered a 'worst case' for the identification of heritage assets that may be affected through development within their setting. As the iterative design process will aim to minimise adverse impacts upon the heritage assets, the ultimate effects of the frozen design will fall within the 'Rochdale envelope' parameters considered during the scoping process.

Surveys to Inform the EIA Baseline Characterisation

Field Visit

6.5.23 A field visit will be undertaken to record site characteristics, any visible archaeology and geographical / geological features which may have a bearing on previous land use and archaeological survival, as well as those which may constrain subsequent archaeological investigation. Known heritage assets identified through desk-based assessment will be visited to record their location, extent and significance. Proposed infrastructure locations where a potential direct impact could occur will be inspected for hitherto unknown heritage assets. The location and extent of all assets will be checked or recorded with a handheld (i.e., navigation grade) geographical positioning system.

6.5.24 Heritage assets in the wider study area (to be determined following agreement with statutory consultees) will be visited in order to assess likely significant effects upon their settings.

Baseline Conditions

6.5.25 The baseline information used for this EIA Scoping Report has been compiled using existing data on the historic environment:

- HES designations data available as Geographical Information Systems (GIS) datasets downloaded in February 2024;
- NRHE data comprising the Canmore database, downloaded in February 2024;
- Highland Council HER data provided digitally in February 2024.

Site Boundary

6.5.26 There are no designated heritage assets within the Site Boundary.

6.5.27 There are three known non-designated heritage assets (NDAs) recorded within the Site Boundary (**Table 6.5.1**).

Table 6.5.1: Known NDAs within the Site Boundary

HER Ref	Name	Description	Easting	Northing
MHG18609	Possible Sheiling Hut, Allt Na Dubh-Chlais	SHEILING HUT (Possible)	282100	960600
MHG16107	Allt Na Dubh-Chlais	ENCLOSURE	282600	961100
MHG17806	Dail Teine	TOWNSHIP	283100	962700

6.5.28 These heritage assets are all located within modern commercial forestry plantation toward the eastern side of the Site Boundary in the region of the more consolidated settlement activity toward the base of the Strathy River valley. One of the NDAs, the possible post-medieval sheiling hut (MHG18609), is located on the higher slopes of the hills, alongside the Allt Na Dubh-Chlais burn (MHG06107). A prehistoric hut circle and undated field system at Dail Teine (MHG9524) lies immediately outwith the Site Boundary but may contain elements that extend within it. All three NDAs have their period recorded as unknown having been identified by the HER through their depiction on historic mapping, and are likely of the later historic periods.

6.5.29 Hitherto unknown remains may be focussed on the resource of the River Strathy along the eastern extent of the Site, as well its three tributaries which run east-west through the north, central and southern parts of the Site.

6.5.30 All designated and NDAs within the Site Boundary and 2km OSA are depicted on **Appendix A, Figure 6.5.1**.

Outer Study Area

6.5.31 Within 2km of the proposed turbine locations there is one Scheduled Monument (SM), one Category C Listed Building and 89 NDAs. The Scheduled Monument is Armadale Burn, broch 1420m south east of Armadale House (SM13678) which is situated approximately 1km west of the Site. The Listed Building is Strathy former Church of Scotland (LB7143), a former parliamentary church located approximately 1.6km north east of the Site. The majority of the NDAs in the OSA pertain to prehistoric settlement evidence predominantly focused on the habitable and cultivable land along Armadale Burn to the west and toward the mouth of the Strathy River Valley to the north east. Within the Strathy River Valley, NDAs are predominantly the remains of settlement and agricultural activity from the post-medieval period, potentially earlier, through to the present day. The documented site of a potential 17th century battle is also identified.

6.5.32 Within 2-5km there are two Scheduled Monuments located approximately 3km north east of the Site, along Baligill Burn. These are industrial remains of the Baligill Mill and Limekilns (SM4265, SM4290).

6.5.33 Within 5-10km of the Site there are 11 Scheduled Monuments, nine of which comprise prehistoric ritual, defensive and domestic features. These are predominantly situated along the large, habitable valleys of the Rivers Halladale and Naver to the east and west of the Site. The medieval Borve Castle (SM2112) and the carved stone cross slab at Farr Graveyard (SM1889) are also present and situated along the coastline to the north west. There is one Category A Listed Building present: the Garden Pavilion and Walled Garden at Bighouse (LB7160) located to the north east.

6.5.34 Within 10-20 km of the Site there are 36 Scheduled Monuments, one of which is also a Property in Care (Cnoc Freiceadain Long Cairns: SM90078/PiC284). Three Category A Listed Buildings are also present and refer to post-medieval domestic, agricultural and harbourside structures at Sandside (LB14986, LB14988) to the north east of the Site.

6.5.35 There are no World Heritage Sites, Conservation Areas, Inventory Gardens and Designed Landscape's or Inventory Battlefields within the OSA.

6.5.36 All designated heritage assets are within the OSA are depicted on **Appendix A, Figure 6.5.2**.

Primary Mitigation

6.5.37 Data from desk-based and site-based sources will be gathered in GIS and the cultural heritage team will work throughout the EIA process with colleagues and consultees to understand potential effects, and provide input into design to address them. Project design will consider likely significant effects of the Proposed Development on the setting and cultural significance of any heritage assets in the OSA identified during Stage 1 Setting Assessment. For example, the aim of the design would be to ensure that the Proposed Development does not dominate heritage assets that were intentionally constructed historically to be prominent landscape features, and will seek to maintain key intentional sightlines between, to, from or across associated and contemporary monuments, or designed vistas. It is acknowledged that there are other factors which might form part of the setting that contributes to the cultural significance of a heritage asset, as outlined in HES (2016, updated 2020).

Additional (Secondary and Tertiary) Mitigation

6.5.38 Onshore wind energy project infrastructure typically has a relatively small footprint compared to the overall Site Boundary with scope for micro siting to avoid direct physical impacts to archaeological remains during construction.

6.5.39 Precautionary measures such as fencing off heritage assets during construction works may be employed to avoid accidental impacts.

6.5.40 Where potential direct effects are identified, evaluation methodologies may be employed (such as intrusive works) to better understand the extent and cultural significance of archaeological remains.

6.5.41 Adverse effects may be mitigated by an appropriate level of survey, excavation, recording, analysis and publication of the results, in accordance with a written scheme of investigation (per NPF4 Policy 7 Historic assets and places criterion (o) and PAN2/2011 Planning and Archaeology, sections 25-27).

Description of Likely Significant Effects

6.5.42 To assess the effect of the Proposed Development upon cultural heritage, the significance of any effect is examined through comparison of the importance of each heritage asset against the potential magnitude of change upon it. Effects on cultural heritage can arise through direct physical effects, indirect effects, or effects on setting, and cumulative effects:

- Direct physical effects describe those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works and will only occur within the Site Boundary.
- Indirect effects describe secondary processes, triggered by the Proposed Development, that lead to the degradation or preservation of heritage assets. For example, changes to hydrology may affect archaeological preservation, and changes to the setting of a building may affect the viability of its current use and thus lead to dereliction.
- An effect on the setting of a heritage asset occurs when the presence of a development changes the surroundings of a heritage asset in such a way that it affects (positively or negatively) the cultural significance of that asset. Visual effects are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Setting effects may be encountered at all stages in the life cycle of a development from construction to decommissioning, but they are only likely to lead to significant effects during the prolonged operational phase of the Proposed Development.
- Cumulative effects can relate to the physical fabric or setting of assets. They may arise as a result of impact interactions, either of different impacts of the proposal itself, or additive impacts resulting from incremental changes caused by the proposal together with other consented or proposed projects.

6.5.43 Effects on unknown heritage assets will be discussed in terms of the likelihood that a significant effect could occur. The level of risk depends on the level of archaeological potential combined with the nature and scale of disturbance associated with construction activities and may vary between high and negligible for different elements or activities associated with a development, or for the Proposed Development as a whole.

Receptors/Matters to be Scoped into Further Assessment

Construction

6.5.44 It is anticipated that the known NDAs identified within the Site Boundary will be avoided by design. Therefore significant direct or indirect (physical) impacts during construction are not likely.

Operation

6.5.45 As part of this Scoping Report, a Stage 1 Setting Assessment has been conducted and presented in full in a Gazetteer (**Appendix A, Figure 6.5.1**). The purpose of this part of the Scoping Report is to propose and agree with consultees the heritage assets which settings may be affected by the Proposed Development and which will require further detailed assessment in the cultural heritage chapter of the EIA Report.

6.5.46 The Stage 1 Setting Assessment methodology follows the approach set out in HES (2016, updated 2020) and Appendix 1 of Scottish Natural Heritage (now NatureScot) and HES (2018). The methodology has considered each heritage asset in the OSA in turn to identify heritage assets in the ZTV that have a wider landscape setting that contributes to their cultural significance and whether it is likely that cultural significance would be negatively impacted by the Proposed Development. Where heritage assets are located outwith the ZTV, viewpoints within the ZTV which may be a key view toward the heritage asset and the Site are considered (**Appendix A. Figure 6.5.3**).

6.5.47 The Stage 1 Setting Assessment undertaken for this EIA Scoping Chapter has identified five heritage assets for which wireline visualisations (VP1-VP8) have been generated to aid the assessment as it is considered the wider landscape contributes to their cultural significance. Refer to **Table 6.5.2** for a list of the heritage assets and corresponding wirelines which are subject of the Stage 1 Setting Assessment. Wirelines are provided in **Appendix A, Figure 6.5.2**.

6.5.48 Of all heritage assets within the OSAs, three are proposed for detailed assessment in the EIA Report as (in bold text in **Table 6.5.2**) it is considered there is a potential for their cultural significance to be affected by the Proposed Development.

Table 6.5.2: Stage 1 Setting Assessment results – heritage assets to be scoped in

VP No.	Asset Ref	Name	Status	Detailed Assessment Proposed in EIA
1	SM13678	Armadale Burn, broch 1420m SE of Armadale House	Scheduled Monument	Yes
2				
3	LB7143	Strathy Former Church of Scotland	Cat C LB	Yes
4				
5	MHG9518	Kerb Cairn Allt Ruadh	Non-designated	Yes
6a-b				
7	SM1790	Four Cairns, 570m WSW,345m SW, 355m SW and 385m SSW of the Glen	Scheduled Monument	No
8	SM90078/PIC284	Cnoc Freiceadain, Long Cairns	Scheduled Monument/ Property in Care	No

6.5.49 During the EIA process, where the Stage 1 Setting Assessment and scoping responses identify the potential for a significant effect, the relevant affected heritage assets will be visited to define baseline conditions and identify key viewpoints.

6.5.50 Following scoping, further consultation with national and regional curators HES and THC Historic Environment Team will be undertaken as necessary to agree the specific visualisations required to support the EIA. Visualisations will be used in tandem with the ZTV to understand the likely nature of change in the setting of heritage assets and will be prepared to illustrate changes to key views where potentially significant effects are identified to support the EIA Report submission.

Cumulative Impacts

6.5.51 Cumulative effects will be considered in cases where an effect of more than negligible significance would occur upon a heritage asset, as identified through EIA, as a result of the Proposed Development. Wind energy developments (consented, under construction, or at application stage) are included in the cumulative assessment where they also feature prominently within views of or towards heritage assets identified as affected by the Proposed Development, thus also have a potential to impact upon their cultural significance.

Receptors/Matters to be Scoped Out of Further Assessment

6.5.52 Other than the three heritage assets identified in **Table 6.5.2**, all other heritage assets in the OSA are proposed to be scoped out of further detailed setting assessment at EIA stage. Proportionate assessment reasoning and justification is provided in the Gazetteer (**Appendix A, Figure 6.5.1**).

6.5.53 For Listed Buildings within towns and villages, the Proposed Development would not appreciably alter the features of their settings that contribute to their cultural significance. It is therefore proposed that detailed assessment of Listed Buildings within towns and villages (other than designated conservation areas) is scoped out of the EIA.

6.5.54 Construction phase setting effects will be temporary and are not considered to be significant in EIA terms due to their very short duration. Construction phase setting effects are therefore proposed to be scoped out of the assessment.

6.5.55 The extent of ground disturbance associated with decommissioning will not extend beyond the construction footprint and so decommissioning effects on heritage assets within the Site Boundary will not occur. Any residual operational phase setting effects will be reversed. Decommissioning effects are therefore proposed to be scoped out of the assessment.

Opportunities for Enhancing the Environment

6.5.56 Identified and potential heritage assets within the Site are currently obscured by forestry plantation that has likely truncated any surviving elements. Nevertheless, opportunities for enhancing the historic environment during construction, operation and decommissioning phases of the Proposed Development may arise for receptors within the Site.

6.5.57 Further opportunities for enhancement may also arise through archaeological recording of any receptors identified within the Site that would be subject to irreversible change, therefore maximising understanding and appreciation.

Proposed Assessment Methodology

6.5.58 To assess the significance of the effect of the Proposed Development upon cultural heritage, the importance of each heritage asset is assessed against the potential magnitude of change upon it using a reasoned matrix-style approach. Refer to **Appendix C** for the significance criteria to be applied in the assessment of impacts of the Proposed Development upon cultural heritage.

Difficulties and Uncertainties

6.5.59 Difficulties and uncertainties that may inhibit the ability to undertake a thorough assessment of the cultural heritage effects of the Proposed Development as follows:

- Documentary sources are rare before the medieval period.
- Where documentary sources are used in assessing archaeological potential, professional judgement is used in their interpretation;
- HER records can be limited because opportunities for research, fieldwork and discovery depend on the volume and frequency of commercial development and occasional research projects, rather than the result of a more structured research framework. A lack of data within the HER records does not necessarily equal an absence of archaeology;
- Where archaeological sites have been identified solely from aerial imagery without confirmation from archaeological excavation or supporting evidence in the form of find-spots for example, it is possible the interpretation may be revised in the light of further investigation.
- The significance of sites can be difficult to identify from HER records, depending on the accuracy and reliability of the original source;
- There can often be a lack of dating evidence for archaeological sites; and
- Any archaeological field visit has inherent limitations, primarily because archaeological remains below ground level may have no surface indicators.

Legislation, Policy, and Guidance

6.5.60 It is proposed that the cultural heritage EIA will be carried out with reference to the following legislation, policy and guidance:

<u>Legislation:</u>

- The Ancient Monuments and Archaeological Areas Act 1979;
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997;
- The Historic Environment Scotland Act 2014;

<u>Policy:</u>

- NPF4 Part 1 A National Spatial Strategy for Scotland 2045 and NPF4 Part 2 National Planning Policy (The Scottish Government, February 2023) Policy 7: Historic assets and places;
- Historic Environment Policy Scotland (HEPS) (HES, 2019); and
- Highland-wide Local Development Plan (HwLDP, 2012): Policy 57: Natural, Built and Cultural Heritage.

<u>Guidance:</u>

- Historic Environment Scotland Circular (HES, 2019).
- PAN 2/2011: Planning and Archaeology (Scottish Government).
- IEMA/CIfA/IHBC Principles of Cultural Heritage Impact Assessment in the UK (2021).
- Designation Policy and Selection Guidance, (HES 2019).

- Our Past, Our Future: The Strategy for Scotland's Historic Environment (HES 2023).
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists (CIfA 2020).
- Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (CIfA 2020).
- Managing Change in the Historic Environment: Setting (HES 2016, updated 2020), and any other relevant Managing Change in the Historic Environment guidance.
- Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment Process in Scotland (NatureScot and HES, 2018).
- Highland Council Standards for Archaeological Work (2012).

References

Managing Change in the Historic Environment: Setting: Historic Environment Scotland: 2016, updated 2020.

Environmental Impact Assessment Handbook, Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland, Appendix 1: Cultural Heritage Impact Assessment, Version 5: Scottish Natural Heritage (now NatureScot) and Historic Environment Scotland, April 2018.

National Planning Framework 4 (NPF4): The Scottish Government: 2023.

Our Past, Our Future: The Strategy for Scotland's Historic Environment (2023); PAN 2/2011: Planning and Archaeology.

Scoping Questions

1. *The Zone of Theoretical Visibility (ZTV) for the scoping layout used for the Stage 1 Setting Assessment in this Scoping Chapter has been provided as a digital shapefile as part of this submission. Do consultees wish to request any further digital datasets to be provided to aid their scoping opinion?*
2. *Do consultees agree with the proposals for 'Receptors/Matters to be Scoped Out' in the Cultural Heritage assessment for the EIA Report?*
3. *Are consultees content with the proposed Outer Study Area limits presented in this Scoping Report?*
4. *Are there any other relevant consultees other than HES and THC who should be contacted with respect to the Cultural Heritage assessment?*
5. *Do consultees wish to request any further specific heritage assets are assessed in the EIA Report other than the three heritage assets identified from the Stage 1 Setting Assessment included in this EIA Scoping Report (listed below)?*
   - ***SM13678** Armadale Burn, broch 1420m south east of Armadale House (Scheduled Monument)*
   - ***LB7143** Strathy Former Church of Scotland (Cat C LB)*
   - ***MHG9518** Kerb Cairn Allt Ruadh (Non-designated heritage asset)*

6.6 Traffic and Transport

Consultation

6.6.1 No consultation to inform the traffic and transport assessment has been undertaken to date. Key consultees will include:

- THC; and
- Transport Scotland.

6.6.2 Agreement will be sought on the study area for construction traffic, along with traffic distribution. Additionally, consultees may:

- Specify aspects of the environment and issues relating to those that should be considered and addressed in the Traffic and Transport of the EIA Report (with emphasis on any issues local to the Site);
- Comment on the proposed approach to the traffic and transport assessment;
- Comment on or recommend, where appropriate, assessment methodologies; and
- Highlight other relevant bodies or organisations that may have a vested interest in the Proposed Development or would be able to provide relevant information.

6.6.3 Once the scoping opinion has been received, the responses will be analysed, and the relevant points raised therein taken forward and used to inform the traffic and transport assessment.

Study Area

6.6.4 The Site is located south west of Strathy and east of Bettyhill and lies wholly within THC administrative area. The approximate distance from nearby settlements to the Site Boundary are:

- Strathy: 1.6km south – south west
- Thurso: 27.3km south west
- Armadale: 1.3km north west
- Melvich: 2.8km north east
- Reay: 13.8km north east
- Bettyhill: 10km west

6.6.5 Construction and operation traffic will access the Site from the A836. Details of the Site entrance is yet to be determined.

6.6.6 Imported materials for upgrading/extending existing access tracks/hardstanding and new tracks and hardstanding and structural fill materials are likely to be sourced from nearby quarries. For example, John Gunn & Sons Ltd operate a concrete, sand and natural aggregate quarry at Melvich. John Gunn & Sons Ltd also operate rock quarries at Skitten and Bower. The Bower quarry supplies crushed stone, Asphalt products, ready mix concrete and concrete blocks.

6.6.7 It is anticipated that, subject to agreement with the respective road authorities, the preliminary study area will therefore consider the following:

- A836 between Thurso and Bettyhill;
- A897 between the junction with the A836 to the north and Forsinard; and
- A9 between Thurso and Roadside.

6.6.8 At this early stage multiple options for access into the Site are being explored in order to minimise the impact on the road network as well as nearby residential dwellings and other local amenities.

6.6.9 An Abnormal Indivisible Load Route Survey Report has been undertaken by Pell Frischmann (January 2024) to assess transport routes for Wind Turbine Generator components from Port of Entry at Scrabster to the Site. The preferred routing of components is as follows:

- From Port of Entry following the A9 southbound; and
- Turn right onto the A836 and continuing westbound until reaching the Site.

6.6.10 To accommodate the delivery of turbine components and other abnormal loads, areas on the proposed transport route may require oversail and/or overrun. Work is ongoing to identify and agree these requirements.

6.6.11 The preliminary route survey report will be included as a Technical Appendix to the EIA Report.

Non-motorised User Networks

6.6.12 Using the Interactive Map of the Core Paths in the THC area, initial investigations have determined that there are no Core Path networks traversing the Site. Several Paths (including general Core Paths, Cairngorm National Park Core Paths and the Great Glen Way) intersect with the external road network within the study area at various locations.

6.6.13 Some pedestrian footways are provided on the principal roads through the main settlements along the transport routes, to one side as a minimum.

Data Sources to Inform the EIA Baseline Characterisation

6.6.14 For the traffic and transport assessment, suitable baseline traffic data classified by vehicle type for the roads within the defined study area will be obtained from the Department for Transport and the relevant local roads authority where available.

6.6.15 Traffic survey data from the Department for Transport traffic count database are to be utilised and considered in line with traffic estimate data provided by the Applicant for the construction phase of the Proposed Development. If not available from the Applicant, traffic data will be based on an estimation of the material quantities for all elements of the Proposed Development.

6.6.16 The following traffic count sites have been identified within the study area:

- 40935 (A836 between C-road at west edge of Bettyhill and A897)
- 20933 (A836 between B871 and C-road crossroads at Bettyhill)
- 10934 (A836 between A897 and A9)
- 40800 (A9 between B874 Princess Street and A836)
- 40956 (A9 between A836 and B874 Princess Street)
- 10800 (A9 between A882 and A836)
- 811483 (B874)
- 10960 (A897 between B871 and A836)

Surveys to Inform the EIA Baseline Characterisation

6.6.17 Any data gaps in the information in **paragraphs 6.6.14 and 6.6.15** will be supplemented with specifically commissioned traffic surveys.

Baseline Conditions

6.6.18 A preliminary review of the Department for Transport online traffic data portal suggests that historic traffic counts are available for most of the main roads leading to the Proposed Development. A total of eight Department for Transport count points are located within the roads identified in the study area and in the vicinity of the Site.

6.6.19 Data for local roads is less available. Depending on the chosen access points, additional surveys may be required. Open-source aerial imagery and mapping may also be used.

6.6.20 Information on land ownership / highways boundary is known for the various access options from the A836. No information on land ownership / highways boundary for the rest of the route is known at this stage but would be relevant based on the access location if alterations are required.

Additional (Secondary and Tertiary) Mitigation

Construction

6.6.21 Where significant traffic and transport effects are identified, mitigation will be proposed to reduce the impact of the Proposed Development. This will include mitigation to facilitate the safe transport of the Wind Turbine Generator components from the Port of Entry to Site, as is detailed in the preliminary route survey report undertaken separately to support the Application.

6.6.22 Mitigation will also include a Outline Construction Traffic Management Plan (CTMP) as part of the EIA Chapter. The Outline CTMP will include a framework for managing any cumulative impacts of the Proposed Development, with a commitment to work co-operatively with other wind farm developers to mitigate any impacts.

Operation

6.6.23 Once operational, the effect on the local road network will be minimal. No mitigation will be required during the operational phase.

Description of Potential Significant Effects

Construction

6.6.24 Wind Turbine Generators will be transported by sea to a Port of Entry at Scrabster. Turbine components will be transported to Site on abnormal load vehicles via an agreed access route.

6.6.25 General construction materials will need to be transported to the Site in standard Heavy Goods Vehicles (HGVs), leading to a temporary increase in traffic volumes on the surrounding road network. This will be dependent on the construction material quantities required and their source. This will need to be considered across the construction programme. Additionally, a small number of trips will also be generated by personnel travelling to Site.

Table 6.6.1 Access, Traffic and Transport receptors/matters to be scoped in

Receptor/ Matter	Phase	Justification
A-Road A836	Construction	During the construction phase, traffic will be generated by a range of activities, including: – Construction workers arriving and leaving Site areas; – Supply of construction materials and plant associated with the Site establishment and main construction works; – Movement of plant; – Removal of soil resources, spoil or waste; and – Service vehicles and visitors. Construction traffic estimates are unknown at this stage, as such this phase of works has been scoped in to enable consideration of impacts on the receptors within the study area against the Guidelines for the Environmental Assessment of Traffic and Movement (Institute of Environmental Assessment, 2023).
A-Road A9	Construction	
A-Road A897	Construction	
B-Road B874	Construction	
Local roads providing access for general construction traffic and abnormal loads from the A836 (to be confirmed through the EIA process)	Construction	

Table 6.6.2 Access, Traffic and Transport receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
All	Operation	Once operational, the effect on the local road network will be minimal. Access will be required from time to time for routine maintenance, and less frequently for major maintenance and upgrades. It is not expected that the traffic on the existing network will change by more than 10% for HGVs or 30% for all vehicle movements, these being defining thresholds for environmental effects on the local transport network.
All	Decommissioning	The levels of traffic associated with decommissioning are anticipated to be lower than those required during the construction phase. There will therefore be a reduced impact compared to that assessed for construction phase. It is proposed to scope out decommissioning impacts.

Opportunities for Enhancing the Environment

6.6.26 No opportunities for enhancement in relation to access, traffic and transport have been identified at this stage.

Proposed Assessment Methodology

6.6.27 Assessment of the access, traffic and transport environmental impacts and their significance will be based on the Guidelines for the Environmental Assessment of Traffic and Movement (Institute of Environmental Management and Assessment, 2023) This guidance provides threshold limits in a screening process to identify the appropriate extent of the assessment area and likelihood of impacts. These are:

"Rule 1 - Include highway links where traffic flows would increase by more than 30% (or the number of HGVs would increase by more than 30%).

Rule 2 - Include any other specifically sensitive areas where traffic flows would increase by 10% or more."

6.6.28 Where the predicted increase in traffic flow is lower than the thresholds, the Guidelines suggest the significance of the effects are low or insignificant and further detailed assessments are not warranted.

6.6.29 Where construction traffic flows exceed these thresholds, the significance of traffic and transport effects (including cumulative) will be determined by assessing the sensitivity of receptors against the magnitude of change to categorise significance as Major, Moderate, Minor or Negligible. The environmental effects that may be assessed are namely:

- Severance of communities;
- Road vehicle driver and passenger delay;
- Non-motorised user delay;
- Non-motorised user amenity;
- Fear and intimidation on and by road users;
- Road user and pedestrian safety; and
- Hazardous/large loads.

6.6.30 The access, traffic and transport assessment will also be based on a set of standards on environmental assessment from the Design Manual for Roads and Bridges (2020) which sets out a framework for EIA. The significance of likely effects is determined by considering the sensitivity of receptors to change, taking account of the specific issues relating to the study area, and then the magnitude of that change.

6.6.31 The determining factors that need to be taken into account when assessing the impact of traffic and movement vary for each type of impact.

6.6.32 Having quantified the magnitude of the impact (i.e., the level of change), there are various ways of interpreting whether or not the resulting outcome is considered significant. There is no definition of a 'significant effect' in the EIA Regulations. Furthermore, for many effects, there are no simple rules that define appropriate assessment thresholds and therefore there is a need for interpretation and professional judgement. The EIA Report will record judgements about the likely significance of effects arising from the Proposed Development.

6.6.33 The significance criteria proposed for the traffic and transport assessment is presented in **Appendix C.** Difficulties and Uncertainties

6.6.34 To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- This EIA Scoping Report has been prepared on the basis of the current design of the Proposed Development, as described within **Chapter 2: The Proposed Development**.
- The overview of baseline conditions is based on desk-based studies only at scoping stage and the data available at the time of writing.
- The construction phase assessment will assume the use of standard construction techniques commensurate for the type of works being undertaken. The final techniques, plant selection and programme are expected to be determined by the appointed contractor, in consultation with relevant authorities prior to commencement of construction.
- Traffic estimates for any stage of the Proposed Development are not confirmed at this time and may be subject to change but will be confirmed prior to assessment.

References

Institute of Environmental Management and Assessment (2023), Guidelines for the Environmental Assessment of Traffic and Movement.

Highways England (2020), LA 104 Environmental assessment and monitoring. In H. England, Design Manual for Roads and Bridges.

Scoping Questions

1. *Do you agree with the proposed list of consultees?*
2. *Do you agree with the proposed study areas?*
3. *Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?*
4. *Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?*
5. *Are any receptors/assets/resources not identified that you would like to see included in the EIA Report?*
6. *Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?*
7. *Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?*
8. *Do you require any shapefiles to assist you in your review of the Proposed Development?*

6.7 Noise and Vibration

Consultation

6.7.1 The Environmental Health Officer at THC will be consulted prior to submission of the Scoping Report regarding the proposed locations for the baseline noise survey prior to the commencement of the fieldwork. All relevant comments will be incorporated into the fieldwork and noise assessment.

Study Area

6.7.2 The study area for the noise impact assessment will include the most affected noise sensitive receptors considered to be representative of residential dwellings in the immediate vicinity that may be subject to the effects of noise from construction (and decommissioning) and/or operation of the Proposed Development, selected based on the results of (initial) predictive noise modelling, relevant noise criteria and professional judgement.

6.7.3 The study area for the wind farm component should, as a minimum, be the area within which noise levels from the proposed wind turbines, and any proposed, consented and existing wind turbines may exceed 35dB (decibels) LA90 at up to 10m/s standardised wind speed (i.e., any area which as a direct component of the proposed wind farm, or as a cumulative result of the operation of the Proposed Development and other neighbouring wind farms will exceed 35dB(A-weighted)).

6.7.4 The study area and initial contour plot are presented in **Appendix A, Figure 6.7.1**. This is based on 15 m/s wind speed noise emission data (105.5 dB LWA – highest operating mode 1) from 14 no. Vestas V162 7.2 MW turbines, with hub height of 119 metres. The predictions allow for a +2 dB uncertainty in source emission data, and a -2dB correction from LAeq to LA90.

6.7.5 The initial noise predictions indicate that four receptors are within the 35dB LA90 contour with additional receptors just outside the 35dB LA90 contour line towards Strathy, Lednagullin and Armadale. Cumulative modelling has also been completed and shows cumulative contributions at these receptors. This is shown in **Appendix A, Figure 6.7.2**.

6.7.6 Assessment of construction and decommissioning phase noise and vibration levels will consider similar noise and vibration sensitive receptors as those adopted for the operational assessment. It will also consider sensitive receptors situated alongside the proposed Site access tracks and traffic routes. Noise and vibration predictions will be undertaken to the methodology specified in Parts 1 and 2 of British Standard 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites (Part 1: Noise and Part 2: Vibration)'. Noise limits for construction activity would be recommended based on the baseline noise data and information within BS 5228-1:2009+A1:2014. At the outline assessment stage, construction details (i.e., construction methods, programmes, and plant lists) are likely to be unavailable. As such, indicative construction noise and vibration limits would be recommended based on the baseline noise data and information within BS 5228 and indicative mitigation measures would be recommended. The assessment of construction related traffic flows on the public highway will be undertaken (based on traffic flow data provided by the project team), in accordance with the Calculation of Road Traffic Noise and LA111 Design Manual for Roads and Bridges.

6.7.7 At this stage, a location has not been identified for the BESS element of the Proposed Development. Therefore, a study area to assess noise impact from any such facility has not yet been determined. Receptors would be selected based on proximity and sensitivity to the noise producing elements of the Proposed Development.

Legislation, Policy and Guidance

6.7.8 The following guidance will be considered as part of the assessment:

- NPF4
- Scottish Government PAN 1/2011 'Planning and Noise'
- Scottish Government Technical Advice Note: 'Assessment of Noise'

6.7.9 The wind farm operational noise monitoring and assessment will be undertaken in accordance with:

- ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms'
- Institute of Acoustics 'Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'

6.7.10 The operational noise assessment for the BESS will be undertaken in accordance with:

- BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'

6.7.11 The construction phase noise and vibration assessment will be undertaken in accordance with:

- BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites'

Data Sources to Inform the EIA Baseline Characterisation

6.7.12 The data sets which have been utilised to determine the proposed assessment scope include:

- Aerial imagery and mapping

6.7.13 Additional data sets which will be used to inform the impact assessment in the EIA Report include:

- Noise impact assessments of nearby wind farms (where available and applicable)
- Any available baseline noise survey studies previously undertaken in the area (for planning applications other than wind farms)
- Data from baseline noise surveys for the Proposed Development at selected noise sensitive receptors, to establish the prevailing pre-development acoustic environment (as defined below).

Surveys to Inform the EIA Baseline Characterisation

6.7.14 A baseline noise survey will be undertaken to determine the existing noise environment at the nearest noise sensitive receptors.

6.7.15 The strategy for the proposed baseline noise survey will be agreed in advance with THC. At this stage, it is intended the baseline survey will comprise unattended measurements taken over an initial period of four weeks at up to five receptors located in the vicinity of the Proposed Development, with the resulting dataset subsequently used to gain an understanding of the existing noise levels.

6.7.16 Baseline noise monitoring is proposed at five locations, each representative of the nearest sensitive receptors listed below.

- Dalangwell House
- Bowside Lodge
- Property representative of dwellings south of Strathy
- Property representative of dwellings at Lednagullin
- Property representative of dwellings at Armadale

6.7.17 The noise monitoring locations will be agreed with THC prior to installation.

6.7.18 Survey locations have been selected where background noise levels are not influenced by existing turbines (assuming these cannot be turned off during the survey).

6.7.19 At the time of writing, there are no properties understood to be financially involved in the Proposed Development.

6.7.20 Representative baseline noise survey locations for assessment of the wind farm element have been chosen following initial analysis (modelling) to identify noise sensitive receptors that exceed 35dB LA90 at up to 10m/s wind speed in noise level from the proposed, consented and existing wind turbines (i.e., on its own or cumulatively). A noise contour plot of the Site has been prepared based on data taken from the candidate turbine at a standardised 10m/s wind speed (see **Appendix A, Figures 6.7.1** and **6.7.2**).

6.7.21 Wind data, including wind speed and direction, will be obtained to inform the baseline noise survey, at a location representative of the Site through LIDAR, SODAR or Met mast.

6.7.22 Additional monitoring may be required for the assessment of the BESS element at locations representative of nearest/most affected noise sensitive receptors. However, the details of the BESS infrastructure is unknown at this stage and hence the number and location of the monitoring positions will be determined alongside consultation with THC at the baseline monitoring stage, prior to assessment.

Baseline Conditions

6.7.23 The background noise environment is likely characterised by noise sources such as wind-swept vegetation, birdsong and other animals, watercourses, and traffic from local roads.

6.7.24 One existing, operational wind farm has been identified 1.25km (approx. distance to nearest existing turbine) to the south of the Site (Strathy North Wind Farm), which consists of 33 2.3MW turbines with a tip height of 110m.

6.7.25 Four other wind farms nearby are currently in planning or consented:

- Melvich Wind Farm (ref. 22/02994/SCOP, north east of Strathy forest) – approx. 3km from the Proposed Development (nearest consented/proposed turbine);
- Strathy Wood Wind Farm (ref. 13/04469/S36, south of Strathy forest) – approx. 4km from the Proposed Development (nearest consented/proposed turbine); and
- Kirkton Energy Park (ref. 22/05533/S36, east of Strathy forest) – approx. 5km from the Proposed Development (nearest consented/proposed turbine).
- Strathy South Wind Farm (ref.20/03481/S36, south of Strathy forest) – approx. 7.5km from the Proposed Development (nearest consented/proposed turbine).

Additional (Secondary and Tertiary) Mitigation

Construction

6.7.26 Following the outcome of the construction phase assessment, tailored mitigation would be proposed where the predicted noise and vibration levels have the potential to exceed the threshold significance criteria. This would be undertaken with consideration to BS 5228. These additional measures would be recommended where conventional Best Practicable Means (as defined by the Control of Pollution Act 1974, Chapter 40) would not be sufficient.

Operation

6.7.27 If deemed necessary following the outcome of the impact assessment (in accordance with ETSU and the Institute of Acoustics Good Practice Guide), noise control measures in the form of turbine curtailment, or in worst case turbine removal, may be required.

Decommissioning

6.7.28 Similar mitigation methods used during the construction phase would be expected to be employed.

Description of Likely Significant Effects

Construction

6.7.29 Noise and vibration effects arising due to construction related activities and traffic have the potential to impact nearby sensitive receptors. Noise arising during the construction phase will be for a limited duration and can be suitably controlled through means of best practice and ensuring adherence to standard noise limits (by way of a construction noise monitoring schedule).

Operation

6.7.30 During operation, wind farms have the potential to create noise effects through both aerodynamic noise and mechanical noise. Aerodynamic noise is caused by the interaction of the turbine blades with the air. Mechanically generated noise is caused by the operation of internal components, such as the gearbox and generator, which are housed within the nacelle of the turbine. However, the level of mechanical noise radiated from current technology wind turbines is generally engineered to a low level.

6.7.31 The assessment of operational noise will also include the cumulative effects of other turbines in the area, if identified at the time of assessment.

6.7.32 Noise arising due to the operation of the BESS element of the Proposed Development have the potential to lead to significant effects at residential receptors surrounding the Site.

6.7.33 Noise impacts associated with each element of the Proposed Development would be assessed in detail to ensure it can operate within the relevant noise limits.

Decommissioning (if relevant)

6.7.34 The noise impacts due to decommissioning are expected to be equivalent or less than the noise impacts due to construction.

Receptors/Matters to be Scoped into Further Assessment

Table 6.7.1 Noise and Vibration receptors/matters to be scoped in

Receptor/ Matter	Phase	Justification
Noise associated with construction and decommissioning activities	Construction	Noise and vibration due to construction activities and associated construction traffic has the potential to impact sensitive receptors surrounding the Site.
Noise associated with the operation of the wind farm	Operation	Based on the results of the scoping model, a number of residential properties fall within the initial 35 dB LA90 contour, sufficient to warrant assessment.
Noise associated with the operation of the BESS infrastructure	Operation	Noise arising from the operation of inverters, transformers, HVAC, and other ancillary electrical infrastructure required for the BESS infrastructure has the potential to impact sensitive receptors surrounding the Site.

Receptors/Matters to be Scoped Out of Further Assessment

Table 6.7.2 Noise and Vibration receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
Vibration associated with construction and decommissioning activities	Construction and Decommissioning	Given the separation distances between the construction activities and the nearest sensitive receptors, vibration effects during the construction and decommissioning phases of the project are unlikely to be significant.
Vibration effects associated with the operation of the wind farm infrastructure	Operation	It is considered that vibration resulting from the operation of the wind turbines will be imperceptible based on the separation distances between the turbines and the nearest sensitive receptors.
Infrasound and Low Frequency noise resulting from the operation of the wind turbines	Operation	A 2010 study performed on behalf of the UK Government on 'Wind Turbines and Human Health' found no evidence for health effects from infrasound or low frequency noise stemming from wind turbines.
Amplitude Modulation associated with the operation of the wind turbines	Operation	Investigation and assessment of amplitude modulation (AM) can only be undertaken once the turbine is operational. Therefore, an AM assessment cannot be conducted at this stage in the development.
Vibration effects associated with the operation of the BESS infrastructure	Operation	Levels of vibration associated with the BESS will be low and are highly unlikely to be perceptible over the distance ranges between the plant and the nearest residential dwelling.

Opportunities for Enhancing the Environment

6.7.35 There are no opportunities to enhance the environment from a noise and vibration perspective.

Proposed Assessment Methodology

Construction and decommissioning

6.7.36 An assessment of noise levels associated with the construction and decommissioning phases will be undertaken using the assessment methodology and significance criteria set out in BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites: Noise'. The assessment will consider the primary phases of works. The assessment of construction noise will identify where and when predicted noise levels are likely to exceed standard guideline limits, taking into account the rural character of the site and surrounding area. Construction noise management procedures will also be determined.

6.7.37 Consideration will also be given to the potential impact of construction traffic on sensitive receptors in the area. Depending upon the outcome of the assessment of traffic within the Traffic and Transportation chapter of the EIA Report, the impact of traffic noise along the Site access route will be assessed in accordance with the methodology set out in BS 5228-1: 2009+A1: 2014, and the *'Calculation of Road Traffic Noise'* publication, where appropriate. For construction traffic, the criteria set out in the '*Design Manual for Roads and Bridges – LA 111: Noise and Vibration'* are also likely to be referenced.

Operation - Wind farm

6.7.38 Assessment of operational noise from wind farms will be undertaken with reference to ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms'. In summary, the assessment will:

- Identify the nearest noise sensitive receptors to the development site;
- Determine the quiet daytime and night-time noise limits from the measured background noise levels at locations representative of the nearest neighbours;
- Specify a candidate turbine which noise emission characteristics can be considered representative of the wind turbines to be installed onsite;
- Calculate noise levels which would be due to the operation of the wind turbines as a function of site wind speed at the nearest neighbours, including the cumulative effect of all turbines (see below); and
- Compare the calculated wind farm noise emission levels with the derived noise limits.

6.7.39 The Institute of Acoustics 'Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' will be taken into account, including advice on baseline survey, wind shear assessment and noise prediction methodology.

6.7.40 Other wind farms in the vicinity of the Proposed Development that may influence the noise environment at the noise sensitive receptors will be included in a detailed cumulative operational assessment. A review of operational, consented, and wind farms currently the subject of planning applications, would be conducted at the time of assessment.

6.7.41 Noise emissions associated with the wind turbines are predicted in accordance with ISO 9613: *'Acoustics – Attenuation of sound outdoors, Part 2: General method of calculation (1996)'* and again considering guidance contained within institute of Acoustics document '*A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'*.

6.7.42 This is a noise prediction standard that considers noise attenuation offered, amongst others, by distance, ground absorption, directivity and atmospheric absorption. Noise predictions and contours are typically prepared for various wind speeds and the predicted levels are compared against the relevant noise criterion curve to demonstrate compliant operation within the relevant noise limits.

Operation - BESS

6.7.43 An operational phase assessment of the other noise emitting infrastructure associated with the Proposed Development (substation transformers, BESS) will be undertaken to the requirements of BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'.

6.7.44 Noise predictions of the proposed infrastructure will be derived from computer noise modelling or spreadsheet calculations as appropriate and will be compared with the measured prevailing background sound level (LA90) at the nearest or most exposed receptors to determine the magnitude of impacts and significance of effects.

Difficulties and Uncertainties

6.7.45 To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- The scoping chapter has been prepared on the basis of the Proposed Development described within **Chapter 2: The Proposed Development**. It is subject to change through the detailed design process.
- The overview of baseline acoustic conditions is based on desk-based studies only at scoping stage.
- The cumulative effects assessment will require technical specifications (noise data) for the wind turbines of the proposed / consented / existing wind farms identified. This information should be available from THC (planning portal).
- The operational assessment will be based on manufacturer noise data for the candidate turbine. This will typically include uncertainty levels. Where these are not available, we would look to provide a 2 dB uncertainty correction to sound power levels at all wind speeds.
- The construction assessment will assume the use of standard construction techniques commensurate for the type of works being undertaken. The proposed plant items selection and construction schedule, if not available, will be determined as a worst-case, in consultation with THC and the Applicant.

- Details of noise emitting plant/equipment associated with the BESS element of the Proposed Development will be determined at EIA stage.
- Misidentification and/or missed identification of residential dwellings within study area. Verification of residential dwellings considered in the assessment will be achieved through the consultation process and through visit(s) to the Proposed Development's surrounding area and along its surrounding local road networks (as per recommendations of Institute of Acoustics Good Practice Guide).

References

British Standards Institution (2014), British Standard 5228:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites (Part 1: Noise).

British Standards Institution (2019), British Standard 4142:2014+A1:2019, Methods for rating and assessing industrial and commercial sound.

Department of Trade and Industry (1997), The assessment and rating of noise from wind farms (ETSU-R-97).

Institute of Acoustics (2013) A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise.

Scoping Questions

1. *Do you agree with the proposal to scope out the assessment of construction and operational vibration?*
2. *Are there any other wind farms you are aware of within the study area which should be considered in the assessment of operational noise?*
3. *Do you agree with our proposals for the noise assessment; in particular the proposed baseline noise monitoring locations, and application of the appropriate standards and guidance?*
4. *Do the consultees agree that an assessment of vibration and low frequency noise due to the operation of the wind farm can be scoped out of further assessment?*
5. *Do you require any shapefiles to assist you in your assessment of the Proposed Development?*

6.8 Climate

Consultation

6.8.1 No consultation to inform the climate assessment has been undertaken to date and no specific consultation in relation to climate change is envisaged, over and above the consideration of comments received to this EIA Scoping Report.

Study Area

6.8.2 Aligning with the Greenhouse Gas (GHG) Protocol guidance the climate assessment will consider Scope 1 (direct) emissions, Scope 2 (indirect) emissions, and any relevant Scope 3 emissions. Scope 1 GHG emissions will include those emitted directly from all facilities and infrastructure as part of the Proposed Development (e.g., fuel use during construction), and likely within the Site Boundary. Scope 2 and any relevant Scope 3 emissions are indirect GHG emissions which occur outside the Site Boundary (e.g., the embodied GHG emissions from the manufacture and transport of the wind turbines and BESS).

6.8.3 The receptor to GHG emissions is the global climate, and so when assessing the impact and significance of GHG emissions, the national (Climate Change Act 2008 and associated Carbon Budgets) and global context (Paris Agreement) will be considered.

Data Sources to Inform the EIA Baseline Characterisation

6.8.4 The GHG baseline characterisation will be conducted in accordance with the IEMA Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance (2022), having consideration also for PAS 2080:2023 Carbon Management in Infrastructure and Royal Institution of Chartered Surveyors Whole life carbon assessment for the built environment (2023).

6.8.5 Standard emission factors will be applied, sourced from reputable agencies, such as the Department for Environment, Food and Rural Affairs GHG Conversion Factors for Company Reporting (2022).

6.8.6 Flood risk for the Site has been assessed using SEPA Flood Maps (2024). SEPA ranks flood risk on a scale of 0.1%, 0.5%, and 10% chance of flooding annually.

Surveys to Inform the EIA Baseline Characterisation

6.8.7 No surveys have been undertaken to date, and none are expected or planned for this assessment.

Baseline Conditions

6.8.8 The baseline conditions describe the conditions of a business-as-usual scenario whereby the Proposed Development is not undertaken. The baseline comprises existing carbon stock and sources of GHG emissions within the Site Boundary. In the case of GHG emissions, the sensitive receptor is the stability of the global climate.

6.8.9 There are a number of minor watercourses and lochans within the Site Boundary running westward into the River Strathy, which forms the eastern border of the Site. The Site is comprised of commercial forestry which has had little management in recent years and small areas of open land which are likely to comprise peatland with isolated areas of bog pools.

6.8.10 According to the SEPA flood risk maps (2023) the Proposed Development is primarily within Flood Zone 1, showing either no flood risk or very low flood risk (less than a 0.1% chance) of surface water flooding, river flooding and coastal flooding.

6.8.11 The total perimeter of the Site Boundary falls under THC jurisdiction, who highlight renewable energy generation as a key area of focus in their 2045 Net Zero strategy (2023). THC has also set interim targets to be aligned with the Scottish Government's corresponding strategy, such as reducing GHG emissions by at least 75% by 2030, and by at least 90% by 2040.

6.8.12 With regards to the national baseline, the UK Government set a legally binding framework to cut GHG emissions by at least 80% by 2050 in the Climate Change Act (2008). This was amended by the Climate Change Act 2008 (2050 Target Amendment) Order 2019, changing the 80% reduction to a 100% reduction, or net zero, by 2050.

6.8.13 The total UK GHG emissions for 2021 was 505 million tonnes of carbon dioxide equivalence (tCO_2e), up by 6% from the year before. Overall however, the trend of total UK GHG emissions shows a decreasing trajectory from 1990 to 2020. GHG emissions relating to 'Electricity, gas, steam and air conditioning supply' specifically show a significant reduction trend over the past decade, halving from 176 million tCO_2e in 2010 to 81 million tCO_2e in 2020 (BEIS, 2022).

Primary Mitigation

6.8.14 This is not applicable to climate for the Proposed Development, since the purpose of the entire project is to deliver GHG emissions savings.

Additional (Secondary and Tertiary) Mitigation

Construction

6.8.15 A CEMP will be implemented to identify good working practices in line with appropriate standards, including low carbon practices.

Operation

6.8.16 The operation of the Proposed Development is anticipated to have a positive effect on the climate. Nonetheless, there is scope to further improve the Site in terms of ecological enhancements and habitat creation, which can have a positive effect in terms of carbon sequestration. These will be documented in the NEMP, which will be submitted in support of the planning application.

Decommissioning

6.8.17 The decommissioning process is likely to result in GHG emissions, particularly from the removal of turbines. Additional mitigation will be employed that aligns with the hierarchy for managing project-related emissions (avoid, reduce, substitute and compensate).

Description of Potential Significant Effects

Construction

6.8.18 GHG emissions will be inevitable during the construction phase. Main GHG emissions sources are likely to be through land use change, fuel consumption and the embodied GHG emissions of materials. While mitigation measures are likely to be implemented to limit these GHG emissions, GHG emissions will still be material based on current available information.

6.8.19 It is not expected that the GHG emissions from construction will compromise the ability of the UK to meet its carbon reduction targets. However, in view of the cumulative contribution of all emissions towards climate change, and the fact that the global climate is highly sensitive to fluctuations in GHG emissions, the GHG emissions associated with the construction of the Proposed Development will have a significant negative effect upon the climate.

Operation

6.8.20 The operation of the Proposed Development is unlikely to contribute a significant amount of GHG emissions, and can be viewed as achieving GHG emissions savings by reducing the consumption of fossil fuel generated mains electricity. GHG emissions savings will persist for the entirety of the Proposed Development's lifespan, and will contribute cumulatively towards GHG reduction targets set both locally and nationally. This will therefore have a significant beneficial effect upon the climate.

Decommissioning

6.8.21 GHG emissions will be inevitable during the decommissioning phase, again due to the necessary use of heavy machinery. As is the case with construction, the receptor is not confined to the immediate vicinity of the Site. Instead, it is the global atmosphere. As such, the receptor is highly sensitive, in view of the cumulative contribution of all emissions towards climate change. With this in mind, the GHG emissions associated with the decommissioning of the Proposed Development will have a significant negative effect upon the climate.

Receptors/Matters to be Scoped into Further Assessment

Table 6.8.1 Climate Change receptors/matters to be scoped in

Receptor/ Matter	Phase	Justification
GHG emissions	Construction, operation & decommissioning	Aligned with IEMA (2022) guidance, a project that causes GHG emissions to be avoided has a beneficial effect that is significant. It is important to include all GHG emissions when considering the overall lifecycle GHG emissions of the Proposed Development, to determine an accurate 'carbon-payback' time.

Receptors/Matters to be Scoped Out of Further Assessment

Table 6.8.2 Climate Change receptors/matters to be scoped out

Receptor/ Matter	Phase	Justification
Climate Change Risk	Construction, operation & decommissioning	Data from the Met Office UK Climate Projections 2018 (UKCP18), developed by the UK Climate Impacts Programme suggest that climate change will lead to hotter drier summers, warmer wetter winters, increased likelihood of extreme weather events (e.g., heat waves, high rainfall events) and sea-level rise. Due to the embedded resilience of wind turbines to flooding, high heat and wind speeds, these factors are not expected to significantly impact on the construction, operation, or decommissioning of the Proposed Development.

Opportunities for Enhancing the Environment

6.8.22 The Proposed Development is expected to have a net beneficial impact on the climate, in that it will reduce GHG emissions associated with electricity consumption on a national scale. Opportunities exist to further increase the environmental benefit of the Proposed Development by ensuring that GHG emissions associated with the construction and decommissioning process are kept to a minimum by adopting various additional mitigation measures (e.g., biodiversity enhancements).

Proposed Assessment Methodology

6.8.23 The assessment of the effects of GHG emissions arising from the Proposed Development will be carried out in accordance with:

- The Scottish Government's carbon calculator tool (based upon Nayak *et al.,* 2010 and Smith *et al.,* 2011);
- The Institute of Environmental Management and Assessment 'Environmental Impact Assessment Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance' (2022 edition);
- PAS 2080:2023 Carbon Management in Infrastructure; and
- Royal Institution of Chartered Surveyors Whole life carbon assessment for the built environment (2023).

6.8.24 The assessment will quantify applicable Kyoto Protocol GHGs as measured in tonnes of tCO_2e, where equivalence means having the same warming effect as CO_2 over 100 years.

6.8.25 The Scottish Government's carbon calculator tool is considered the best available method to assess GHG emissions from wind farms within the UK. The tool provides for the calculation of CO_2 emissions savings against:

- Carbon loss due to turbine manufacture, construction, operation, and decommissioning;
- Loss due to backup power generation;
- Loss of carbon from the soil;
- Loss associated with runoff of dissolved and particulate organic carbon;
- Loss due to felling of forestry (if applicable); and
- CO_2 gain associated with habitat improvements at site.

6.8.26 In doing this, the tool provides for a determination of the net carbon impact of the Proposed Development and its subsequent carbon payback period.

6.8.27 Where possible, site-specific data will be used and input to the tool. Where this data is not available, default values, as set out in associated guidance, will be used. Where required, input from relevant hydrology, ecology and peatland specialists will be used. A record of all data used, and for what purpose, will be maintained throughout the assessment, and included within an Annex to the EIA Report Climate Chapter. At present (March 2024), the latest version of the carbon calculator tool is V1.8.1.

Difficulties and Uncertainties

6.8.28 To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- The accuracy of a GHG assessment depends on the quality of the data provided. Primary data should always be used where available. Where it is not possible to collect this data, in view of the fact that

this assessment represents a forecast of emissions and some information may not yet be known, secondary data (such as estimates, extrapolations, benchmarks and proxy data such as distance travelled) will be used. Assessments such as this, based largely on secondary data, should only be viewed as an estimate of GHG emissions impact, and actual emissions may vary significantly.

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Scoping Questions

1. *Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?*
2. *Are any receptors/assets/resources not identified that you would like to see included in the EIA Report climate chapter?*
3. *Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?*
4. *Do you agree with the receptors/matters that are proposed to be scoped in and out of further assessment?*

APPENDICES

APPENDIX A FIGURES

Under separate cover

APPENDIX B PROPOSED STRUCTURE OF THE EIA REPORT

The following is a preliminary outline of the EIA Report.

Volume 1 – Non-Technical Summary

Volume 2 - Main Report

Front End

Chapter 1: Introduction

Chapter 2: Planning and Energy Policy Context

Chapter 3: Consideration of Reasonable Alternatives

Chapter 4: Project Description

Chapter 5: Construction, Decommissioning and Operation

Technical Chapters

Chapter 6: Landscape and Visual

Chapter 7: Ecology

Chapter 8: Ornithology

Chapter 9: Hydrology, Geology and Peat

Chapter 10: Cultural Heritage

Chapter 11: Traffic and Transport

Chapter 12: Noise and Vibration

Chapter 13: Climate

Chapter 14: Other Issues

Concluding Chapters

Chapter 17: Cumulative Effects

Chapter 18: Summary of Environmental Commitments

Volume 3 – Technical Appendices

Volume 4 – Figures

APPENDIX C SIGNIFICANCE CRITERIA

Landscape and Visual Impact Assessment

Identification of Landscape and Visual Effects

Judging the significance of landscape and visual effects requires consideration of the sensitivity of the receptors and the magnitude of change to those receptors. These aspects are brought together to form a judgement regarding the overall significance of effect. Using a precautionary approach, unless otherwise stated, all likely effects identified are considered to be negative or adverse.

Sensitivity of Landscape and Visual Receptors

The sensitivity (or 'nature') of landscape and visual receptors is assessed in terms of the susceptibility of the receptor to the type of change proposed and the value attached to the receptor.

Sensitivity is described using 'high', 'medium' and 'low', and is based on an evaluation of criteria such as those set out in the tables below, using professional judgement to balance several factors that may raise or lower the level of sensitivity.

Table 1 Sensitivity of receptors: Landscape

Criteria tending towards Higher or Lower Sensitivity		
	Higher ⟷	Lower
Susceptibility to Change	– Complex, rugged, irregular landform with strong topographical features and distinctive skylines. – Few modern artefacts present, presence of small scale, historic or vernacular settlement.	– Simple, regular landform without strong topographical features, non-prominent or screened skylines. – Presence of large scale structures e.g. utility, infrastructure or industrial elements.
Value	– Designated landscape with national policy level protection. – Relatively rare or 'unique' landscape character type (LCT).	– A landscape without formal designation. – Ubiquitous or extensive landscape type.

Table 2 Sensitivity of receptors: Visual

Criteria tending towards Higher or Lower Sensitivity		
	Higher ⟷	Lower
Susceptibility to Change	– Residents. – People engaged in outdoor recreation such as walkers. – Tourists on scenic routes and visitors to heritage assets or advertised viewpoints.	– Road users, or those on transport routes (not scenic routes). – People whose outdoor activities do not involve or depend on appreciation of views, and those at work.
Value	– Designated viewpoint advertised on Ordnance Survey maps and in tourist information. – Location within an area (nationally) designated for landscape/scenic values. – Views with higher scenic quality, unaffected by overt or intrusive man-made elements.	– Viewpoints not advertised on Ordnance Survey maps or tourist information. – Location not within an area designated for landscape/scenic values. – Views with lower scenic quality, including overt or intrusive man-made elements.

Magnitude of Landscape and Visual Change

Judgements regarding the magnitude of change consider the size, scale, and geographical extent of the landscape effect, and its duration and reversibility.

Given that wind farms currently exist in the study area, the scale and size of change also considers the relationship between the Proposed Development and other wind farms in the landscape.

Magnitude of change is described using criteria such as those set out in the table below, using professional judgement to balance several factors that may raise or lower the magnitude judgement.

Table 3 Magnitude of Change to the Landscape

Criteria tending towards Higher or Lower Magnitude of Change		
	Higher ⟷	Lower
Scale	– Large changes or extensive loss of key features	– Small changes to key features, little or no loss of features
Geographical Extent	– Large areas affected by change – Changes perceived as close to the receptor	– Limited area affected – Changes perceived as distant from receptor

Table 4 Magnitude of Change to the Visual resource

Criteria tending towards Higher or Lower Magnitude of Change		
	Higher ⟷	Lower
Scale	– Proposed Development is large in the view; – Large proportion of the view affected.	– Proposed Development forms a small feature in the view; – Small proportion of the view affected.
Geographical Extent	– Large areas affected by change; – Changes perceived as close to the receptor; – Changes viewed over prolonged section(s) of a route.	– Limited area affected; – Changes perceived as distant from receptor.

Judging the Levels of Landscape and Visual Effect and Significance

In judging significance, sensitivity of receptors is considered in combination with predicted magnitude of change. It does not use a matrix or scoring of sensitivity against magnitude of change, as such approaches are not supported by GLVIA3.

Four levels of effect are used in the assessment: major, moderate, minor and negligible. Effects that are significant in the context of EIA regulations include major and moderate effects.

The table below sets out various criteria and descriptions that are used to guide judgments as to the level of effect.

Table 5 – Levels of Effect: Effects

<table>
<tr><td colspan="4">Criteria tending towards Higher or Lower Effect</td></tr>
<tr><td>Major</td><td>Moderate</td><td>Minor</td><td>Negligible</td></tr>
<tr><td colspan="2">HIGHER LEVEL OF EFFECT
Effects on people who may be particularly sensitive to changes in views/ visual amenity, or at recognised viewpoints or from recognised scenic routes.
Large scale changes which introduce new, non-characteristic or discordant or intrusive elements into the landscape or view.</td><td colspan="2">LOWER LEVEL OF EFFECT
Effects on people who are generally less sensitive to changes in views/ visual amenity.
Small changes or changes which are well integrated into the view, often involving features already present in the landscape or view.</td></tr>
<tr><td colspan="2">Significant</td><td colspan="2">Not Significant</td></tr>
<tr><td>Substantial changes affecting the character of the landscape or the elements therein.</td><td>Changes affecting the character of the landscape or the elements therein.</td><td>Slight changes affecting the character of the landscape or specific elements therein.</td><td>No or minimal perceptible changes affecting the character of the landscape or specific elements therein. Note that this includes no effect.</td></tr>
<tr><td>Substantial changes in the view, and may become a defining influence or key focal point in the view.</td><td>Clearly visible changes to the view, and may form an important but not defining element of the view.</td><td>Slight changes to the view, and is neither dominant nor prominent, but is visible in the view.</td><td>Hardly perceptible changes to the view, may go unnoticed as a minor element in the view, or is not visible.</td></tr>
</table>

Ecology

The first stage of an ecological impact assessment (EcIA) is 'determining value' of ecological features or 'receptors'. CIEEM places the emphasis on identifying different aspects of ecological value including designations, biodiversity value, potential value, secondary or supporting value, social value, economic value, legal protection and multi-functional features. These values are applied to the receptors within a defined geographical context and examples can be seen in **Table 6**.

Table 6 Ecology resource/receptor evaluation criteria

Receptor Value	Example Criteria
International	An internationally designated site i.e. SAC and/or Ramsar site or proposed site (or pSAC). Large areas of priority habitat listed under Annex I of the Habitats Directive, and smaller areas of such a habitat that are essential to maintain the viability of that ecological resource. A regularly occurring, nationally significant population of any internationally important species, listed under Annex II or Annex IV of the Habitats Directive.
National	A nationally designated site e.g. SSSI, or area meeting criteria for national level designations e.g. national nature reserve. Significant extents of a priority habitat identified in the UKBAP / Scottish Biodiversity List (SBL), or smaller areas which are essential to maintain the viability of that ecological resource. A regularly occurring, regionally significant population of any nationally important species listed as a UK BAP / SBL priority species and species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
Regional	Viable areas of key semi-natural habitat identified in the UKBAP. A regularly occurring, locally significant population of any nationally important species listed as a UK BAP / SBL priority species and species listed under Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive. Sites which exceed the local authority-level designations but fall short of SSSI selection guidelines, including extensive areas of semi-natural woodland.
County	Council designated sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including local nature reserves selected on defined ecological criteria and Wildlife Trust sites. Viable areas of habitat identified in a local BAP. A regularly occurring, locally significant number of a species identified as important on a county basis. Semi-natural woodland greater than 0.25 ha which is considered to be in 'good condition'.
Local	Nature conservation sites selected on local authority criteria. Other species of conservation concern, including species listed under the local biodiversity action plan (LBAP). Areas of habitat or species considered to appreciably enrich the ecological resource within the local context e.g. species-rich flushes or hedgerows. Areas of semi-natural ancient woodland smaller than 0.25 ha. All other species and habitats that are widespread and common and which are not present in locally, regionally or nationally important numbers or habitats which are considered to be of poor ecological value.
Site	Features of value to the immediate area only.

The next stage of an EcIA is to predict and characterise the likely change and impact on the ecological receptors identified. It is necessary to consider all of the following parameters:

- whether the change is positive or negative;
- the magnitude or severity of the change;
- the extent of the area subject to a predicted impact;
- the duration the impact is expected to last prior to recovery or replacement of the resource or feature;
- whether the impacts are reversible, with recovery through natural or spontaneous regeneration, or through the implementation of mitigation measures or irreversible, when no recovery is possible within a reasonable timescale or there is no intention to reverse the impact; and
- the timing and frequency of the impact, i.e. conflicting with critical seasons or increasing impact through repetition.

The CIEEM Guidelines also stress consideration of the likelihood that 'a change/activity will occur and also the degree of confidence in the assessment of the impact on ecological structure and function'. Likelihood is then specified using the following terms:

- certain (95% probability or higher);
- probable (50-94% probability);
- unlikely (5-49% probability); or
- extremely unlikely (less than 5% probability).

The assessment of likely effects will be undertaken with the inclusion of embedded mitigation for the Proposed Development. Residual effects include any additional mitigation measures required. An assessment will be made of the significance of residual effects, i.e. the significance of the effects that are predicted to remain after the implementation of all committed mitigation measures.

Significance will be assessed solely on an ecological basis. There are two key aspects to this. Firstly, what constitutes a significant ecological effect is determined in relation to the concept of 'integrity'. Integrity is defined as 'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified'. Secondly, it is always stated in relation to a geographical context. Thus, an effect is described as significant at the level at which the integrity of the ecological receptor is affected. An effect may still be significant at some geographical level below that at which the receptor was deemed to be valuable, e.g. loss of common plant species may not affect the integrity of a SSSI valued at a national level, but it may still be a significant effect at the local or site level.

Ornithology

For the purposes of assessment, the significance of effects in relation to ornithology will primarily be expressed within the EIA Report with reference to the regional, national or international scale (as relevant) in line with NatureScot's interests of bird species status at wider spatial levels. The significance of effects at a local scale may also be assessed where sufficient information allows a meaningful assessment.

CIEEM guidelines (2018) do not recommend the sole use of a matrix table as commonly set out in EIA Report chapters to determine 'significant' and 'not significant' effects. For the purposes of this assessment presented herein, the table below sets out adapted CIEEM terminology and equivalent in the context of the EIA Regulations 2017.

'Major' and **'Moderate'** effects are considered significant in the context of the EIA Regulations.

Table 7 Ornithological criteria for significance of effects

Significance	Definition	
Significant	Major Adverse/ Beneficial	A medium or high, medium or long-term adverse or beneficial effect upon the integrity of an ornithological receptor at a National (Scottish) or International level.
	Moderate Adverse/ Beneficial	A high or very high, long-term or permanent adverse or beneficial effect upon the integrity of an ornithological receptor at a Regional (NHZ) level (or suitable alternative) or above.
Not significant	Minor Adverse/ Beneficial	A low or medium, short-term or long-term adverse or beneficial effect upon the integrity of an ornithological receptor at a Regional (NHZ) level (or suitable alternative) or below.
	Negligible/ Beneficial	A negligible or low adverse or beneficial effect upon the integrity of an ornithological receptor, typically at a Site level or below.

The assessment of effects will be undertaken taking into consideration collated field survey information and information available from the desk study. Bird flight activity data will be collated and analysed to assess the potential risk to individual species of conservation concern from collision mortality, following the method described by Band et al. (2007).

In order to assess significance, population information will be collated on relevant regional and national scales, where available. A precautionary approach on the basis of uncertainty, will be adopted throughout the assessment process.

Geology, Hydrology and Peat

The significance of the potential hydrology, hydrogeology, geology and peat impacts will be determined by professional consideration of the sensitivity of the receptor and the magnitude of the potential effect. The criteria for these are included below.

Sensitivity Ratings

Table 8 Sensitivity of receptors

Sensitivity	Definition
Very high	The receptor has very limited ability to absorb change without fundamentally altering its present character, is of very high environmental value and/or is of international importance.
High	The receptor has limited ability to absorb change without significantly altering its present character, is of high environmental value and/or is of national importance.
Moderate	The receptor has moderate capacity to absorb change without significantly altering its present character, has moderate environmental value and/or is of regional importance.
Low	The receptor is tolerant of change without detriment to its present character, is of low environmental value and/or of local importance.

Magnitude ratings

Table 9 Magnitude of change

Magnitude	Definition
Substantial	Substantial changes, over a significant area, to key characteristics or to the geological/hydrogeological/peatland classification or status for more than 2 years.
Moderate	Noticeable but not substantial changes for more than 2 years or substantial changes for more than 6 months but less than 2 years, over a substantial area, to key characteristics or to the geological/hydrogeological/peatland classification or status.
Slight	Noticeable changes for less than 2 years, substantial changes for less than 6 months, or barely discernible changes for any length of time.
Negligible or no change	Any change would be negligible, unnoticeable or there are no predicted changes.

Likelihood ratings

No formal definition, but unlikely, possible and likely are the categories used.

Effects significance matrix

Table 10 Effects significance matrix

Sensitivity	Magnitude	Likelihood	Significance
Very High	Substantial	Likely	Major
		Possible	Major
		Unlikely	Moderate
	Moderate	Likely	Major
		Possible	Moderate
		Unlikely	Moderate
	Slight	Likely	Moderate
		Possible	Minor
		Unlikely	Minor
	Negligible/no change	Likely	Minor
		Possible	Negligible
		Unlikely	Negligible
High	Substantial	Likely	Major
		Possible	Major
		Unlikely	Moderate
	Moderate	Likely	Moderate
		Possible	Moderate
		Unlikely	Minor
	Slight	Likely	Minor
		Possible	Minor
		Unlikely	Minor
	Negligible/no change	Likely	Minor
		Possible	Negligible
		Unlikely	Negligible
Moderate	Substantial	Likely	Major
		Possible	Moderate
		Unlikely	Minor
	Moderate	Likely	Moderate
		Possible	Minor
		Unlikely	Minor
	Slight	Likely	Minor
		Possible	Minor
		Unlikely	Negligible
	Negligible/no change	Likely	Negligible
		Possible	Negligible
		Unlikely	Negligible
Low	Substantial	Likely	Moderate
		Possible	Minor
		Unlikely	Negligible
	Moderate	Likely	Minor
		Possible	Minor
		Unlikely	Minor
	Slight	Likely	Minor
		Possible	Negligible
		Unlikely	Negligible
	Negligible/no change	Likely	Negligible
		Possible	Negligible
		Unlikely	Negligible

Cultural Heritage

Importance of Receptor

The importance of a heritage asset is the overall value assigned to it based on its cultural significance, reflecting its statutory designation or, in the case of non-designated assets, the professional judgement of the assessor.

Table 11 Criteria for assessing the importance of Heritage assets

Sensitivity of Receptor	Criteria
Very High (Assets valued at International level)	World Heritage Sites and other assets of equal international importance, that contribute to international research objectives
High (Assets valued at National level)	Scheduled Monuments, Category A listed buildings, Inventory gardens and designed landscapes, Inventory battlefields, historic marine protected areas, some conservation areas and non-designated assets that meet the relevant criteria for designation in the opinion of the assessor. Category B or C-listed buildings where the existing designation does not adequately reflect their value, in the opinion of the assessor.
Medium (Assets valued at Regional level)	Assets valued at a regional level, e.g. Category B listed buildings, some conservation areas and non-designated assets of similar value in the opinion of the assessor. Category C-listed buildings where the existing designation does not adequately reflect their value, in the opinion of the assessor.
Low (Assets valued at Local level)	Assets valued at a local level, e.g. Category C listed buildings, some conservation areas and non-designated assets of similar value in the opinion of the assessor.

Heritage Assets are defined as "*Features, buildings or places that provide physical evidence of past human activity identified as being of sufficient value to this and future generations to merit consideration in the planning system*" (NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5, p.122). Thus, any feature which does not merit consideration in planning decisions due to its cultural significance may be said to have negligible heritage importance.

Magnitude of Impact

The magnitude of an impact is a measure of the degree to which the cultural significance of a heritage asset will potentially change as a result of the Proposed Development (NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5 Appendix 1, para 42).

Conclusions of the assessed magnitude of impacts is a product of the consideration of the elements of an asset and its setting that contribute to its cultural significance and the degree to which the Proposed Development would change these contributing elements. The assessment therefore reflects the varying degrees of sensitivity of different assets to change brought about by different types of development.

This definition of magnitude and assessment methodology applies to likely effects resulting from change in the setting as well as likely physical effects on the fabric of an asset.

The magnitude of an impact resulting from change within setting is not a direct measure of the visual prominence, scale, proximity or other attributes of the Proposed Development itself, or of the extent to which the setting itself is changed. Moreover, it is necessary to consider whether, and to what extent, the characteristics of the setting which would be changed contribute to the asset's cultural significance (NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5 Appendix 1, paras 42 and 43).

Table 12 Criteria for assessing the significance of Heritage assets

Magnitude of Impact	Criteria
High Beneficial	Preservation of the asset in situ where it would be completely or almost completely lost in the do-nothing scenario.
Medium Beneficial	Changes to key elements of the asset's fabric or setting that result in its cultural significance being preserved, where they would otherwise be lost, or restored.
Low Beneficial	Changes that result in elements of the asset's fabric or setting that detract from its cultural significance being removed.
Negligible / No Impact	Changes to fabric or setting that leave significance unchanged.
Low Adverse	Changes to the elements of the fabric or setting of the heritage asset that contribute to its cultural significance such that this is slightly altered.
Medium Adverse	Changes to the elements of the fabric or setting of the heritage asset that contribute to its cultural significance such that this is substantially altered.
High Adverse	Changes to the fabric or setting of a heritage asset resulting in the complete or near complete loss of its cultural significance, such that it may no longer be considered a heritage asset.

Significance of Effect

The significance of an effect ('EIA significance') on the cultural significance of a heritage asset, resulting from a direct or indirect physical effect or an effect on its setting is assessed by combining the magnitude of the impact and the importance of the heritage asset.

Table 13 Criteria for assessing the significance of effects on heritage assets

	Magnitude of Impact			
Importance of Receptor	**High**	**Medium**	**Low**	**Negligible/ No Impact**
Very High	**Major**	**Major**	**Moderate**	Negligible/ None
High	**Major**	**Moderate**	Minor	Negligible / None
Medium	**Moderate**	Minor	Minor	Negligible/ None
Low	Minor	Minor	Negligible	Negligible/ None

Effect significance conclusions are expressed in the impact assessment as 'Beneficial' or 'Adverse'.

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

Adverse effects are those that detract from or reduce cultural significance or special interest of heritage assets.

Major and Moderate effects are regarded as 'significant' in EIA terms, while **Minor and Negligible** effects are 'not significant'.

In all cases conclusions will also be expressed in terms of the relevant Policy test(s).

Traffic and Transport

Sensitivity

Sensitivity of receptors will be assessed using IEMA Guidelines for the Environmental Assessment of Traffic and Movement (Institute of Environmental Assessment, 2023) and professional judgement. Classification is considered for users based on the characteristics of the roads and locations that may be impacted by traffic related to the Proposed Development. This is summarised in the table below.

Table 14 Criteria for assessing the sensitivity of a receptor/matter

Sensitivity of receptor	Description and Example
High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures. Where a location is a large rural settlement containing a high number of community and public services and facilities.
Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures. Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures. Where a location is a small rural settlement, few community or public facilities or services.
Negligible	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Large Loads and new strategic trunk road junctions capable of accommodating Large Loads. Where a location includes individual dwellings or scattered settlements with no facilities.

Magnitude of Impact

Magnitude of impact is a product of the existing traffic volumes, the percentage increase and change due to the proposed Development, change in the type of traffic and the temporal distribution of that traffic. The following criteria have been developed from the Design Manual for Roads and Bridges, LA 104 – Revision 1, Environmental assessment and monitoring (Highways England et al, 2020) and professional judgement.

Table 15 Criteria for assessing the magnitude of impacts

Magnitude of Impact	Criteria
Major	These impacts are considered to be material in the decision-making process.
Moderate	These impacts may be important but are not likely to be material factors in decision making. The cumulative impacts of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a receptor.
Minor	These impacts may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in improving the subsequent design of the proposed Development.
Negligible	No impacts or those that are imperceptible.

The following thresholds to measure the magnitude of transport related impacts will be used:

Table 16 Magnitude of impacts matrix

	Magnitude of Impact			
Effect	**Negligible**	**Minor**	**Moderate**	**Major**
Driver Delay	< 10% Increase in traffic	Quantitative assessment of road capacity based on existing traffic flows and predicted future levels		
Community Severance & Delay	< 10% Increase in traffic	< 30% Increase in traffic	< 60% Increase in traffic	> 60% Increase in traffic
Accidents & Road Safety	< 10% Increase in traffic	Quantitative assessment of road capacity based on existing traffic flows and predicted future levels		
Vulnerable Road Users	< 10% Increase in traffic	Quantitative assessment of road capacity based on existing traffic flows and predicted future levels		
Wider Disruption due to dangerous loads	0% Increase in traffic	< 30% Increase in traffic	< 60% Increase in traffic	> 60% Increase in traffic
Dust & Dirt	< 10% Increase in traffic	< 30% Increase in traffic	< 60% Increase in traffic	> 60% Increase in traffic

Significance of impacts will be assessed using IEMA Guidelines for the Environmental Assessment of Traffic and Movement (Institute of Environmental Assessment, 2023) and professional judgement on a scale of Major, Moderate, Minor and Negligible. impacts judged to be 'Moderate' or 'Major' are considered significant, with 'Minor' and 'Negligible' effects considered to be not significant. The matrix outlined in Table will be used, developed from the Design Manual for Roads and Bridges, LA 104 – Revision 1, Environmental assessment and monitoring (Highways England et al, 2020).

Table 17 Significance of impact matrix

Sensitivity of receptor	**Magnitude of impact**			
	Negligible	**Minor**	**Moderate**	**Major**
Negligible	Negligible	Negligible	Minor	Minor
Low	Negligible	Minor	Minor	Moderate
Medium	Minor	Minor	Moderate	Major
High	Minor	Moderate	Major	Major

Noise and Vibration

Operational Noise

Scottish Planning Policy requires consideration of potential noise impacts for wind farm developments but provides no specific advice on noise. Planning Advice Note 1/2011: Planning and Noise (PAN1/2011) presents general advice on preventing and limiting the adverse effects of noise without prejudicing economic development for Scotland.

PAN1/2011 provides guidance on how the planning system helps to prevent and limit the adverse effects of noise. This document promotes the principles of good acoustic design and a sensitive approach to the location of new development.

Section 29 discuss noise from wind turbines, stating:

"There are two sources of noise from wind turbines - the mechanical noise from the turbines and the aerodynamic noise from the blades. Mechanical noise is related to engineering design. Aerodynamic noise varies with rotor design and wind speed, and is generally greatest at low speeds. Good acoustical design and siting of turbines is essential to minimise the potential to generate noise. Web based planning advice on renewable technologies for Onshore wind turbines provides advice on 'The Assessment and Rating of Noise from Wind Farms' (ETSU-R-97) published by the former Department of Trade and Industry [DTI] and the findings of the Salford University report into Aerodynamic Modulation of Wind Turbine Noise."

Further documentation from The Scottish Government is provided within the online 'Onshore wind turbines; planning advice' which discusses a variety of documents on the impacts of noise from wind farms and that ETSU-R-97 is still a suitable form of assessment for operational noise from wind farms.

Construction Noise

PAN1/2011 and its accompanying Technical Advice Note make reference in particular to BS 5228-1 for construction noise. It is usually accepted that construction and decommissioning activities are of a temporary nature when assessing their impact. The potential effects due to noise during construction and decommissioning will be undertaken in accordance with the BS 5228-1:2009+A1: 2019. Where predictions of construction noise will reference typical activity emission levels and likely variations in noise levels at surrounding receiver locations.

Annex E of BS 5228-1:2009+A1: 2019 provides guidance on how to assess the significance of construction noise on residential and NSRs, with several assessment methods to determine the significance of construction related impacts.

Section E.3.2 details the 'ABC Method' of determining the potential significance of noise effects based upon noise change. This method requires the quantification of the existing baseline climate and the assessment of construction noise, in isolation, against the existing ambient levels.

To determine the significance of potential noise effect at dwellings, firstly the baseline climate is quantified for the appropriate assessment period (daytime, evening/weekends or night) and rounded to the nearest 5 dB. This is then compared to the measured or predicted noise levels from the Site. If the Site noise level exceeds the appropriate category value, as listed in **Table 18** below, then a potential significance is indicated.

It is considered that if the construction noise level exceeds the appropriate category value (e.g. 65 dB LAeq,T during daytime periods) then a significant effect is deemed to have occurred.

Table 18 Example threshold of significant effect at dwellings

Assessment category and threshold value period (L_{Aeq})	**Threshold value in decibels**		
	Category A [A]	**Category B [B]**	**Category C [C]**
Night-time (23.00 – 07.00)	45	50	55
Evening and weekends [D]	55	60	65
Daytime (07.00 – 19.00) and Sat (07.00 – 13.00)	65	70	75
NOTE 1 A potential significant effect is indicated if the $L_{Aeq, T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level. NOTE 2 If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq, T}$ noise level for the period increases by more than 3 dB due to site noise. NOTE 3 Applied to residential receptors only.			
[A] Category A: Threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values [B] Category B: Threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as the category A values [C] Category C: Threshold values to use when the ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values. [D] 19.00 – 23.00 weekdays, 13.00-22.00 Saturdays and 07.00 – 23.00 Sundays.			

APPENDIX D LIST OF CONSULTEES

Statutory Consultees
The Highland Council
NatureScot
SEPA
Historic Environment Scotland
Internal Scottish Government Advisors
Scottish Forestry
Transport Scotland
Marine Scotland
Non Statutory Consultees
British Horse Society Scotland
BT
Civil Aviation Authority - Airspace
Crown Estate Scotland
Defence Infrastructure Organisation
Fisheries Management Scotland
Highlands and Islands Airport
Kyle of Sutherland District Salmon Fisheries Board
Kyle of Sutherland Fisheries Trust
John Muir Trust
Joint Radio Company
Mountaineering Scotland
NATS Safeguarding
Office for Nuclear Regulation

RSPB Scotland
Scottish Rights of Way and Access Society (ScotWays)
Scottish Water
Scottish Wildlife Trust
Scottish Wild Land Group (SWLG)
Visit Scotland
Woodland Trust
Community Councils
Bettyhill, Strathnaver and Altnaharra
Caithness West
Melvich
Strathy and Armadale
Others
Health and Safety Executive
The Met Office
National Grid
Network Rail
Scottish Fire and Rescue Service
West of Scotland Archaeology Service