Renantis UK Limited

Millennium East Wind Farm

An extension to Millennium Wind Farm

Environmental Impact Assessment Scoping Report

664052

Renantis

RSK

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CONTENTS

TABLES

FIGURES

APPENDICES

ABBREVIATIONS

AEP	Annual Exceedance Probability
AIL	abnormal indivisible load
AIP	Aeronautical Information Publication
AM	amplitude modulation
AWI	Ancient Woodland Inventory
BoCC	Birds of Conservation Concern
BGS	British Geological Survey
BS	British Standard
CAA	Civil Aviation Authority
CAR	Controlled Activities Regulations
CEMP	construction (or contract) environmental management plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CRAA	collision risk analysis area
dB(A)	decibel (A-weighted), a unit of noise measurement
DECC	Department of Environment and Climate Change
DTM	digital terrain model
DWPA	Drinking Water Protected Area
EcIA	ecological impact assessment
ECOW	Environmental Clerk of Works
ECU	Energy Consents Unit of the Scottish Government
EIA	environmental impact assessment
EIAR	environmental impact assessment report
GB	Great Britain
GDL	garden and designed landscapes
GHG	greenhouse gas
GIS	geographic information system
GWDTE	groundwater dependent terrestrial ecosystem
HER	historic environment record
HES	Historic Environment Scotland
HGV	heavy goods vehicle
OBEMP	Outline Biodiversity Enhancement Management Plan
HRSG	Highland Raptor Study Group
HRA	habitats regulations appraisal
IEF	Important Ecological Features

IEMA	Institute of Environmental Management and Assessment
IOF	Important Ornithological Features
ISA	inner study area
JNCC	Joint Nature Conservation Committee
Km	kilometre
LBAP	Local Biodiversity Action Plan
LCA	landscape character area
LCT	landscape character types
LDP	local development plan
LI	Landscape Institute
LiDAR	Light detection and ranging
LLA	Local Landscape Area
LVIA	landscape and visual impact assessment
M	metre
MW	megawatt
NBN	National Biodiversity Network
NCV	Nature Conservation Value
NHZ	nature heritage zone
NPF	National Planning Framework
NRTF	National Road Traffic Forecast
NSA	National Scenic Area
NSR	non statutory register
NVC	national vegetation classification
OIA	ornithological impact assessment
OS	ordnance survey
OSA	outer study area
OWPS	Onshore Wind Policy Statement
PAN	planning advice note
PCH	Potential Collision Height
PRA	Preliminary Roost Assessment
PWS	private water supply
RSPB	Royal Society for the Protection of Birds
RVAA	residential visual amenity assessment
SAC	special area of conservation
SEPA	Scottish Environment Protection Agency
SERAD	Scottish Executive Rural Affairs Department
SG	Supplementary Guidance

SNH	Scottish Natural Heritage (now NatureScot)
SPA	special protection area
SPP	Scottish Planning Policy/Species Protection Plan
SSSI	site of special scientific interest
TCPA	Town and Country Planning (Scotland) Act (1997)
THC	The Highland Council
UK	United Kingdom
VP	vantage point
VSA	Very Sensitive Area
WLA	Wild Land Area
ZoI	Zone of Influence
ZPSF	Zone of Potential Shadow Flicker
ZTV	zone of theoretical visibility

1 INTRODUCTION

1.1 Background

1.1.1 Renantis UK Limited (Renantis) is proposing to develop the proposed Millennium East Wind Farm (the 'Proposed Development'), as an extension to the existing Millennium Wind Farm in the hills north of Invergarry southwest of Fort Augustus and Invermoriston, in the Scottish Highlands.

1.1.2 RSK has been instructed by the Applicant to produce this EIA Scoping Report as part of the written request to the Scottish Government for a 'Scoping Opinion' in respect of an application for consent for the Proposed Development.

1.1.3 It is anticipated that the Proposed Development will comprise up to eight wind turbines, with a blade tip height of up to 200 m, Battery Energy Storage System (BESS) technology, associated infrastructure and ancillary development. The total installed capacity of the Proposed Development is expected to be over 50 MW. The Proposed Development will also introduce appropriate, site-specific measures to conserve, restore, and enhance biodiversity, in accordance with national and local guidance.

1.1.4 **Section 2.4** of this EIA Scoping Report provides a detailed description of the Proposed Development, and a summary of the planning history of the existing Millennium Wind Farm.

1.1.5 As the Proposed Development would be an extension to Millennium Wind farm, an existing scheme with a generating capacity exceeding 50 MW, the application for consent will be made to the Scottish Ministers under Section 36 of the Electricity Act 1989 (as amended) (the 'Electricity Act').

1.2 Terminology

1.2.1 The following terminology has been adopted throughout this Report.

Table 1.1: Site and Study Area Definitions

Term	Definition
Proposed Development	The Proposed Wind Farm, BESS, and ancillary infrastructure.
The Site	This refers to everything within the application red line boundary.
The Study Area	The Site and/or Site Access plus any additional area over which desk based or field assessments have been extended. The study area varies depending on the nature of the potential effects for each environmental parameter, as informed by professional guidance and best practice regarding EIA.
The Developable Area	An area within the red line boundary area defined by the applicant as the area where the turbines and associated infrastructure would be located.

1.3 Requirements of the Legislation

1.3.1 Any proposal to construct or operate a power generation scheme with a capacity in excess of 50 MW requires Scottish Ministers' consent under Section 36 of the Electricity Act 1989.

1.3.2 Under the Electricity Works (Environmental Impact Assessment) (Scotland) (EIA) Regulations 2017 (as amended) (the "EIA Regulations"), the Scottish Ministers are required to consider whether any proposal for a wind farm is likely to have a significant effect on the environment.

1.3.3 While not a statutory requirement, as part of the EIA process, the applicant wishes to seek a formal scoping opinion from the Scottish Government Energy Consents Unit (ECU) on behalf of the Scottish Ministers under the EIA Regulations.

Topics to be addressed in the EIA process

1.3.4 Schedule 4 "Information for Inclusions in Environmental Impact Assessment Reports" section 5 of the EIA Regulations states that EIA reports need to include the following: "A description of the likely significant effects of the development on the environment resulting from, inter alia:

a) the construction and existence of the development, including, where relevant, demolition works.

b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;

c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;

d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);

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;

f) the impact of the development on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the development to climate change;

g) the technologies and the substances used.

1.3.5 These will be addressed within the EIA report in the manner shown in **Table 1.2**.

Table 1.2 Requirements of Schedule 4, section 5 of the EIA Regulations

Requirement	Topic/Section of EIA Report
a) the construction and existence of the development, including, where relevant, demolition works;	Project Description section/chapter
b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;	Land, soil and water: EIA chapter covering Geology, Hydrology, Hydrogeology and Peat Biodiversity: chapters on Ornithology and Ecology.

Requirement	Topic/Section of EIA Report
c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;	Pollution: EIA chapter covering Geology, Hydrology, Hydrogeology and Peat Noise and vibration: EIA chapter on Noise and Vibration. Nuisance, disposal and recovery of waste: Project Description section/chapter
d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);	To be scoped out of the assessment (see Section 5.9 below).
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;	To be addressed in each individual technical chapter of the EIA report.
f) the impact of the development on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the development to climate change;	Climate Change chapter (climate change mitigation)
g) the technologies and the substances used.	Project Description section/chapter

1.4 The Scoping Process

1.4.1 Scoping is undertaken to refine the scope of the assessment of environmental impacts and ensure that it is robust but focused in its approach on potentially significant effects. This will be achieved by inviting the Scottish Ministers and consultees to:

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

1.4.2 Once the scoping opinion has been issued and adopted by the ECU, the responses will be analysed and used to inform the assessment process.

1.5 Document Structure

1.5.1 This document constitutes the Scoping Report and contains the necessary information as required under Part 4 Section 12 of the EIA Regulations. (**Table 1.3**).

Table 1.3: Requirements of Part 4, Section 12(2) of the EIA Regulations

Requirement	Section of Scoping Report
"(a) a description of the location of the development, including a plan sufficient to identify the land;	Section 2
"(b) a brief description of the nature and purpose of the development and of its likely significant effects on the environment; and	Section 2 Section 4
"(c) such other information or representations as the developer may wish to provide or make."	Section 1 Section 3 Section 5

1.5.2 Section 5 of this report details the proposed approach to consultation for the Proposed Development, including the procedure for those wishing to make comments in relation to this scoping exercise. The consultee list containing the statutory and non-statutory stakeholders will be agreed with the ECU during the scoping process and later as part of the application for consent. **Appendix 1** contains the relevant maps and figures referred to in this Scoping Report.

2 PROJECT DESCRIPTION

2.1 Background

2.1.1 This section describes the Proposed Development. A brief description of the Site and surroundings is given followed by a description of the components of the scheme. **Figure 2.1** shows the location and boundary of the area under consideration. It should be noted however, that beyond scoping, the design of the development is iterative and will evolve to take account of constraints and issues raised during scoping, through baseline studies both completed and currently in progress, and through the subsequent assessment of impacts.

2.2 Site Description

2.2.1 The Site is the area within the red line boundary shown on **Figure 2.1**, and is located in in the hills north of Invergarry southwest of Fort Augustus and Invermoriston, the Highland Council area. As shown on **Figure 2.2**, part of the existing Millennium Wind Farm (wind turbines, wind farm access tracks, and other ancillary infrastructure) are located within the Site.

2.2.2 The Site is located approximately:

- 200 m south of River Moriston;
- 2.5 km southwest of Dalchreichar;
- 3.5 km southwest of Glenmoriston;
- 5.2 km west of Fort Augustus;
- 5.3 north of Invergarry;
- 5.5 northwest of Aberchalder; and
- 13 km west of Invermoriston.

2.2.3 The Site sits within broadly undulating upland moorland, gently sloping downwards from southwest to northeast. The elevations of the Site range from 670 m AOD at the mid-western section of the Site (at T01 as shown on the Scoping Layout in **Figure 2.2**), to the Site access junction by A887 at 129 m AOD.

2.2.4 The twenty-six wind turbines of the operational Millennium Wind Farm are arranged in three arrays, at elevations ranging from 460 m AOD to 700 m AOD – see Photographs 2.1 and 2.2 overleaf. Additional information in relation the existing wind farm, and the planning history of the site can be found under **Section 2.3**.

Photograph 2.1: View of the operational Millennium Wind Farm[1]

Photograph 2.2: Alternative view of the operational Millennium Wind Farm[2]

[1] Source: https://www.greatglen.coop/

[2] Source: https://community.renantis.com/2016/05/12/millennium/

2.2.5 Site access is currently gained via a track running southwards through agricultural land and forestry from the A887.

2.2.6 As well as being used for the generation of renewable energy, the Site is currently utilised for livestock grazing, game shooting, and deer stalking. Surrounding land uses include upland grazing and commercial forestry.

2.3 Planning History

2.3.1 The existing Millennium Wind Farm comprises twenty-six 2.5 MW Nordex wind turbines, with an installed capacity of 65 MW, and ancillary infrastructure. The estimated annual generation of the existing wind farm is approximately 157.8 GWh, which is enough to power the equivalent of approximately 36,831 households in Scotland each year[3].

2.3.2 The existing wind farm was consented and built in two different phases, however, for the purposes of this Scoping Report, Millennium Wind Farm and Millennium Wind Farm Extension will both be referred to as the existing 'Millennium Wind Farm'.

Phase 1: Millennium Wind Farm

2.3.3 The Millennium Wind farm (16-turbine scheme) was consented by The Highland Council (THC) in June 2006, under the Town and Country Planning (Scotland) Act 1997 (e-planning portal reference: 03/00505/FULLO)[4].

2.3.4 In January 2008, a further consent was granted by THC, increasing the operating capacity of Millennium Wind Farm with 4 more wind turbines.

Phase 2: Millennium Wind Farm Extension

2.3.5 An extension to the existing scheme by 6 more wind turbines, increasing the combined operating capacity of the scheme to 65MW (National Development) was consented by the Scottish Ministers in August 2009 (Energy Consents Unit [ECU] planning reference: EC00005220) [5].

Consented Millennium South Wind Farm

2.3.6 A planning consent to extend further the existing scheme by 10 wind turbines was granted by the Scottish Ministers in February 2017 (ECU planning reference: ECU00002077[6]). The consented Millennium South Wind Farm, however, was not built and the planning consent expired.

2.4 Project Components

2.4.1 Renantis anticipates the Proposed Development to involve the construction of up to eight new wind turbines, each of a maximum blade tip height of 200 m. The preliminary layout (Scoping Layout) of the new turbines for the Proposed Development is shown in **Figure 2.2**. The design of the Proposed Development will be informed by the EIA

[3] According to the Scottish Government renewable energy conversion calculator: https://www.gov.scot/publications/renewable-and-conversion-calculators/

[4] https://wam.highland.gov.uk/wam/simpleSearchResults.do?action=firstPage

[5] https://www.energyconsents.scot/ApplicationDetails.aspx?cr=EC00005220

[6] https://www.energyconsents.scot/ApplicationDetails.aspx?cr=EC00002077

process, and as such is subject to change. Similarly, the design of the associated infrastructure will depend on the new turbine layout design, and will also be informed by the EIA process and ongoing studies.

2.4.2 The finalised design will also incorporate a suite of peatland restoration and biodiversity enhancements appropriate for the Site and its geographical and habitat context. The enhancements will be contained within an Outline Biodiversity Enhancement Management Plan (OBEMP), or similar plan, to accompany the EIA report

Summary of Key Components

2.4.3 The Proposed Development infrastructure will likely include:

- Wind turbines and associated infrastructure;
- Site entrance, utilising the existing wind farm access track that will require upgrades in sections;
- Internal access road network (new tracks to connect the proposed infrastructure);
- Meteorological mast;
- Borrow pits;
- Transformers and underground cables;
- Onsite sub-station / switchgear building;
- Battery Energy Storage System (BESS) infrastructure, and
- One or more temporary construction compounds.

2.4.4 It is anticipated that the turbines proposed for the Site would have the following characteristics (to be confirmed through EIA):

- Number of turbines: 8;
- Height to blade tip: up to 200 m to tip;
- Rotor diameters: up to 170 m;
- Individual turbine capacity: up to 7 MW; and
- Total generating capacity: to be in excess of 50 MW.

2.4.5 The proposed habitat and biodiversity enhancement measures will likely incorporate;

- Peatland restoration; and
- Native woodland planting.

Wind Turbines

2.4.6 Based on current information, it is anticipated that the Site can accommodate up to eight of the proposed new turbines. The final number of new turbines will be determined by environmental, technical, and commercial constraints identified during the EIA and iterative design process. A maximum blade tip height of 200 m is being considered; however, the final dimensions of each turbine will also be determined as the design progresses.

2.4.7 The detailed design specification for each new foundation would depend on the type of turbine procured, and the specific ground conditions at the location of each turbine.

2.4.8 Options for the removal of the existing wind turbines and associated infrastructure will be considered further during the EIA process.

Meteorological Masts

2.4.9 The scheme will likely include anemometer mast(s) located within the project area to provide ongoing monitoring of the wind conditions after commissioning of the scheme. The selection of the mast will take account of the ease of construction and ability to reduce visual impact. Access to the anemometer mast(s) would likely connect with the main network of site tracks (see below).

Access to Site and Internal Tracks

2.4.10 The existing Millennium Wind Farm access track will be used to gain access to the Site. A new track section will be required to enable access to the proposed new turbines.

2.4.11 The existing track providing access to the operational wind farm will be retained and used as far as practicable. It is anticipated that track sections may require upgrading to facilitate the delivery of wind turbine components on Site. Track upgrades will be included in the iterative design process.

2.4.12 Tracks used by construction vehicles would be retained throughout the lifetime of the wind farm for use by maintenance vehicles. The width of the tracks would be approximately 6 m, although there may be some localised widening and a requirement for passing places and laydown areas. The surface of the tracks will have a cross fall in order to drain run-off into ditches on the downhill side of the track where necessary, and lateral and cross drains will also be installed where required. Drain outlets would be suitably located with erosion protection as required.

Watercourse Crossings

2.4.13 The number of water crossings required for the Proposed Development would be kept to a minimum. Any new crossings would be designed in accordance with Scottish Government best practice and taking due regard of SEPA guidelines to enable the passage of fish and other wildlife. Any upgrades to existing water crossings that are required would also comply with Scottish Government and SEPA best practice.

Grid Connection, Battery Energy Storage and Operations Control Building

2.4.14 Cables from the Proposed Development would be connected to the substation building, which would incorporate the switchgear and metering equipment. In addition to the grid connection equipment, a control and metering room, telecommunications equipment, an office, and welfare facilities for visiting staff would be housed.

2.4.15 The connection of the substation to the wider grid network would be subject to a separate application for consent. Therefore, this will not be considered as part of the EIA for the Proposed Development.

2.4.16 In addition to wind farm operation control and connection for export to the grid network, the potential use of equipment and facilities for the storage of electricity, battery storage infrastructure will be considered during the design process which will be informed by the EIA. Storage may take the form either of housed or containerised arrays of lithium or other batteries, or potentially other non-battery forms of energy storage technology. The maximum power and energy capacity of such storage would be up to 20MW.

Internal Cabling

2.4.17 All power and cabling on Site from and between the wind turbines would be buried in trenches located directly adjacent to the internal tracks.

Stone and Aggregate

2.4.18 The Proposed Development would require crushed stone to construct new tracks, create hard standing areas for the cranes and lay the turbine foundations. Whether the stone and aggregate would be sourced from on-site borrow pits, the hard standings of the existing wind turbines (once the turbines have been removed), delivered to Site from external sources, or a combination of the above, will be confirmed during the design process and EIA phase.

Construction Compounds and Work Areas

2.4.19 During the construction period, one or more construction compounds would be required that would include laydown areas. The main construction Site office and compound would likely comprise temporary cabins to be used for the Site offices, the monitoring of incoming vehicles and welfare facilities for Site staff including toilets; parking for construction staff, visitors, and construction vehicles; secure storage for tools and small parts; a receiving area for incoming vehicles; and security fencing around the compound.

2.4.20 The compounds would be used as a storage area for the various components, fuels and materials required for construction. The major structural components of the turbines would be delivered directly to Site. It is anticipated that temporary lay-down areas would be provided for parking and unloading delivery vehicles and abnormal loads.

Construction Phase

2.4.21 It is estimated that it will take up to 10 months to construct the Proposed Development.

2.4.22 Construction works would 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 track network required to access the new wind turbine positions. These would be used by civil engineering plant and construction equipment;
- 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;
- Installation of equipment and facilities for the storage of electricity;
- Construction of site substation and substation compound;

- Commissioning of site mechanical and electrical equipment;
- Reinstatement and landscaping, removal of temporary site offices, reseeding verges and areas around turbine base;
- Installation of a meteorological mast.

Operational Phase

2.4.23 It is anticipated that the Proposed Development would operate for at least 35 years. During this phase, regular servicing, repair and/or maintenance of Proposed Development components, including access tracks, would take place. Once operational, the wind farm would not be permanently manned.

Lifecycle and Decommissioning

2.4.24 At the end of the operational period the Proposed Development would be decommissioned. This would involve the complete removal of the wind turbines, transformers, substation, switchgear and other equipment over a period of around 12 months. The removal of the wind farm components would essentially be the reverse of the construction process.

2.4.25 The removal of the wind turbines at the end of the operational life of the wind farm would be the reverse of the erection process, involving similar cranes and procedures. The components would be removed off-site to be re-used elsewhere, dismantled and recycled or disposed of as appropriate.

2.4.26 The decommissioning of the turbine foundations would involve removing the upper part of the reinforced concrete foundation. This could be achieved by conventional construction equipment (e.g., excavator mounted pneumatic hammers etc.). All other parts of the foundations would remain in place and no other disturbance of the ground around the turbine would be required.

2.4.27 Once the upstand has been removed, the disturbed area would be reinstated by backfilling with site-derived materials to an agreed method statement, leaving the remaining portion of the foundation approximately 1 m below ground level. Access tracks would either be removed or left in-situ with the agreement of the local planning authority.

3 PLANNING POLICY CONTEXT

3.1 Introduction

3.1.1 This section outlines the renewable energy and planning policy context considered to be relevant to the Proposed Development.

3.1.2 The Proposed Development will have an installed capacity of over 50MW and will share infrastructure with the existing Millennium Wind farm. An application will 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 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 1997 Act, which requires that development must accord with the terms of 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.

3.1.4 The assessment of the Proposed Development against the policy and legislative framework will be undertaken in a standalone Planning Statement which will be separate to the EIA Report.

3.2 Climate Change and Energy Policy

3.2.1 The Scottish Government is legally committed to achieve net zero by 2045. The net zero target for Scotland is set out and defined in the Climate Change (Scotland) Act 2009 as amended by the Climate Change (Emissions Reductions Targets) (Scotland) Act 2019. The Scottish Government also has legally binding interim targets of 75% by 2030 and 90% by 2040 as well as annual targets to meet. The Scottish Greenhouse Gas Statistics 2021 published by the Scottish Government on 20 June 2023 confirmed that the interim target for 2021 was not met.

3.2.2 Both the UK and Scottish Governments have produced energy policy documents which include detail on the renewable energy and greenhouse gas (GHG) emission reduction targets and how they plan to achieve them.

3.2.3 It is considered the most relevant policy, legislative documents and more recent policy statements published by the UK and Scottish Governments include:

- UK Government Energy White Paper (December 2020);
- HM Government British Energy Security Strategy (April 2022);
- HM Government, Powering up Britain, Energy Security Plan (March 2023);
- The Scottish Energy Strategy (December 2017);
- The Scottish Government's declaration of a Climate Emergency (April 2019);
- The Scottish Climate Change Plan Update (2020);
- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 and the legally binding net zero target for 2045 and interim targets for 2030 and 2040;
- Scottish Government, 'Programme for Government' (2023);

- Scottish Government, Onshore Wind Policy Statement (December 2022); and
- Scottish Government, Draft Energy Strategy and Just Transition Plan (January 2023).

3.2.4 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.

3.2.5 It is considered the Proposed Development would make a meaningful contribution towards renewable generation and emission reduction targets.

3.2.6 A comprehensive review of the renewable energy policy framework would be provided in a Planning Statement which would be submitted with the application.

3.3 Development Plan

3.3.1 The statutory Development Plan for the Site includes:

- National Planning Framework 4 (NPF4) adopted 2023.
- The Highland-wide Local Development Plan (HwLDP) adopted 2012.
- The Inner Moray Firth Local Development Plan (IMFLDP) adopted 2015.
- West Highland and Islands Local Development Plan (WestPlan) adopted 2019.
- The Onshore Wind Energy Supplementary Guidance (OWESG) (2016) and its Addendum (2017).

3.3.2 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."*

3.3.3 Therefore, at present, in this instance, the NPF4 would prevail if there is any incompatibility identified between NPF4 and the other elements of the Development Plan.

National Planning Framework 4

3.3.4 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 superseded both National Planning Framework 3 (NPF3) and Scottish Planning Policy (SPP).

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 if Scotland (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 It is considered , that 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;"*

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

Local Development Plan

3.3.13 The statutory Local Development Plans and related guidance applicable to the Site are:

- HwLDP adopted April 2012;
- IMFLDP adopted 2015;
- WestPlan adopted 2019; and
- The OWESG (2016) and its Addendum (2017).

Highland-wide Local Development Plan (HwLDP) 2012

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

3.3.15 The Site falls just within an area of local/regional importance and otherwise is located within the wider countryside. It is understood that the area for local/regional importance relates to areas of woodland to the north and east of the Site.

3.3.16 The following policies in the HwLDP need to be considered in terms of their ongoing relevance to the Proposed Development:

- 28 - Sustainable Design
- 30 - Physical Constraints
- 51 – Trees and Development
- 52 – Principle of Development in Woodland
- 55 - Peat and Soils
- 57 - Natural, Built & Cultural Heritage
- 58 - Protected Species
- 59 - Other Important Species
- 60 - Other Importance Habitats and Article 10 Features
- 61 – Landscape
- 63 - Water Environment
- 64 - Flood Risk
- 66 - Surface Water Drainage
- 67 - Renewable Energy Developments
- 77 - Public Access

3.3.17 Given the HwLDP was adopted prior to the NPF4 and was prepared in the context of now superseded national policy if there is an incompatibility in policy, then the provisions of NPF4 will prevail.

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

3.3.18 The LDP includes Supplementary Guidance for specific planning matters. To provide guidance on onshore wind proposals, The Onshore Wind Energy Supplementary Guidance was adopted in 2016 and its Addendum, adopted in 2017, (OWESG).

IMFLDP

3.3.19 The Site crosses the border of the areas covered by the IMFLDP and the WestPlan. Therefore, both LDPs apply to development at the Site, however again, there are no policies within the IMFLDP document which are relevant to the Proposed Development.

3.3.20 The IMFLDP2 is currently at examination. At this stage, it is considered a material consideration. Once it is adopted, it will replace IMFLDP and form part of the statutory Development Plan.

WestPlan

3.3.21 As described above, WestPlan also covers development at this Site, however, there are no policies within this document which apply to the Proposed Development.

3.4 National Planning Guidance

3.4.1 National planning guidance and advice are relevant considerations to the Proposed Development. Those which are considered to be most applicable to these proposals 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 1/2013 Environmental Impact Assessment (Scottish Government, August 2013);
- PAN 60 Planning for Natural Heritage (Scottish Government, January 2008);
- PAN 69 Planning and Building Standards Advice on Flooding (Scottish Government, August 2004);
- 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).

3.5 Conclusion

3.5.1 The Proposed Development would be a national development which would provide a valuable source of renewable energy at a time when renewable energy targets have not been met and climate change mitigation policy encourages its growth.

3.5.2 The assessment of the Proposed Development against the planning and energy policy framework would be undertaken in a standalone Planning Statement, which will be separate to the EIA Report, and will be submitted with the application.

4 EIA PROCESS AND METHODOLOGY

4.1 Overall Approach

4.1.1 The EIA will be conducted in accordance with the requirements of the EIA Regulations. Part 1 Section 4 (1) states that EIA process consists of:

- the preparation of an Environmental Impact Assessment Report (EIAR) by the developer;
- the carrying out of consultation, publication and notification of the EIAR
- the examination of the EIAR and any other environmental information by the Scottish ministers;
- the reasoned conclusion by the Scottish Ministers on the significant effects of the development on the environment; and
- the integration of the Scottish Ministers' reasoned conclusions into the planning decision notice.

4.1.2 Part 1 Section 4(2) of the EIA Regulations states:

> *"The environmental impact assessment 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) on the factors specified in paragraph (3) and the interaction between those factors :*
>
> *(3) The factors are—*
>
> *a) population and human health;*
>
> *b) biodiversity, and in particular species and habitats protected under Council Directive92/43/EEC on the conservation of natural habits and of wild fauna and flora and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds;*
>
> *c) land, soil, water, air and climate; and*
>
> *d) material assets, cultural heritage and the landscape.*

4.1.3 The following key stages will form the basis of the preparation of the EIAR:

- Consultation - with statutory and non–statutory bodies and relevant stakeholders;
- Baseline - establishing a robust baseline of the existing environment on and around the Site;
- Assessment of Environmental Impacts and their Significance - assessment of the environmental impacts and establishing their significance (primarily the assessment of residual effects once mitigation has been adopted); and
- Development of Mitigation Measures - formulation of mitigation measures to ameliorate the potential impacts of the Proposed Development that cannot practically be avoided through site design.

4.1.4 Where, in the professional opinion of the environmental specialists, particular impacts are not predicted to be significant, it is proposed they are scoped out of further assessment.

The environmental aspects proposed to be scoped out of the EIA process are outlined in Section 5.9.

4.1.5 Following established best practice, it is intended that the design of the Proposed Development will evolve in an iterative manner with the assessment process, led mainly by the consideration of constraints that exist within and around the Site (environmental, technical, and economic). Once the preferred design is selected, this will form the basis of the impact assessment.

4.2 Consultation

4.2.1 Consultations with relevant authorities, organisations and stakeholders will be undertaken throughout the EIA and site design process, commencing with scoping. 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; and
- to ensure appropriate involvement of the public and authorities in the assessment and design process.

4.2.2 To fulfil the applicant's obligations under EIA regulations and S36 of the Electricity Act 1989, the applicant's preferred approach to community consultation is to hold exhibitions and distribute circulars, in addition to the development of a project website. With regards to consultation with other stakeholders and the consenting authority, the applicant will make every effort to accommodate the needs of the stakeholder and comply with current government advice. The distribution of circulars would still be completed by the standard means of post and email. The community consultation approach will be reviewed regularly, and this has been factored into the project programme.

4.2.3 In accordance with the Energy Consents Unit (2022) *Good Practice Guidance for Applications under Section 36 and 37 of the Electricity Act 1989*, the applicant will undertake public consultation and prepare a Pre-Application Consultant (PAC) report to accompany the application for consent.

4.3 Baseline

4.3.1 For each environmental aspect under consideration for the EIA, the environmental baseline of the Site and its surroundings will be established as well as the relevant study or survey area for any particular topic. This will be achieved through consultation with relevant authorities and organisations, a desktop review of available data including that generated from consultation, and completion of specialist field surveys where required. Relevant information and data already held by the applicant gathered during the pre-application feasibility/screening stage will also be used in the EIA process.

4.4 Assessment of Environmental Impacts and their Significance

4.4.1 The baseline assessments provide the foundation for predicting and assessing effects that may result from the Proposed Development. In accordance with the EIA Regulations, potential environmental effects will be evaluated over the whole lifecycle of the Proposed Development including construction, operation and decommissioning, and their significance determined. Evaluation of significance will use specific criteria for each assessment topic. These will follow best practice guidance where available and will consider the following:

- Compatibility with planning policy and environmental standards;
- Impact extent and magnitude;
- Impact nature (whether beneficial or adverse, direct, or indirect, primary, or secondary, permanent, or temporary);
- Importance and sensitivity of the environmental receptor;
- The number of receptors that are impacted;
- Impact duration (whether short, medium, long term and reversible); and
- Whether it is a standalone or cumulative impact.

4.4.2 Each technical assessment will set out the relevant legislation, policy, and guidance together with scope and methodology used to carry out the assessment of potential effects, including the criteria that are used to establish which effects are significant. The methodology will seek to ensure transparency in the assessment. Each technical assessment will set out the criteria for assessing significance. Where a level of significance is attributed to an effect, this will be based on technical guidance and professional judgement informed by the degree of the effect and consideration of the sensitivity of the receptor.

4.4.3 For all environmental aspects, the significance of residual impacts i.e., those predicted once mitigation is taken into account, will form the basis of the assessment. An outline of the proposed methods of assessment for each environmental topic is provided in **Section 5**.

Development of Mitigation Measures

4.4.4 Due to the ‘constraints-led’ iterative design process for the Proposed Development, most mitigation measures are considered likely to be embedded rather than ‘add-on’ measures to ameliorate significant environmental effects. The evolution of the design, therefore, will be reported clearly in the EIAR, including the rationale behind the preferred choice of development design and proposal layout.

4.4.5 All other measures proposed as mitigation for the Proposed Development will be reported within the relevant section of the EIAR. The mechanism by which these measures will be carried through to implementation on Site will also be made clear.

5 EIA SCOPE

5.1.1 This section identifies the environmental aspects that the applicant proposes to address within the EIA for the Proposed Development. It discusses each aspect in terms of a brief summary of the environmental baseline for each (where practical), the relevant potential impacts and an overview of the proposed method of assessment for each. Where relevant, the technical areas will be assessed in the context of a defined study area that is informed by industry guidance, best practice, and likely design of the Proposed Development.

5.1 Landscape and Visual Impact Assessment

Introduction

5.1.1 The Landscape and Visual Impact Assessment (LVIA) will consider direct and indirect effects on landscape resources, landscape character, designated landscapes and wild land. It will examine the nature and extent of effects on existing views and visual amenity. The effects of the Proposed Development, as well as the ancillary infrastructure (access track, masts, transformers etc.) will be assessed during the construction and operational phases of the Proposed Development. The LVIA will also consider cumulative effects i.e. the incremental effects of the Proposed Development in combination with other renewable energy developments.

5.1.2 The LVIA will inform modifications and refinements to the layout design and will be undertaken following the approach set out in Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3). The assessment will also draw upon current good practice guidance issued by NatureScot and the Landscape Institute.

Legislation, Policy and Guidance

5.1.3 There is no legislation that specifically concerns landscape and visual impact assessment.

5.1.4 Relevant policy documents include the following:

- The Highland Council (2012) Highland Wide Local Development Plan,
- The Highland Council (2011): Assessment of Highland Special Landscape Areas.
- The Highland Council (2015): Spatial Planning for Onshore Wind Energy in Highland.

5.1.5 Guidance:

- Forestry Commission (2017) The UK Forestry Standard.
- Landscape Institute (LI) and the Institute for Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA 3).
- Landscape Institute (2019) Technical Guidance Note 6/19 Visual Representation of Development Proposals.
- Landscape Institute (2019) Technical Guidance Note 2/19 Residential Visual Amenity Assessment.
- Landscape Institute (2021) Technical Guidance Note 02/21 Assessing landscape value outside national designations.

- NatureScot (2022) Landscape Sensitivity Assessment Guidance.
- NatureScot (2022) General pre-application and scoping advice for onshore wind farms.
- NatureScot (2021) Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments.
- NatureScot (2020) Assessing impacts on Wild Land Areas - technical guidance.
- Scottish Natural Heritage (2017) Visual Representation of Wind Farms (Version 2.2).
- Scottish Natural Heritage (2017) Siting and Designing Wind Farms in the Landscape. Version 3.
- Scottish Natural Heritage (2015) Spatial Planning for Onshore Wind Turbines – Natural Heritage Considerations.
- Scottish Natural Heritage (2019) National Landscape Character Assessment (Online only).
- Scottish Natural Heritage (2010) The special qualities of the National Scenic Areas (Commissioned Report No.374).
- The Highland Council (2016) Onshore Wind Energy Supplementary Guidance,
- The Highland Council (2017) Onshore Wind Energy Addendum Supplementary Guidance: 'Part 2b'.
- The Highland Council (2016) Visualisation Standards for Wind Energy Developments.

Baseline

Study Area

5.1.6 With reference to the Representation of Wind Farms, Version 2.2 (Scottish Natural Heritage, 2017), based on the preliminary turbine height of up to 200m to blade tip, an initial study area of up to 45 km should be considered for the purposes of establishing a preliminary evaluation of the likely receptors. However, the preliminary ZTV studies (**Figures 5.1.1, 5.1.2** and **5.1.3**) which accompany this Scoping Report, illustrate that visibility would be very limited at distances greater than 20 km, and unlikely to give rise to significant effects (in part due to intervening operational and consented wind farms) and a 20km detailed study area is proposed.

5.1.7 The cumulative effect of the Proposed Development in association with other wind energy developments will also be considered. The search area for cumulative development will extend up to a 30 km radius from the proposed turbines, with a detailed study area of 20 km proposed for the assessment. The assessment will focus upon the cumulative developments which, in association with the Proposed Development, are more likely to result in significant cumulative effects.

Existing Baseline Conditions

5.1.8 The Site location is described in detail in Chapter 2 and lies immediately northeast of Millennium wind farm which comprises of 26 turbines with a tip height of 125 m. In general, the Site occupies an area of upland moorland between sparsely settled glens to the north and south and the Great Glen to the east. The Site is approximately 3.2 km south of the village of Dalchreichart and 6.5 km to the west of Fort Augustus.

5.1.9 The wider landscape is characterised by medium to large sized hills with wide glens and large lochs. Forestry is prevalent on lower slopes particularly to the east and north of the Site. Landcover is mainly heather moorland. As mentioned above, the operational Millennium wind farm is adjacent to the Site. Approximately 1 km to the west of operational Millennium wind farm, operational Beinneun wind farm comprising of 25 turbines 133.5 m in height extends westwards towards the A87. Landform rises sharply in the west of the study area into complex mountain ranges and distinct, rocky ridgelines in the Western Highlands which extend to the coastline and sea lochs. The Great Glen, approximately 5 km to the southeast of the Site is a notable feature marking the Highland boundary fault line and containing the Caledonian Canal, a series of large lochs including Loch Ness, Loch Lochy and Loch Oich. The Great Glen is regularly settled with the main settlements including Fort Augustus and Drumnadrochit, with smaller villages such as Invermoriston, Foyers, Laggan and Invergarry. The larger settlements of Fort William in the south and Inverness in the north are in the 45 km study area although preliminary ZTV studies indicate no or very limited theoretical visibility of the Proposed Development.

5.1.10 Areas in the east of the study area comprise of large tracts of plateau upland such as the Monadhliath mountains, and in the southeast the Ben Alder Forest and Ardverikie Forest areas contain notable massifs and long glens and valleys orientated southwest to northeast. Landcover of forestry, woodland and moorland extend into the Cairngorms National Park approximately 25 km to the southeast. Landform is low in the northeast of the study area around Loch Ness, where large plateau moorland areas occupy areas between wide glens. Operational wind farms occur in the wider landscape with a notable cluster of wind farms to the north of Glen Moriston approximately 11.5 km to the northeast of the Site. On the east side of the Great Glen there are operational wind farms at Stronelairg (20 km to the east), Dunmaglass (30 km northeast) and Farr (41 km northeast).

Landscape Character Context

5.1.11 The Site lies within NatureScot Landscape Character Type (LCT) 220: Rugged Massif - Inverness. The area is described as '*rugged, exposed mountains which cover much of the north-western part of Inverness district, on the north side of the Great Glen*' which '*tends to be divided into distinct hill ranges by the long east-west glens of the Wooded Glen Landscape Character Type'.* the LCT is largely uninhabited, with an interior and high ground that is '*generally remote and thereby challenging to access and there are few signs of human activity or human artefacts. The main land use is extensive deer grazing for sporting purposes.'*

5.1.12 Adjacent character areas include LCT 226: Wooded Glens – Inverness, occupying low, linear sections of land which intersect the host LCT, LCT 225: Broad Steep-Sided Glen which encompasses Fort Augustus and Loch Ness, and LCT 237 Rocky Moorland – Lochaber which is located to the south of the host LCT on steep slopes between upland landforms and the wide glens below.

5.1.13 Existing wind farms are a key influence on character within 5 km of the Site.

Visual Amenity

5.1.14 The Site is located on open moorland with settled wooded glens to the north and south. Visual effects on the adjacent valleys are a key consideration.

5.1.15 Settlements within 10 km in relative proximity to the Site include Dalchreichart and Dundreggan to the north, and Invergarry, Aberchalder, Auchteraw, Invergarry and Fort Augustus to the south and east.

5.1.16 A number of main roads pass within 10 km of the Site, including the A82 to the southeast connecting Invergarry to Fort Augustus, extending northeast to Inverness and southwest to Fort William. The A87 to the south and west which connects Invergarry to Glen Shiel, extending northwest into the Western Highlands. The A887 to the north which connects the A82 at Invergarry to the A87 at Bun Loyne. Several local roads branch further through the study area connecting major routes to more remote areas of the landscape.

5.1.17 The Great Glen Way passes within 5 km of the Proposed Development to the southeast, extending northeast to Inverness and southwest to Fort William.

5.1.18 There is a network of Core Paths mainly between 3 and 8 km to the south and east of the site between Invergarry and Fort Augustus. The nearest Core Path passes within 3 km to the northeast in Inchnacardoch Forest.

Landscape Designations

5.1.19 Glen Affric National Scenic Area (NSA) is the nearest nationally designated landscape approximately 12.6 km to the northwest. Other NSA coinciding with the study area include:

- Glen Strathfarrar NSA 26 km to the north
- Kintail NSA 25 km to the west
- Knoydart NSA 28 km to the west
- Ben Nevis and Glencoe NSA 29.5 km to the south.

5.1.20 The Cairngorms National Park is approximately 25 km southeast of the Site. As shown in **Figure 5.1.1**, there would be very limited visibility of the Proposed Development from this designated landscape.

5.1.21 Locally designated landscapes coinciding with the study area include the following Highland Council Special Landscape Areas (SLA):

- Loch Lochy and Loch Oich SLA 5.6 km to the south
- Loch Ness and Duntelchaig SLA 7.9 km to the east
- Moidart, Morar and Glen Shiel SLA 15.0 km to the east
- Stranconon, Monar and Mullardoch SLA 17.6 km to the north
- Ben Alder, Laggan and Glen Banchor SLA 23.4 km to the southeast.

5.1.22 Wild Land Areas (WLA) in the initial study include:

- Central Highlands WLA 7.2 km to the north
- Braeroy – Glenshirra – Creag Meagaidh WLA 8.5 km to the southeast
- Kinlochburn – Knoydart – Morar WLA 13.2 km to the southwest
- Monadhliath WLA 23.3 km to the east
- Rannoch – Nevis – Mamores – Alder WLA 28.9 km to the south,
- Cairngorms WLA 41.9 km to the southeast, and
- Moidart – Ardgour WLA 42.1 km to the southwest.

Assessment of Environmental Impacts and their Significance

Assessment Methodology

5.1.23 The LVIA will inform modifications and refinements to the layout design and will be undertaken following the approach set out in Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3).

5.1.24 The significance of any identified landscape or visual effect will be assessed as major, major/moderate, moderate, moderate/minor, minor or negligible. Where the effect is classified as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. Where 'Moderate' effects are predicted, professional judgement will be applied to ensure that the potential for significant effects arising has been thoroughly considered.

5.1.25 A summary of the primary judgements is provided below.

Sensitivity

5.1.26 Sensitivity is judged taking into account the component judgments about the value and susceptibility of the receptor as illustrated by **Tables 5.1** and **5.2** below. Where sensitivity is judged to lie between levels, an intermediate assessment will be adopted. A slightly greater weight is given to susceptibility in judging sensitivity of visual receptors as indicated below:

Table 5.1: Landscape Sensitivity

LANDSCAPE RECEPTORS		Susceptibility		
		High	Medium	Low
Value	National	High	High/Medium	Medium
	Regional	High/Medium	Medium	Medium/Low
	Community	Medium	Medium/Low	Low

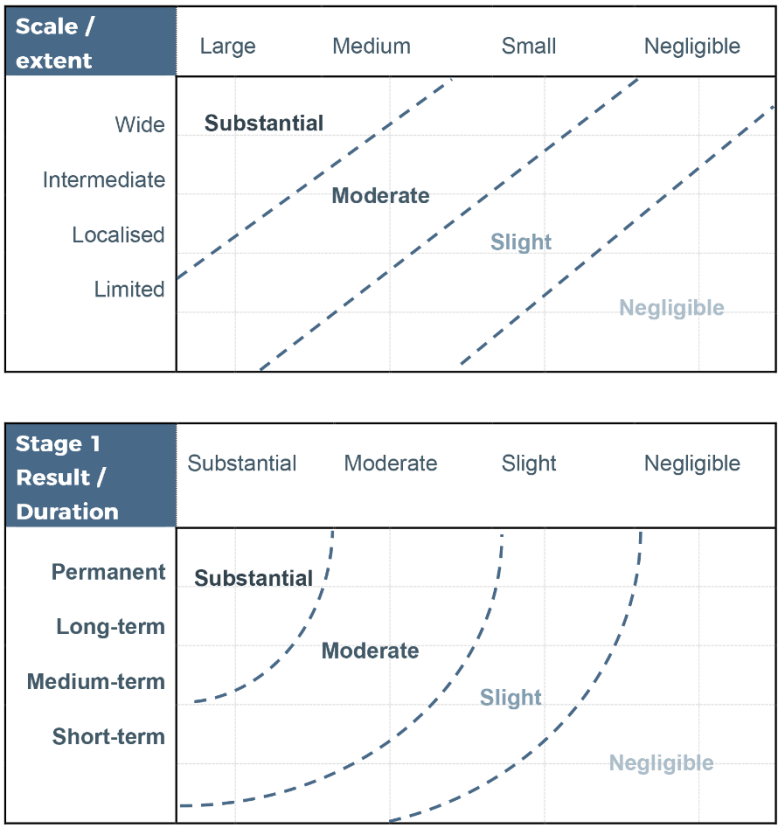
Table 5.2: Visual Sensitivity

VISUAL RECEPTORS		Susceptibility		
		High	Medium	Low
Value	National	High	High/Medium	Medium
	Regional	High/Medium	High/Medium	Medium/Low
	Community	Medium	Medium/Low	Low

Magnitude

5.1.27 Scale of effect is the primary factor in determining magnitude, which may be higher if the effect is particularly widespread and/or long lasting, or lower if it is constrained in geographic extent and/or timescale. **Table 5.3** illustrates how this judgement is considered as a two-step process.

Table 5.3: Visual Sensitivity



5.1.28 Where magnitude is judged to lie between levels, an intermediate assessment will be adopted.

Significance of Effects

5.1.29 The significance of any identified landscape or visual effect is assessed as major, moderate, minor or negligible. These categories are based on the consideration of sensitivity with the predicted magnitude of change. **Table 5.4** is not used as a prescriptive tool and illustrates the typical outcomes, allowing for the exercise of professional judgement. In some instances, a particular parameter may be considered as having a determining effect on the analysis.

Table 5.4: Significance

		Magnitude of Change			
		Substantial	Moderate	Slight	Negligible
Receptor Sensitivity	High	Major	Major/ Moderate	Moderate	Minor
	Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor/ Negligible
	Low	Moderate	Moderate/ Minor	Minor	Negligible

5.1.30 Where the effect has been classified as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. The conclusion that some effects are 'significant' should not be taken to imply that they should warrant refusal in any decision making process.

Beneficial/Adverse

5.1.31 Landscape and visual effects can be beneficial or adverse and, in some instances, may be considered neutral. Neutral effects are those which overall are neither adverse nor positive but may incorporate a combination of both.

5.1.32 Taking a precautionary stance, changes to rural landscapes involving construction of human-made objects of a large scale are generally considered to be adverse.

Landscape Character Assessment

5.1.33 Given the varied information sources available it is proposed that the character areas included within the Scottish Natural Heritage (2019): National Landscape Character Assessment are treated as the landscape character receptors, supplemented with information from survey observations.

5.1.34 In line with national policy, as discussed at 'Baseline conditions' above, it is proposed that the scope of assessment focuses only on those effects likely to be significant. Clear and transparent justification will be provided for those receptors scoped out i.e., non-significant effects.

Visual Assessment

5.1.35 The assessment will be a receptor group-based assessment. The assessment will include potential effects on settlement areas and routes, including roads, railway lines, walking and cycle routes within the detailed study area where potential visibility is indicated by the ZTV (see **Figures 5.1.1** to **5.1.3**).

5.1.36 The assessment will focus on those receptors where there may be the potential for significant effects, which is likely to be those within the detailed study area, though outlying receptors may be selected due to their importance.

Viewpoints

5.1.37 The list of proposed viewpoints is shown on **Table 5.5** with locations shown on **Figures 5.1.1** to **5.1.3**. Some viewpoints, particularly those beyond 20 km, may be illustrated with wireframes only. Grid references are indicative at this stage, viewpoints will be subject to on-field survey verification and may be moved slightly to obtain a clearer or more representative view, whilst remaining as close as possible to the receptor group and location proposed in the viewpoint table.

Visualisations

5.1.38 The assessment will be supported by a series of photomontages and wireframes from agreed viewpoint locations. Visualisations from each viewpoint will be prepared in accordance with SNH guidance Visual Representation of Windfarms: Version 2.2 (2017).

5.1.39 Photomontages will be prepared for viewpoints mainly within a 20 km radius or further if it is necessary to include a notable recognised viewpoint. Ancillary elements such as tracks, sub-station and control buildings will only be shown from close viewpoints where

these will be discernible and have a bearing on the assessment of effects. From more distant viewpoints ancillary elements are likely to be visible as minor elements.

Cumulative Assessment

5.1.40 In line with the EIA regulations and NatureScot guidance Assessing the Cumulative Impact of Onshore Wind Energy Developments (2021) the assessment will consider other wind farms within the detailed LVIA study area including those which are operational, consented and those for which a planning application has been submitted but which are yet to be determined. Schemes that have submitted an EIA Scoping report at the time the LVIA is being written and visualisations produced will be considered in the EIAR if they are located in an area that has potential to alter the level of cumulative impact.

5.1.41 An initial cumulative search will be undertaken for a 30 km study area and all other wind farm developments within this area identified. Turbines under 50 m in height will only be included where they lie within 5 km of the proposed turbines. The proposed scope of the cumulative assessment will focus on likely significant effects which may influence the outcome of the consenting process. It is therefore likely that the cumulative assessment will focus on sites within 20 km of the Proposed Development as these may have more influence on design and potentially may give rise to significant cumulative effects.

5.1.42 Operational and consented sites will form part of the baseline and future baseline respectively for the assessment. Sites in planning will be considered as separate potential cumulative scenarios.

Night-time Assessment

5.1.43 Turbines of 150 m or greater tip height would require visible aviation lighting. An agreed Lighting Strategy will form the basis of the assessment and visual material presented. An assessment of night-time impacts on landscape and visual receptors will be carried out and included in in the LVIA. The proposed study area for night-time effects is 15 km from the turbines. The assessment will be supported by a ZTV study illustrating the extent of visibility of the lights and the number of lights visible. The consideration of night time effects on landscape receptors will be informed by in the field assessment and satellite mapping of existing light levels and the character and special qualities of the landscape receptors at night. Visualisations will consist of wireline diagrams indicating the number of lights likely to be visible and by photomontages from receptor groups most likely to be affected. These are considered to be areas where people are likely be during hours of darkness (typically around settlements) and nearby Dark Sky Parks or Dark Sky Discovery Sites.

5.1.44 Within the 15 km study area, key night receptors include nearby settlements. Wireline diagrams will be prepared from selected viewpoints likely to be sited at night, within 15 km of the turbines and included in the LVIA.

5.1.45 Previous work has established that night photomontages are of limited value in representing effects due to the difficulties of fully representing the brightness of lights on paper / screen. Up to three will be provided representing the most affected receptors in a range of distances and directions. These will be confirmed with consultees once initial assessment work has been completed.

Residential Visual Amenity Assessment

5.1.46 There are no residential properties within 2 km of the Proposed Development. A separate residential visual amenity will not be required

Potential Effects

Construction

5.1.47 Potential construction impacts would be limited to the Site and immediate surrounding area for the duration of the construction phase. Effects may spread slightly as construction nears completion where larger installation equipment would be required. While construction effects would be of short duration there is the potential for localised significant effects and consideration during design.

Operation

5.1.48 Operational Effects will form the basis of the LVIA. Initial studies, analysis and receptor selection is undertaken in line with the operational phase of the Proposed Development.

5.1.49 Desk based studies have been undertaken including a preliminary Zone of Theoretical Visibility (ZTV) to enable the identification and selection of proposed representative viewpoints which assist in assessing effects on receptor groups for the LVIA.

5.1.50 The proposed representative viewpoints are listed in **Table 5.5** and shown on **Figures 5.1.1** to **5.1.3**.

5.1.51 Following scoping and agreement with consultees regarding the final selection of viewpoints, further surveys will be undertaken within the detailed study area and any locations in the wider search area where significant landscape and visual effects may occur.

5.1.52 Viewpoint photography will be undertaken to record the baseline landscape and views towards the Site. A 360 degree sweep of photography will be taken at each viewpoint location.

Table 5.5: Proposed viewpoint locations

VP	Location	OS Grid Reference		Distance/ Direction	Receptors
1	Core Path at Allt Phocaichain	232587 E	810962 N	3.2 km NE	Core Path users between Fort Augustus and Dalchreichart
2	Dalchreichart	230079 E	812802 N	3.7 km N	Settlement, road users
3	Caledonian Canal/Great Glen Way	234107 E	804676 N	4.7 km SE	Walkers on the Caledonian Canal / Great Glen Way
4	Core Path at Loch Lundie	229695 E	803184 N	5.0 km S	Core Path users above Invergarry
5	Ceannacroc	222784 E	811336 N	5.2 km NW	Settlement, road users

VP	Location	OS Grid Reference		Distance/ Direction	Receptors
6	A82 at Aberchalder	234490 E	803822 N	5.7 km SE	Settlement, road users,
7	A887 at Dundreggan	232479 E	814302 N	5.8 km NE	Settlement, road users,
8	Core Path at Creag An Larlain	236605 E	810479 N	6.2 km E	Core Path users above Fort Augustus
9	A82 at Fort Augustus	237412 E	808413 N	6.6 km E	Settlement, road users, core path users, pedestrians
10	Caledonian Canal boat lift	237606 E	809137 N	6.9 km E	Walkers on the Caledonian Canal / Great Glen Way, visitors to Fort Augustus, pedestrians
11	Loch Oich	232715 E	801435 N	6.9 km S	Walkers on the Caledonian Canal / Great Glen Way, SLA
12	Core Path at Meall Ruigh Uisdein	229085 E	817365 N	7.9 km N	Core Path users
13	NCN 78 east of Fort Augustus	239591 E	808857 N	8.8 km E	Road users, cyclists on NCN 78, SLA
14	Meallan Odhar	221157 E	817283 N	10.5 km NW	Walkers, SLA
15	A887 at Loch Cluanie	215404 E	810440 N	12.0 km W	Road users, SLA
16	Corrieyairack Pass	240385 E	799376 N	12.9 km SE	Walkers
17	Meall Coire nan Saobhaidh	217469 E	795120 N	16.8 km SE	Walkers
18	Toll Creagach	219447 E	828272 N	21.0 km NE	Hillwalkers, NSA, SLA
19	Creag Meagaidh	241837 E	787551 N	23.3 km SE	Hillwalkers, SLA
20	Core Path west of Wester Aberchalder	255031 E	819816 N	26 km NE	Core Path users

Decommissioning

5.1.53 Effects during decommissioning would be similar to that of the construction phase.

Receptors Scoped In

5.1.54 **Table 5.6** presents the receptors it is proposed to scope into the LVIA.

Table 5.6: Receptors Scoped In

Receptor/Element	Phase	Justification
Landscape Character Types	Construction and Operation	Potential for significant effects on landscape character. Significant effects on landscape character beyond the 20 km detailed study area are unlikely. However, as a starting point all LCT in the initial study area will be considered in the LVIA in a proportionate manner.
Loch Ness and Duntelchaig SLA	Construction and Operation	Potential for significant effects on special qualities of the SLA.
Loch Lochy and Loch Oich SLA	Construction and Operation	Potential for significant effects on special qualities of the SLA.
Fort Augustus	Construction and Operation	Potential for significant effects on visual amenity of road users in the surrounding area
Glen Morriston including Dalchreichart, Dundreggan and dispersed settlement	Construction and Operation	Potential for significant effects on visual amenity of road users and settlements in the glen.
Great Glen Way between Laggan and Fort Augustus	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
Core Paths between Fort Augustus, Invergarry and Glen Morriston	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
A82 between Invergarry and Fort Augustus	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
A87 between the A887 and Loch Cluanie	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
A877 in Glen Morriston	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
B862 east of Fort Augustus	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape

Receptor/Element	Phase	Justification
NCN 78	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape

Matters Scoped Out

5.1.55 On the basis of the work undertaken to date, the national policy context, the professional judgement of the assessment team and experience from similar projects and consultation responses, it is proposed that receptors listed in **Table 5.6** can be scoped out.

Table 5.7: Matters scoped out of the LVIA

Receptor/Element	Phase	Justification
National Scenic Areas	Construction and Operation	As shown on **Figure 5.1.1** theoretical visibility from NSA is very limited. More The ZTV indicates theoretical visibility mainly from the nearest NSA, Glen Affric NSA and mainly from a range of Munros along its northern boundary at distance of 19 km. At these distances significant effects on Special Qualities are unlikely therefore a detailed assessment is not required. An initial assessment of Glen Affric NSA will be undertaken.
Cairngorms National Park	Construction and Operation	As illustrated in **Figure 5.1.1** there would be only very limited long distance visibility form areas within the National Park and an assessment of effects on Special Qualities is not required.
Wild Land Areas	Construction and Operation	As illustrated in **Figure 5.1.1**there are seven Wild Land Areas within the initial 45 km study area. The Proposed Development is not located in any of the WLA. NPF4 advises that the effects of development outside Wild Land Areas is not a significant consideration. A Wild Land assessment is therefore not required for any of the seven WLA.
Stranconon, Monar and Mullardoch SLA	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from the SLA and as such effects are scoped out.
Moidart, Morar and Glen Shiel SLA	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from the SLA and as such effects are scoped out.

Receptor/Element	Phase	Justification
Ben Alder, Laggan and Glen Banchor SLA	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from the SLA and as such effects are scoped out.
Invergarry	Construction and Operation	As illustrated in **Figure 5.1.3** there would be limited visibility from the settlement and as such effects are scoped out.
Laggan	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from the settlement and as such effects are scoped out.
Invermorriston	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from the settlement and as such effects are scoped out.
A87	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from this route between Invergarry and the B887 at Glen Morriston.
The Great Glen Way between Fort Augustus and Drumnadrochit	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from this section of the route.
Core Paths at from Glen Urqhart to Glen Affric including the Affric – Kintail Way	Construction and Operation	As illustrated in **Figure 5.1.3** there would be no visibility from these routes.
Cumulative – small developments	Operation	Turbines below 50 m beyond 5km are scoped out of the assessment.
Cumulative – small developments	Operation	Single turbines of any size beyond 10km of the Proposed Development are scoped out of the assessment.

Questions for Consultees

- Can it be confirmed that a 20 km study area for the LVIA is considered to be appropriate?
- Are the proposed viewpoint locations considered to be suitable for the LVIA?
- Can it be confirmed that the approach to presentation of visualisations is appropriate?
- Can it be confirmed that an assessment of the effects on Special Qualities of the Cairngorms National Park is not required?
- Can it be confirmed that a detailed assessment of Glen Affric NSA is not required?
- Can it be confirmed that SLAs other than Loch Ness and Duntelchaig, and Loch Lochy and Loch Oich can be scoped out of the assessment?
- Can it be confirmed that Wild Land Assessment is not required?

- Can it be confirmed that a 30 km area of search is appropriate for cumulative assessment?
- Can it be confirmed that the omission of turbines under 50 m beyond 5km and single turbines of any size beyond 10 km from the cumulative assessment is appropriate?

5.2 Ecology

Introduction

5.2.1 The Ecology chapter of the EIA Report (EIAR) will assess the potential effects of the Proposed Development on important ecological features and will detail proposed mitigation and/or compensation measures required to avoid, minimise, restore or offset adverse effects and demonstrate biodiversity gains.

5.2.2 Important ecological features that will be considered within the EIAR will include:

- relevant statutory designated sites, and their cited qualifying interests, such as Sites of Special Scientific Interest (SSSIs), Special Area of Conservation (SACs), Ramsar sites and National Nature Reserves (NNRs);
- internationally, or nationally, important habitats (e.g., habitats listed on Annex I of European Commission (EC) Habitats Directive), habitats of principal importance for biodiversity conservation in Scotland (Scottish Biodiversity List); and,
- populations of ecological species listed on Annex IV of the EC Habitats Directive or Schedule 5 of the Wildlife & Countryside Act 1981 (as amended), or which are scarce, or a priority for conservation under the UK Biodiversity Action Plan (BAP) and/or Scottish Biodiversity List (SBL).

5.2.3 This section of the EIA Scoping Report details the approach to baseline ecological information gathering and proposed approach to assessment, in accordance with current best practice guidance.

5.2.4 The 'Site' referred to herein comprises everything within the scoping boundary (shown on **Figure 5.2.1** as the Site). Note, for ecology surveys, study areas do not correspond with the Site boundary, this is defined in **Sections 5.2.26 and 5.2.27** and shown on **Figure 5.2.1**.

Legislation, Policy and Guidance

5.2.5 In the preparation of the Ecology Chapter of the EIAR, reference will be made to the key pieces of legislation, policy and guidance detailed below.

5.2.6 Legislation:

- Conservation (Natural Habitats, &c.) Regulations 1994, as amended in Scotland by the Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019 (collectively 'the Habitats Regulations');
- the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations);
- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive);
- the Wildlife and Countryside Act 1981 (as amended in Scotland);
- the Wildlife and Natural Environment (Scotland) Act 2011;
- the Nature Conservation (Scotland) Act 2004; and,

- the Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003.

5.2.7 Copies of all UK and Scottish Government legislation, including original, as enacted, and revised versions, are available from the National Archives at https://www.legislation.gov.uk.

5.2.8 Policy:

- Scottish Government (2022) Onshore Wind Policy Statement;
- Scottish Government (2022) The Scottish Biodiversity Strategy to 2045;
- Scottish Government (2023) National Planning Framework 4 (NPF4);
- Scottish Government (2008) Scottish Government Planning Advice Note 60: Planning for Natural Heritage 2008; and,
- The Highland Council (2019) West Highland and Islands Local Development Plan.

5.2.9 Guidance:

- Chanin P (2003) Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10. English Nature, Peterborough;
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester;
- Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London;
- Cresswell, W. J., Birks, J. D. S., Dean, M., Pacheco, M., Trewhella, W. J., Wells, D. and Wray, S. (2012) UK BAP Mammals Interim Guidance for Survey Methodologies, Impact Assessment and Mitigations. The Mammal Society, Southampton;
- The Highland Council (2003) The Skye & Lochalsh Biodiversity Action Plan;
- JNCC (2010) Handbook for Phase 1 habitat survey – a technique for environmental audit: Revised Re-print. Joint Nature Conservation Committee, Peterborough;
- NatureScot (2012) Assessing the Cumulative Impact of Onshore Wind Energy Developments. Scottish Natural Heritage, Inverness;
- NatureScot (2016) 'Planning for development: What to consider and include in Habitat Management Plans';
- NatureScot (2021) Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation. Prepared jointly by Scottish Natural Heritage, Natural England, Natural Resources Wales, RenewableUK, ScottishPower Renewables, Ecotricity Ltd, the University of Exeter and the Bat Conservation Trust (BCT) with input from other key stakeholders;
- NatureScot (2023a) 'NatureScot pre-application guidance for onshore wind farms';
- NatureScot (2023b) 'Advising on peatlands, carbon-rich soils and priority habitats in development management';
- NatureScot (2023c) Standard Advice for Planning Consultants: Protected Species. Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species;
- Rodwell, J.S. (2006) National Vegetation Classification: Users' Handbook. Joint Nature Conservation Committee, Peterborough;

- Rodwell, J. S., (1991, 1992, 1998, 2000) British Plant Communities. Vol 1-5. JNCC, Cambridge;
- Scottish Government (2020) The Scottish Biodiversity List (SBL);
- Scottish Renewables *et al*. (2019) 'Good Practice During Wind Farm Construction (Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland Science and AECoW 2019);
- SEPA (2017) Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Windfarm Development Proposals on Groundwater Abstractions; and, Groundwater Dependent Terrestrial Ecosytems. Scottish Environment Protection Agency;
- SEPA (2017) Land Use Planning System Guidance Note 4: Planning Guidance on On-shore Windfarm Developments. Scottish Environment Protection Agency; and,
- SFCC (2007). Habitat Surveys Training Course Manual. Scottish Fisheries Co-ordination Centre, Pitlochry.

Initial Consultation

5.2.10 Informal consultation regarding the scope of the proposed survey work was undertaken with NatureScot in October 2021. The consultation letter outlined the proposed approach to baseline ecological and ornithological information gathering, and set out the target species identified for the Site, and requested comments or advice regarding same.

5.2.11 NatureScot responded by email on 25th November 2021 and provided the following (summarised) comments in respect to Ecology:

- NVC survey is recommended on any areas of Annex 1 habitat and any application would be advised to include the results of site-specific peat and vegetation surveys carried out across the proposed development site (including access, borrow pits and other infrastructure) plus an appropriate buffer.
- It is advised that any future application includes mapped information on peatland habitats[7] (including continuous blanket bog units over 25ha in extent which will be affected, including the frequency of drains/peat cutting/areas of bare peat) to NVC level together with a detailed description of current condition e.g. identifying the presence of plant species indicating peat formation capabilities or a lack of disturbance, any nationally rare or scarce species, any montane (alpine) features in the vegetation, and the presence of any invasion by woodland/scrub.
- It was noted that specific wildcat surveys are not going to be undertaken as the site is outside a priority area, and recommended that the need for a wildcat survey is assessed in accordance with NatureScot standing advice (NatureScot 2023c) and survey guidance[8].
- It was noted that watercourses in the north of the site drain towards the River Moriston SAC, and it was requested that the proposed approach to fisheries was clarified.

5.2.12 Results of NVC surveys from within an appropriate buffer of infrastructure will be included in the EIAR, including discussion of the condition of the bog habitats recorded, assessment of any losses, and opportunities for restoration. Classification of and

[7] Note that specific advice provided in relation to peatland was provided but is not covered here, where considered to be contained within the scope of the peatland assessment.

[8] https://www.nature.scot/doc/standing-advice-planning-consultations-wildcats and the further detail on assessing the need for a survey at: https://www.nature.scot/sites/default/files/2018-04/Guidance-Wildcat-Survey-Methods.pdf

assessment of impacts to peatland, including physical factors affecting baseline condition such as drainage, will be covered in the EIA Report under the Hydrology, Geology, Hydrogeology and Peat chapter, and cross referred to in the Ecology chapter as appropriate.

5.2.13 The approach to surveys for wildcat and fish are described further within this Scoping section.

Baseline

5.2.14 Baseline ecological conditions to inform the design and assessment of the Proposed Development will be established through desk study and field surveys, and which commenced in May 2022.

5.2.15 A summary of baseline conditions established to date is presented within this section. Full details of survey methodologies, effort and findings will be provided within the Ecology Chapter of the EIA Report.

Study Area

5.2.16 The scoping Site boundary and turbine layout presented herein (the 'Proposed Development') have been determined following the completion of walkover surveys in 2023.

5.2.17 Study areas adopted for baseline ecological surveys have been based upon preliminary development boundaries, and are shown on **Figure 5.2.1**, in relation to the Proposed Development. Survey areas are buffers of the study area as appropriate for specific survey and species methodologies, and in accordance with relevant guidance.

5.2.18 Study areas adopted have been updated over the course of the survey to account for changes in scheme design, as detailed herein. Details of study areas and survey are given in each of the specific survey methods sections below. Survey coverage will be updated prior to assessment, where necessary, to ensure sufficient data collection in accordance with NatureScot guidance, to inform infrastructure design, and to update the baseline prior to assessment.

Desk Study

5.2.19 The following key sources will be reviewed and consulted for existing information on designated sites for nature conservation and ecological records within the Site and surrounding area:

- NatureScot Sitelink;
- Scotland's Environment Web;
- Multi-Agency Geographic Information for the Countryside (MAGIC);
- Highland Biodiversity Recording Group (HBRG); and,
- EIARs and associated documentation for nearby wind developments.

5.2.20 A review will also be carried out of the existing ecological information for the Site derived from baseline ecological information gathered in relation to the previously consented Millennium South Wind Farm (THC Ref: 14/02055/S36) onsite, and operational wind farms close to the Site, including Millennium and Beinneun wind farms.

5.2.21 Full details of key sources reviewed, consultations undertaken, and information obtained will be provided within the EIAR.

Designated Sites for Nature Conservation

5.2.22 The Site does not form part of any statutory designated site for nature conservation with cited ecological interest. Those statutory designated sites with ecological interest are presented in **Table 5.8** and shown on **Figure 5.2.2**.

Table 5.8: Statutory designated sites with ecological interest

Designated Site	Distance / Orientation	Qualifying Interests
European Sites		
River Moriston SAC	0.07 km, north	• Atlantic salmon *Salmo salar*; and, • Freshwater pearl mussel *Margaritifera margaritifera*.
Ness Woods SAC	7.42 km, east	• Otter *Lutra lutra*; • Western acidic oak woodland; and, • Mixed woodland on base-rich soils associated with rocky slopes.
Strathglass SAC	8.58 km, north-west	• Alpine and subalpine heaths; • Blanket bog; • Bog woodland; • Plants in crevices on base-rich rocks; • Caledonian forest; • Dry heaths; • Tall herb communities; • Otter; • Wet heathland with cross-leaved heath *Erica tetralix*; • Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; • Montane acid grasslands; • Plants in crevices on acid rocks; • Acidic scree; and, • Mountain willow scrub.
Nationally Designated Sites		
Garry Falls SSSI	4.83 km, south	• Upland mixed ash woodland; and, • Bryophyte assemblage.
Glen Tarff SSSI	5.52 km, south-east	• Upland mixed ash woodland; and, • Beetle *Bolitophagus reticulatus*.
Easter Ness Forest SSSI	7.42 km, east	• Upland oak woodland; and, • Upland mixed ash woodland.
South Laggan Fen SSSI	8.05 km, south	• Transition open fen.
Glen Affric SSSI	8.58 km, north-west	• Native pinewood; • Lichen assemblage; and, • Dragonfly assemblage.
Levishie Wood SSSI	9.75 km, north-east	• Upland birch woodland.

Survey Methodology

5.2.23 The following field surveys have been undertaken to provide detailed information pertaining to the presence and distribution of ecological features within the Site and surrounding area, which may be affected by the Proposed Development:

- Phase 1 habitat survey;
- National Vegetation Classification (NVC) survey;
- Terrestrial mammal surveys;
- Bat activity surveys;
- Bat preliminary roost assessment survey; and,
- Fish habitat survey.

5.2.24 All surveys have been undertaken by suitably competent and qualified ecologists in accordance with industry standard guidance. Full details of survey methodologies will be presented within the EIAR.

5.2.25 Where required field surveys will be updated prior to assessment in responses to changes in the design of the Proposed Development, to comply with relevant current guidance (NatureScot, 2023a).

Habitats and Vegetation

5.2.26 Surveys have been undertaken following standard survey guidance for Phase 1 habitat (JNCC, 2010) and NVC survey (Rodwell, 2006), in September 2022. The study area for the habitat surveys was the preliminary development area boundary which was known at the time, (the '2022 Study Area; see **Figure 5.2.1**) with survey coverage comprising the study area plus a 250 m buffer in accordance with NatureScot (2023a) and SEPA (2014) guidance.

5.2.27 In autumn 2022 the preliminary development area boundary was amended, and extended to the north (the '2023 Study Area'; see **Figure 5.2.1**). Further habitat surveys were carried out in August 2023 to collect survey information for these additional areas.

5.2.28 The scoping Site boundary, determined following the completion of walkover surveys in 2023, extends to the northwest to incorporate a potential access route and includes areas outwith the 2022 and 2023 study areas. Survey coverage will be updated prior to assessment to ensure sufficient data collection in accordance with NatureScot (2023a) guidance and SEPA (2017) guidance, to inform infrastructure design, update the baseline prior to assessment, and to inform the assessment of potential impacts upon Groundwater Dependent Terrestrial Ecosystems (GWDTEs) and subsequent hydrological assessment.

5.2.29 The purpose of the surveys was to identify vegetation communities of notable importance, including potential habitats listed on Annex 1 of the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e., Habitats Directive) and as Scottish Biodiversity List (SBL) priority habitats.

5.2.30 Surveys have been undertaken at appropriate times of year, relevant to the nature of the predominant habitat types recorded. Full details of survey methodologies and survey results will be provided within the EIAR.

5.2.31 In summary, the study area largely comprises blanket bog, which typically forms mosaics with wet heath, and there are smaller areas of heath and acid grassland in the north and west.

5.2.32 Several fast flowing streams and burns of peat-stained water drain across the Site, and there four small lochs scattered across the study area.

Terrestrial mammals

5.2.33 Terrestrial mammal walkover surveys of the 2022 Study Area were undertaken in August 2022 and of the 2023 Study Area in September 2023 (see **Figure 5.2.1**) by suitably competent ecologists, following industry standard guidance and species-specific survey methodologies applicable at the time of survey.

5.2.34 In consultation with NatureScot in October 2021 it was agreed that targeted surveys for pine marten and red squirrel were not required on the basis that no forestry would be directly impacted by the Proposed Development works. Furthermore, the requirement for targeted wildcat surveys was excluded on the basis that the Site is not within any wildcat priority area (the nearest is Strathpeffer, *c*. 40 km north), and the typical unsuitability of habitats present within the study areas (open bog/heath, with no forestry/scrub). However, signs of (and habitat suitable for) these species were searched for during the course of other walkover surveys carried out within the areas surveyed in 2022 and 2023.

5.2.35 Terrestrial mammal surveys sought to identify the presence and distribution of field signs confirming or indicating the potential presence of otter, water vole and badger.

5.2.36 The survey area comprised the 2022 study area plus a 250 m buffer in 2022, and the 2023 study area and adjoining watercourses, plus a 250 m buffer, in 2023, and thus survey coverage included study areas plus a maximum 250 m buffer in accordance with NatureScot guidance (2023c).

5.2.37 In summary, surveys undertaken recorded evidence of the presence of otter, in the form of spraint, along Allt Phocaichain in the north-east of the study area, and suitable otter habitat was noted on this watercourse where it enters the forestry to the north of the study area. No potential breeding or resting sites were identified.

5.2.38 No evidence of water vole or badger was identified. Given the lack of areas of woodland within the study area, it is considered that regular use of the areas of the Site in which turbines will be located by badger, other than for occasional foraging or commuting, is unlikely. No evidence of, or habitat suitable for, water vole was recorded in the survey area and watercourses draining the study area are considered typically sub-optimal for this species, comprising predominantly shallow fast flows.

5.2.39 Evidence of the presence of mountain hare was also found throughout the study area.

5.2.40 No evidence of pine marten or wildcat, or of habitat suitable for dens for these species, was recorded in the survey areas, and so further detailed species-specific surveys for these species was not undertaken.

5.2.41 The scoping Site boundary, determined following the completion of walkover surveys in 2023, includes areas outwith the 2022 and 2023 study areas (**Figure 5.2.1**). Survey coverage will be updated prior to assessment as appropriate, to ensure sufficient data collection in accordance with NatureScot guidance (NatureScot 2023c), to inform infrastructure design, update the baseline prior to assessment.

5.2.42 Full details of survey methodologies and survey results will be provided within the EIAR.

Bats

5.2.43 Surveys to establish the bat species assemblage using the Site and the spatial and temporal distribution of activity were undertaken in 2022 and 2023, in line with current guidance applicable at the time (NatureScot, 2021).

Bat Activity Surveys

5.2.44 Bat activity surveys were undertaken in 2022 and 2023, adopting survey effort appropriate for a six-turbine scheme as proposed at the time surveys commenced, in accordance with NatureScot guidance (2021).

5.2.45 Six ground-level static detectors were deployed to record bat activity within the study area, for a period of at least 10 nights in spring and summer 2022 and in autumn 2023, during suitable weather conditions. In the absence of precise turbine locations being known, detectors were placed in a representative sample of locations/habitats within the main area of interest for turbine placement, as per NatureScot guidance (2021).

5.2.46 All bat activity data will be analysed through Kaleidoscope (Wildlife Acoustics) software and manually checked by an experienced ecologist. NatureScot guidance (2021) requires that all sonogram data obtained from activity surveys be uploaded to the online *Ecobat* tool in order to quantify bat activity in the context of a defined reference range, with the *Ecobat* output used to assess the likelihood for significant effects to bat species arising as a result of the Proposed Development.

5.2.47 It is understood that the *Ecobat* tool is currently offline for maintenance, and it is unknown when the tool will be available again. Analysis and subsequent assessment will therefore follow current guidance (NatureScot, 2021) subject to the availability of the *Ecobat* tool and/or an alternative approach will be provided to NatureScot for comment and further advice.

5.2.48 Any deviations from standard survey and assessment guidance will be acknowledged and discussed in the EIAR.

Bat Roost Surveys

5.2.49 A Preliminary Roost Assessment (PRA) was undertaken in September 2022 and August 2023 as part of the extended Phase 1 Habitat survey, comprising a daytime ground-level inspection of trees (and any other features, e.g., buildings) within the study area for features with potential to support bat roosts in accordance with the NatureScot (2021) guidance. No features were noted to offer roosting potential. The scoping Site boundary, determined following the completion of walkover surveys in 2023, includes areas outwith the 2022 and 2023 study areas. Survey coverage will be updated prior to assessment as appropriate, to ensure sufficient data collection in accordance with NatureScot guidance (NatureScot 2023c), to inform infrastructure design, update the baseline prior to assessment.

Fisheries

5.2.50 A fish habitat survey was carried out in September/October 2023, to identify any areas of critical fish habitat (i.e., spawning, nursery areas, juvenile and adult holding areas) within the watercourses within the study area and out to a buffer of 100 m. The survey was

undertaken by a suitably qualified ecologist, in normal flow conditions, following the Scottish Fisheries Co-ordination Centre (SFCC) industry standard guidance (SFCC, 2007).

5.2.51 Desk study sources will also be consulted to identify the known status of watercourses within the study area, any known barriers to fish migration and the known distribution of fish within the relevant catchment area.

5.2.52 Full details of fish habitat survey methodology, watercourses surveyed and desk study findings will be provided as a technical appendix to the EIAR.

5.2.53 Good practice scheme design and embedded mitigation measures, including a fish monitoring plan and measures to avoid and/or minimise the potential for pollutant impacts upon aquatic habitats and ensure the free passage of fish within the Site is maintained, will be built into the Proposed Development. Providing the implementation of these measures, to be agreed in consultation with NatureScot and other primary interest groups, it is considered that there is no route to impact on solely aquatic features and so a baseline assessment of effects upon fisheries is not required as part of the EIAR.

5.2.54 Note, although such effects on fisheries is proposed to be scoped out of assessment, an information to inform HRA in relation to the adjacent River Moriston SAC, which has Atlantic salmon and freshwater pearl mussel as qualifying features, will be included within the EIAR.

Additional Species

5.2.55 In accordance with current guidance (NatureScot, 2023a) there are some species groups which, providing the implementation of suitable mitigation measures, are unlikely to be subject to significant effects as a result of wind farm developments. As such, they do not require surveys to inform an EIA. This includes invertebrates, reptiles and amphibians (but excludes additional European Protected Species).

Assessment of Environmental Impacts and their Significance

5.2.56 The assessment within the Ecology Chapter of the EIAR will be undertaken in accordance with CIEEM guidelines (2018), and using professional judgement based on the best available evidence. Where gaps in, or limitations to, available data exist these will be acknowledged, and a precautionary approach adopted as appropriate.

Potential Impacts

5.2.57 The assessment will consider the following main impacts on potentially important ecological features as a result of the construction, operation and decommissioning of the Proposed Development:

- Terrestrial habitats and vegetation: effects include direct (i.e., derived from land-take for all infrastructure) and indirect (i.e., changes caused by effects to supporting systems such as groundwater or overland flow); and,
- Protected species: effects considered will include 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) and indirect (i.e. loss/changes of/to food resources; population fragmentation; degradation of key habitat, e.g. as a result of pollution).

5.2.58 These sources of impact will be considered throughout the design process for the Proposed Development, and where possible will either be avoided completely through scheme design or will be prevented/ minimised via good practice embedded mitigation measures to be included in the Proposed Development from the outset and detailed within the EIAR. Potential effects upon peat, geology, soils and hydrology (including GWDTE) will be considered separately, within the appropriate EIAR Chapters.

Construction

5.2.59 Following the application of embedded mitigation and good practice measures as outlined at the end of this chapter, potential construction phase ecological effects associated with the Proposed Development are considered to relate to:

- direct land take (habitat loss) to accommodate the Proposed Development;
- direct mortality of protected species via vehicle collision;
- temporary disturbance and land take for laydown areas and construction compounds;
- disturbance to, fragmentation or severance of connecting habitat or potential commuting routes within, and adjacent to, the Site; and,
- disturbance and displacement resulting from site clearance and construction, plant and vehicles movements and Site workers' activities.

Operation

5.2.60 Operational effects are defined as effects following the construction of the Proposed Development. Operational effects generally relate to disturbance of adjacent habitats or species, on either a temporary or permanent basis. Some effects may reduce with habituation or remain for the lifetime of the Proposed Development.

5.2.61 During the operational phase, with the application of good practice measures relating to wind farm operation and maintenance activities, it is considered that potential adverse impacts are restricted to the risk of collision mortality for bats. Direct adverse effects for other sensitive ecological features (such as habitat loss and disturbance) are not anticipated to occur during the operational period.

Decommissioning

5.2.62 Decommissioning, including the removal of infrastructure, would involve earthworks which in the absence of mitigation have the potential to cause pollution, and/ or to adversely impact habitats and protected species. Potential decommissioning effects are considered to be similar to those identified for the construction phase.

Cumulative Impacts

5.2.63 The potential for cumulative impacts with other renewable energy development proposals will be assessed in accordance with NatureScot guidance (2012) and include consideration of those such developments located within the same hydrological catchment(s) or within the regular range of mobile species (e.g., bats) out to a maximum of 10 km from the Site.

5.2.64 In accordance with NatureScot guidance, a cumulative impact assessment will only be undertaken where it is considered that a proposal could result in significant cumulative impacts. As such cumulative effects will only be considered for features with predicted

above negligible magnitude residual impacts, as it is considered that negligible residual impacts will not add measurably to cumulative effects.

5.2.65 Cumulative impacts to habitats will only be considered where there will be an above negligible adverse magnitude residual impact of loss of habitats following any mitigation and/ or enhancement proposals.

5.2.66 The cumulative assessment will include consideration of:

- existing wind farm developments, either operational or under construction;
- consented wind farm developments, awaiting implementation; and,
- wind farm applications awaiting determination within the planning process with relevant ecological information in the public domain.

5.2.67 Those developments which have been withdrawn and/ or refused will not be considered, unless an appeal is currently in progress and information is available.

5.2.68 Whilst single or small-scale wind turbine developments (three turbines or less) may contribute to cumulative effects, these have been scoped out of assessment, in line with NatureScot guidance (2012) as applications for such developments do not generally consider the potential for impacts upon ecological features in sufficient detail to inform meaningful assessment, and information is often not readily available for small-scale developments.

5.2.69 The inclusion of additional non-windfarm proposals will only be considered upon request from NatureScot and other primary interest bodies, provided appropriate information to inform the assessment is available.

Matters Scoped Out

5.2.70 CIEEM guidelines (2018) stipulate that it is not necessary to carry out a detailed assessment of impacts upon ecological features that are sufficiently widespread, unthreatened and/or resilient to impacts of a development proposal. NatureScot guidance (2023a) similarly advises that there are some species, which with standard mitigation measures, are unlikely to experience a significant environmental effect as a result of the construction and/or operation of onshore windfarms. This includes species that do not require surveys to inform the EIA but may require appropriate mitigation to ensure legislative compliance.

5.2.71 As such, the assessment within the EIAR will be restricted to consideration of the effects upon ecological features which are considered ‘important’ on the basis of relevant guidance and professional judgement.

5.2.72 Where ecological features are unlikely to be so important in the context of the Proposed Development as to warrant a detailed assessment or where they would be unlikely to be significantly affected on the basis of baseline information, it is proposed that these are ‘scoped out’ of the ecological impact assessment process. Embedded mitigation measures for such features may, however, still be outlined as appropriate, to reduce and/or avoid any potentially adverse effects, or to ensure legislative compliance.

Designated Sites for Nature Conservation

5.2.73 It is proposed that given the high degree of spatial separation, the static nature of the qualifying features (habitats), lack of connectivity and so likely impact pathways and/or major infrastructure (e.g. road network; A82 and A887) between the designated sites and

the Site, effects on the qualifying features of the following statutory designated sites are scoped out of assessment:

- Ness Woods SAC;
- Strathglass SAC;
- Glen Tarff SSSI;
- Garry Falls SSSI;
- South Laggan Fen SSSI;
- Easter Ness Forest SSSI;
- Glen Affric SSSI; and,
- Levishie Wood SSSI.

5.2.74 As such the River Moriston SAC is the only statutory designated site that will be considered within the assessment.

Habitats

5.2.75 It is proposed that the assessment relating to impacts of the Proposed Development to habitats is restricted to habitats which:

- May correspond with habitats listed on Annex 1 of the Habitats Directive;
- Are included on the SBL or LBAP; and/or,
- Have potential to represent GWDTE.

5.2.76 With impacts to common and widespread habitats of low sensitivity and/or conservation interest (e.g. acid grassland, improved grasslands, conifer plantation, scrub) scoped out of assessment.

Protected Species

5.2.77 Some ecological features, including certain legally protected species, may be of insufficient ecological and/or nature conservation importance in the context of the Proposed Development to warrant assessment within the EIAR, e.g., due to be only occasionally present or present only in low numbers. However, due to the level of legal protection offered to these features, they will be considered in the context of legal and policy implications.

5.2.78 There is no evidence that otter use the Site on a regular basis. Otter are qualifying features of two SACs within 10 km, and which distance is within the recorded foraging and home range thresholds for this species. However, both of these designated sites are ≥7.5 km from the Proposed Development as the crow flies, and a greater distance than this if following commuting routes and suitable habitat features. Both designated sites are located in different river catchments or inter-catchments to the Proposed Development with extensive suitable mixed habitats including wooded river valleys and the shores of Loch Ness nearby, and less suitable habitat such as upland moorland and bog plateaus and main roads between the SACs and the Proposed Development. As such it is considered unlikely that otter from the SAC will occur regularly enough at the Site for there to be any effect of the Proposed Development on the SAC populations.

5.2.79 Mountain hare are now included on Schedule 5 of the Wildlife and Countryside Act, meaning that it is an offence to kill or injure them or to disturb or obstruct them when they

are using a place of shelter or protection. It is also an offence to damage, destroy or obstruct access to a mountain hare's place of shelter.

5.2.80 However, as it is specific places of shelter of Schedule 5 species which are protected, not their habitat, there is no requirement to carry out impact assessment relating to impacts to populations of these species, as impacts due to loss of their habitat would not be a determining factor for a planning application. The Proposed Development is unlikely to result in significant adverse effects to local populations of mountain hare, as the habitats at the Site will not be sufficiently changed to become unsuitable for, and so lead to displacement of, this species.

5.2.81 Mountain hares can have a variety of different types of place of shelter; categorised as forms, heather seats, peat scrapes, burrows, snow seats and snow scrapes (see Thirgood & Hewson 1987). These are not easily identifiable as such in the absence of a hare and may only be used on an occasional and/or temporary and unpredictable basis. For these reasons, it is not considered practical or meaningful to attempt to identify these features on a systematic basis across the Proposed Development, and it is accepted that complete avoidance of their habitat is unlikely to be possible (NatureScot 2023c).

5.2.82 Where impacts on a protected species cannot be avoided, certain activities may only be undertaken with a licence from NatureScot and so as mountain hares are confirmed as present on Site, a licence to disturb them and destroy resting places will be required for construction works for the Proposed Development before any work commences.

5.2.83 Embedded mitigation and good practice, including SPPs and pre-construction protected species surveys for all protected species potentially present, is built into the Proposed Development to enable legislative protection of Schedule 5 species, and as such detailed impact assessment for mountain hare and other Schedule 5 species is scoped out.

Summary

5.2.84 Baseline information collected via surveys has not identified the Site as being sufficiently important to lead to the potential for significant effects on populations of the following protected species, following the application of embedded good practice mitigation:

- Water vole;
- Badger;
- Otter;
- All other protected terrestrial mammal species (excluding foraging/commuting bats);
- Fisheries (and freshwater pearl mussel);
- Invertebrates; or
- Reptiles and amphibians.

5.2.85 It is proposed that these species are therefore scoped out of the impact assessment. Consideration will, however, be afforded to the provision of precautionary embedded mitigation to be included in the CEMP to ensure legislation compliance with regards the protection afforded to these species under the Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Regulations) (as amended in Scotland) and the Wildlife and Countryside Act 1981 (as amended in Scotland), as relevant.

Assessment Methodology

5.2.86 Once identified, potential impacts are described making reference to the following characteristics as appropriate:

- adverse or beneficial;
- extent, magnitude;
- duration;
- timing;
- frequency; and,
- reversibility.

5.2.87 The assessment only makes reference to those characteristics relevant to understanding the nature of an effect and determining its significance. For the purposes of this assessment the temporal nature of potential effects is described as follows:

- negligible: of inconsequential duration;
- short-term: for 1 to 5 years;
- medium-term: for 5 to 10 years;
- long-term: >10 to 30 years; and,
- permanent: >30 years.

Sensitivity of Receptor

5.2.88 Relevant European, national and local guidance from governments and specialist organisations will be referred to in order to determine the sensitivity (or importance) of ecological features. Reference will also be made to NatureScot guidance on key ecological features when considering the development of onshore wind farms in Scotland (NatureScot 2023a).

5.2.89 In addition, importance will be determined using professional judgement and taking account of the results of baseline field and desk study findings and the functional role of features within the context of the geographical area.

5.2.90 It should be noted that importance does not necessarily relate to the level of legal protection that a feature receives, and ecological features may be important for a variety of reasons, such as their connectivity to a designated site, rarity or the geographical location of species relative to their known range.

5.2.91 In line with the principles of proportionate EIA, embedded mitigation, including avoidance through the design process and application of industry standard good practice, will be considered at the outset of the assessment. Important ecological feature status will only be assigned where there is still considered to be the potential for significant effects on the identified feature arising from the Proposed Development after the application of embedded mitigation measures.

5.2.92 For the purposes of this assessment the sensitivity or importance of an ecological feature will be considered in the context of a defined geographical area, ranging from international to local, as detailed in **Table 5.9**.

Table 5.9: Sensitivity/ Geographic Scale of Ecological Feature Importance

Sensitivity / Importance of Feature	Definition
Very High – International	An internationally designated site (i.e., SAC and/ or Ramsar site or candidate site (cSAC)). Large areas of priority habitat listed under Annex 1 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.
High – National	A nationally designated site (e.g., SSSI) or area meeting criteria for national level designations. Significant extents of a priority habitat identified in the 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 SBL priority species and species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Actor Annex II or Annex IV of the Habitats Directive.
Medium – Regional	Viable areas of key semi-natural habitat identified in the UK Biodiversity Action Plan (UKBAP). A regularly occurring, locally significant population of any nationally important species listed on the SBL 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.
Low – Local	Other species of local conservation, specifically those listed by the Highland 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). 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.

Identification and Characterisation of Impacts

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

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

Magnitude of Impact

5.2.95 The criteria used to determine the magnitude of impacts are set out in **Table 5.10**.

Table 5.10: Magnitude of impact criteria

Magnitude	Definition
Very High	The impact (either on its own or in-combination with other proposals) may result in the permanent total or almost complete loss of a site and/ or species status or productivity
High	The impact (either on its own or in-combination with other proposals) may adversely affect the conservation status of a site and/ or species population, in terms of the coherence of its ecological structure and function (integrity), across its whole area, that enables it to sustain the habitat, complex of habitats and/ or the population levels of species of interest.
Medium	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected, and impacts could potentially affect its ability to sustain some part of itself in the long term,
Low	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected, and impacts could potentially affect its ability to sustain some part of itself in the long term. Short-term impacts at a Regional level or above
Negligible	A very slight (indiscernible) reduction in a site and/ or species status or productivity and/ or no observable impact. Short-term impacts at a Local level or below.

Significance of Effect

5.2.96 For the purposes of assessment, significant effects are identified as those which encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

5.2.97 Such effects are identified by considering the importance of a feature, the magnitude of the impact and applying professional judgement based on best available evidence, to identify whether the integrity of a feature would be affected.

5.2.98 The term ‘integrity’ is used here to refer to the maintenance of the conservation status of a population of a species at a specific location or geographical scale.

5.2.99 For the purposes of assessment, significant effects will be primarily expressed with reference to an appropriate geographical scale.

5.2.100 In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect will be assumed as a precautionary approach. Where uncertainty exists, this is acknowledged.

5.2.101 Where the assessment proposes measures to mitigate adverse effects on ecological features, a further assessment of residual effects, taking into account such measures, will be undertaken.

5.2.102 CIEEM guidelines (CIEEM 2018) do not recommend the sole use of a matrix table as commonly set out in EIAR chapters to determine 'significant' and 'non-significant' effects.

For the purposes of the assessment, **Table 5.11** sets out adapted CIEEM terminology and equivalent in the context of the EIA Regulations 2017.

Table 5.11 : Effect (EIA Significance)

Significance		Definition
Significant	Major Adverse / Beneficial	A very high or high magnitude, medium-term or long-term adverse or beneficial effect, or a medium magnitude or above permanent effect, upon the integrity of an ecological feature at a national (Scottish) or international level.
	Moderate Adverse / Beneficial	A medium or high magnitude, medium term or long-term adverse or beneficial effect upon the integrity of an ecological feature at a regional level or above.
Non-significant	Minor Adverse / Beneficial	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected, and impacts could potentially affect its ability to sustain some part of itself in the long term.
	Negligible / Beneficial	A negligible or low adverse or beneficial effect upon the integrity of an ecological feature, typically at a site level or below.

Requirements for Avoidance, Mitigation, Compensation and Enhancement

5.2.103 The mitigation hierarchy will be adopted to avoid, mitigate and compensate for potential ecological impacts as a result of the Proposed Development:

- avoidance is used where an impact has been avoided e.g., through changes in Proposed Development design;
- mitigation is used to refer to measures to reduce or remedy a specific adverse impact *in situ*;
- compensation describes measures taken to offset residual effects, i.e., where mitigation in situ is not possible; and,
- enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

5.2.104 Note, in accordance with NPF4 Policy 3, proposals must protect, conserve, restore and enhance biodiversity, while Policy 5 is to protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development. NatureScot guidance (2023b) has classified ‘priority peatland’ and this includes peatland communities that should be completely avoided, and other peatland communities that if affected should be compensated for the loss of the resource. Current recommendations within the guidance is that restoration to achieve offsetting would be in the order of 1:10 (lost: restored). Any loss of such priority peatlands will be fully considered in the EIAR, with mitigation, compensation and enhancement proposals provided in the Outline Biodiversity Enhancement Management Plan (OBEMP) as appropriate.

Residual Effects

5.2.105 Where the EIA proposes measures to mitigate potentially significant adverse effects on ecological features, a further assessment of residual effects, taking into account any ecological mitigation recommended, will be undertaken.

Embedded Mitigation

Mitigation by Design

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

5.2.107 Measures to avoid or otherwise and minimise potentially adverse impacts upon ecological features during scheme design will include:

- Land-take: Proposed Development infrastructure will be designed to minimise the requirement for land-take and the number of watercourse crossings;
- Watercourse crossings: New watercourse crossings required will be designed in accordance with best practice and enable the free passage of fish and other wildlife;
- Watercourse buffers: A minimum 50 m buffer between scheme infrastructure will be applied around all watercourses marked on the 1:50 000 Ordnance Survey mapping in so far as possible having regard to other ecological and non-ecological constraints; and,
- Bat habitat features: A minimum 50 m buffer (from blade tip) will be applied to all watercourses marked on the 1:50 000 Ordnance Survey mapping, and woodland edges as outlined in NatureScot guidance (2021) in so far as possible having regard to other ecological and non-ecological constraints.

Good Practice Measures

Construction Environmental Management Plan (CEMP)

5.2.108 Details of construction phase mitigation measures for the Proposed Development will be contained within a Construction Environment Management Plan (CEMP). The CEMP will include an outline of all good practice construction measures, pollution prevention controls, and monitoring to be implemented over the course of the construction of the Proposed Development in line with current industry and statutory guidance. The CEMP will also outline measures for species protection, including in relation to on-site speed limits, use of lighting, waste management and capping of excavations at night.

Pre-construction Surveys

5.2.109 There is potential for a change in the distribution of protected terrestrial mammal species within the Site, between the completion of baseline surveys and the commencement of construction activities for the Proposed Development. Pre-construction surveys for protected terrestrial mammals, covering all areas within 250 m of the Proposed Development infrastructure and associated working areas, would therefore be undertaken within a defined period prior to the commencement of construction works. The results of the pre-construction surveys would inform the need for further mitigation (if required) in respect of sensitive working practices, species protection plans (SPPs) and the requirement to consult with NatureScot, in relation to protected species licensing.

Environmental Clerk of Works (ECoW)

5.2.110 A suitably qualified Environmental Clerk of Works (ECoW) and/or supporting environmental resource would be employed for the duration of the construction and reinstatement periods, to oversee environmental protection measures and working practices specified in the CEMP and prevent breaches of legislation pertaining to protected species and habitats. The role of the ECoW would be defined in the CEMP, and would include the following tasks:

- provide toolbox talks and information to all staff on-site, so staff are aware of the ecological sensitivities within the Site and the legal implications of not complying with agreed working practices;
- agree and monitor measures designed to minimise damage to retained habitats;
- undertake pre-construction surveys and advise on ecological issues and working restrictions where required;
- complete site-supervision works as required, in relation to sensitive habitats and protected species; and,
- Oversee restoration of working areas following construction.

5.2.111 Full details of embedded mitigation measures in relation to ecology will be detailed within the EIAR.

Questions for Consultees

- Question 5.2.1: Do Consultees agree that the scope of ecological desk study and field surveys undertaken is sufficient and appropriate to inform an assessment?
- Question 5.2.2: Do consultees agree with the proposed scope of the assessment and the ecological features to be considered?
- Question 5.2.3: Are there any other relevant consultees/key sources who should be contacted with respect to updated baseline ecological information gathering and assessment?
- Question 5.2.4: Do consultees agree that it is reasonable to consider embedded mitigation at the outset of assessment, and scope those ecological features for which embedded mitigation will be sufficient to prevent significant effects out of detailed impact assessment?
- Question 5.2.5: Do consultees agree with the proposed approach to cumulative impact assessment, and the developments to be included in it?
- Question 5.2.6: Do consultees agree with the ecological receptors that are proposed to be scoped out of the EIAR, based on current information?
- Question 5.2.7: In the absence of EcoBat what does NatureScot believe should be done for the bat assessment, and/or should we expect any interim guidance, or current guidance change, on the subject to provide clarity?

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    - Bats.
    - Freshwater Pearl Mussel.
    - Otter.
    - Pine Marten.
    - Red Squirrel.
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5.3 Ornithology

Introduction

5.3.1 The Ornithology Chapter of the EIA Report will provide an assessment of potentially significant effects arising from the Proposed Development, upon important ornithological features, and will detail the proposed mitigation and/or compensation measures required to avoid, minimise, restore or offset adverse effects and demonstrate net gain.

5.3.2 This section of the EIA Scoping Report therefore details the proposed approach to baseline ornithological information gathering and assessment that will be presented within that chapter, in accordance with current best practice guidance.

Legislation, Policy and Guidance

5.3.3 In preparation of the Ornithology Chapter of the EIA Report, reference will be made to the following key pieces of legislation, policy and guidance.

5.3.4 Legislation:

- Conservation (Natural Habitats, &c.) Regulations 1994, as amended in Scotland by the Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019 (collectively 'the Habitats Regulations').
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations).
- The Wildlife and Countryside Act 1981 (as amended).
- The Wildlife and Natural Environment (Scotland) Act 2011.
- The Nature Conservation (Scotland) Act 2004.

5.3.5 Copies of all UK and Scottish Government legislation, including original, as enacted, and revised versions, are available from the National Archives at https://www.legislation.gov.uk.

5.3.6 Policy:

- Scottish Government (2022) Onshore Wind Policy Statement.
- Scottish Government (2022) The Scottish Biodiversity Strategy to 2045.
- Scottish Government (2023) National Planning Framework 4 (NPF4).

5.3.7 Guidance:

- Wind farms and Birds - Calculating a theoretical collision risk assuming no avoiding action (SNH, 2000[9]).
- Natural Heritage Zones bird population estimates (Wilson *et al*., 2015[10]).

[9] SNH (2000). Windfarms and Birds - Calculating a theoretical collision risk assuming no avoiding action. SNH Guidance Note. Scottish Natural Heritage (SNH), Inverness.

[10] Wilson, M. W., Austin, G. E., Gillings S. & Wernham, C. V. (2015). Natural Heritage Zone Bird Population Estimates. Scottish Wind Farm Bird Steering Group (SWBSG) Commissioned report.

- Assessing connectivity with Special Protection Areas (SPAs) (SNH, 2016[11]).
- Recommended bird survey methods to inform impact assessment of onshore wind farms (SNH, 2017[12]).
- Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018[13]).
- Assessing significance of impact from onshore wind farms on birds outwith designated areas (SNH, 2018[14]).
- Assessing the cumulative impact of onshore wind farms on birds (SNH, 2018[15]).
- Avoidance rates for the onshore SNH wind farm collision risk model (SNH, 2018[16]).
- Scottish Biodiversity List (SBL) 2020.
- Highland Nature: Biodiversity Action Plan 2021-2026 (Highland Environment Forum, 2021[17]).
- 'Fifth Birds of Conservation Concern' (Stanbury *et al*., 2021[18]).
- Disturbance Distances in Selected Scottish Bird Species (NatureScot, 2022[19]).
- General Pre-application and Scoping Advice for Onshore Wind Farms (NatureScot, 2023[20]).

Initial Consultation

5.3.8 In October 2021, NatureScot were consulted on the proposed scope and approach to baseline ornithological surveys to inform a wind farm development located within the Site.

5.3.9 In their response (dated 25th November 2021), NatureScot advised they were in broad agreement with the scope of target species identified for survey and that the survey methods proposed appeared appropriate and in line with their guidance (2017).

5.3.10 They advised that common scoter flights may not be picked up by standard survey methodologies and that a robust desk study for this species should be undertaken to support the surveys, They also advised that the potential for breeding Slavonian grebe should be considered as part of the desk study.

5.3.11 NatureScot stated that raptors should also be considered outside the breeding season, with the potential for the Site and surrounding area to support non-breeding roost sites,

[11] SNH (2016). Assessing connectivity with Special Protection Areas (SPAs). SNH Guidance Note. Version 3 – June 2016. Scottish Natural Heritage (SNH), Inverness.

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[14] SNH (2018). Assessing Significance of Impacts from Onshore Windfarms on Birds Outwith Designated Areas. Scottish Natural Heritage (SNH), Inverness.

[15] SNH (2018c). Assessing the cumulative impacts of onshore wind farms on birds. SNH Guidance note. Scottish Natural Heritage (SNH), Inverness.

[16] SNH (2018b). Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model. v2 September 2018. Scottish Natural Heritage (SNH), Inverness.

[17] Highland Environment Forcum (2021) Highland Nature: Biodiversity Action Plan 2021-2026. Available at: https://www.highlandenvironmentforum.info/wp-content/uploads/2022/01/Highland-Nature-Biodiversity-Action-Plan-2021-2026-_compressed-.pdf [Accessed 16th October 2023]

[18] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. & Win, I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds, 114, pp. 723–747.

[19] NatureScot (2022). Disturbance Distances in Selected Scottish Bird Species. NatureScot, Guidance.

[20] NatureScot (2023). NatureScot Pre-application Guidance for Onshore Wind Farms. NatureScot, Inverness.

and that a GET model is recommended to inform assessment of habitat loss for golden eagle.

5.3.12 Full details of consultations will be presented within the EIA Report.

Baseline

5.3.13 Baseline ornithological conditions to inform the design and assessment of the Proposed Development will be established through desk study and field surveys, and which commenced in September 2021.

5.3.14 A summary of baseline conditions established to date is presented within this section. Full details of survey methodologies, effort and findings will be provided within the Ornithology Chapter of the EIA Report.

Study Area

5.3.15 The scoping Site boundary and turbine layout presented herein (hereafter the 'Proposed Development') have been determined following the completion of surveys in 2023.

5.3.16 Study areas for baseline ornithological information gathering have been based upon preliminary development boundaries, extended to record flight activity, nest, roost and display sites for target species in accordance with NatureScot guidance (SNH, 2017). As such survey areas are buffers of the study area as appropriate for specific survey and species methodologies.

5.3.17 Study areas adopted have been updated over the course of the survey to account for changes in scheme design, as detailed herein.

Desk Study

5.3.18 Desk studies undertaken have included a review of the NatureScot Sitelink[21] to identify the proximity of the Site to statutory designated sites for nature conservation with cited ornithological interests.

5.3.19 Consultations with the following specialist recording groups have also been undertaken to identify existing ornithological records for the Site and surrounding area:

- RSPB Scotland;
- the Highland Raptor Study Group (HRSG); and,
- the Highland Biological Recording Group (HBRG).

5.3.20 A preliminary review of publicly available planning application documentation for the now operational Beinneun Wind Farm (THC Planning Reference 11/04152/S36) has also been undertaken.

5.3.21 The results of desk studies, updated as necessary, will subsequently be used as evidence to support conclusions reached within the assessment of impacts upon ornithological features and provide further context for baseline conditions, established through field surveys.

5.3.22 Further details of desk studies and consultations undertaken will be provided within the Ornithology Chapter and associated Technical Appendices of the EIA Report.

[21] https://sitelink.nature.scot/home

Designated Sites for Nature Conservation

5.3.23 The identification of the potential connectivity between the Proposed Development and Special Protection Areas (SPAs) has been undertaken on the basis of ranging behaviours and distances from Proposed Development sites, as specified in current NatureScot guidance (SNH, 2016).

5.3.24 In review of NatureScot Sitelink, the Site is located within 10 km of the two statutory designated sites for nature conservation with cited ornithological interests, as detailed in **Table 5.12** and illustrated in **Figure 5.3.1.**

5.3.25 The Site is not located within 20 km of any SPA, or Ramsar site, with cited migratory waterfowl interests and is not located within or close to any known migratory goose feeding areas (as detailed in Mitchell, 2012[22]).

Table 5.12: Designated sites with ornithological qualifying features.

Designated Site	Distance from the Site	Qualifying Features
West Inverness-shire Lochs SPA/SSSI[23]	2.22 km	Black-throated diver (breeding) Common scoter (breeding)
Glen Affric SSSI	8.58 km	Breeding bird assemblage incl. crested tit, Scottish crossbill, capercaillie and black grouse

Existing Ornithological Records

5.3.26 At the time of writing, existing ornithological records have been obtained from RSPB Scotland and the HRSG for a search area out to 2 km from the Site for all records of protected and notable ornithological species and 10 km for records of eagle species.

5.3.27 No ornithological records were returned as part of an information request to the HBRG, for a search area out to 2 km from the Site.

RSPB Scotland

5.3.28 RSPB Scotland returned existing ornithological records of black grouse within the Site and within 2 km of the Site, with additional records of golden eagle and white-tailed eagle, just beyond 10 km from the Site. Further details of such records are considered sensitive and will not be made publicly available, but will be referenced where relevant within a Confidential Volume of the EIA Report.

5.3.29 RSPB Scotland were additionally consulted for information relating to known flight routes of common scoter between breeding sites and coastal areas. In response to this additional request, RSPB Scotland outlined they did not hold such information for the locality, but that such information may be available within planning documentation for other nearby wind farm investigations.

HRSG

[22] Mitchell, C. (2012) Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge.

[23] *SPA - Special Protection Area; SSSI – Site of Special Scientific Interest (SSSI).*

5.3.30 The HRSG returned records of golden eagle and white-tailed eagle within the 10 km of the Site, this included nest sites associated with:

- three golden eagle breeding ranges; and,
- a single white-tailed eagle breeding range.

No nest records were returned from within the Site, or within 1 km of the Site.

5.3.31 Records were also provided of nest sites associated with additional golden eagle and white-tailed eagle ranges within 20 km of the Site. Further details of such records are considered sensitive and will not be made publicly available, but will be referenced where relevant within a Confidential Volume of the EIA Report.

5.3.32 Additional consultation is proposed with the HRSG and local raptor workers to establish known or likely range boundaries of those breeding golden eagle and white-tailed eagle pairs identified within 10 km of the Site. This will further inform the design and subsequent assessment of the Proposed Development.

5.3.33 The HRSG did not hold any further species records within 2km of the Site.

Beinneun Wind Farm

5.3.34 A review of the following planning application documents for the operational Beinneun Wind Farm development has been undertaken:

- Technical Appendix A8.2 Beinneun Windfarm Appraisal of the Likely Significant Effect on Common Scoter Associated with the West Inverness-shire lochs Special Protection Area.
- Appropriate Assessment: Appraisal of the Implications of the proposed Beinneun Wind Farm development, near Invergarry, on the West Inverness-shire Lochs Special Protection Area.

5.3.35 The documents provide an extensive evidence base to inform an appraisal of the potential for likely significant effects upon common scoter, as qualifying interest of the West Inverness-shire lochs SPA.

5.3.36 The documents examine available information from scientific literature and species expert opinion for:

- offshore wind farms with regards avoidance and flight habits (including in times of poor visibility and darkness); and,
- theoretical flight lines between established favoured breeding areas for common scoter associated with the West Inverness-shire Lochs SPA.

5.3.37 In summary the information provides sufficient existing evidence to indicate that common scoter is not likely to be a species susceptible to collision risk, due to wind farm avoidance behaviour and low flight heights. The information also evidences that theoretical flights over the Beinneun Ridge and through the Beinnieun Wind Farm would be highly unlikely, with birds more likely to choose shorter direct flight lines between favoured breeding areas, rather than higher altitude flight paths.

5.3.38 Given the location and spatial separation of the Proposed Development from the West Inverness-shire Lochs SPA, being located adjacent to Beinnieun Wind Farm on the Beinneun Ridge and further distant from the SPA, flight lines of common scoter between favoured breeding areas would occur a considerable distance to the west of the Proposed

Development. The potential for collision risks and displacement from preferred breeding areas as a result of the Proposed Development is as such highly improbable.

Field Surveys

5.3.39 NatureScot guidance (SNH, 2017) advises that a minimum of two years of ornithological survey data should be collected to inform the assessment of onshore wind farm developments, unless it can be demonstrated a shorter period of survey is sufficient. NatureScot guidance (SNH, 2017) also advises that data should be collected within the most recent five-year period, prior to submission, and within three years if populations of key species are known to be changing rapidly.

5.3.40 Baseline ornithology surveys were commenced in September 2021, with the identification of target species and scope of surveys informed through an initial desk study of publicly available information, reference to NatureScot guidance (SNH, 2016, 2017, and 2018b) and a reconnaissance survey visit completed in September 2021 which sought to establish onsite bird habitat associations.

5.3.41 Target species identified for subsequent survey and recording were identified as follows:

- All Schedule 1 and Annex 1 listed breeding raptors and owls;
- All waders, waterfowl (excl. feral species and mallard) and other wetland species (e.g. herons, scoters, grebes);
- Divers; and,
- Black grouse.

5.3.42 The scope of ornithological surveys was subsequently agreed in consultation with NatureScot in October 2021 as outlined in 'Initial Consultation'. The following ornithological field surveys have been undertaken:

- Vantage point (VP) flight activity surveys;
- Breeding bird surveys:
    - Moorland breeding bird survey (MBBS);
    - Breeding Schedule 1 raptor and owl searches;
    - Breeding diver searches; and
    - Breeding black grouse searches.

VP Flight Activity Surveys

5.3.43 VP flight activity surveys to quantify the level of flight activity and its distribution relative to proposed turbine locations, were commenced in September 2021 and concluded in August 2023 providing a minimum of two consecutive years of survey in accordance with NatureScot guidance (2017). The primary purpose of such surveys is to provide input data for the NatureScot Collision Risk Model (CRM) (Band *et al*., 2007).

5.3.44 The recommended survey area, in accordance with NatureScot guidance (2017), should encompass the proposed turbine locations, extended to 500 m beyond the outermost proposed turbines.

5.3.45 VP flight activity surveys were commenced in September 2021 on the basis of the maximum extent of potential turbine locations known at the time (the '2022 Study Area'; see **Figure 5.3.6**), utilising three VP locations (VP1a-3a) as shown in **Figure 5.3.2**, and

which were identified as the optimum minimum number of VP locations to provide maximum coverage of the required survey area.

5.3.46 In accordance with NatureScot guidance (2017) a minimum of 72 hours observational effort was completed at each VP over a single year (Year 1; September 2021 to August 2022), as summarised in **Table 5.13**, divided across a consecutive non-breeding (2021/2022) and breeding season (2022).

5.3.47 In September 2022, the maximum extent of potential turbine locations was updated (the '2022 Study Area'; see **Figure 5.3.6**). VP locations were therefore amended to provide maximum visual coverage of the required survey area (VP1b-3b as shown in **Figure 5.3.3**).

5.3.48 Viewshed visibility arcs presented in **Figure 5.3.2** and **5.3.3** are derived from ground-truthed digital elevation model analyses of visibility 20 m above the ground, representing the airspace occupied by the candidate turbine specification.

5.3.49 In accordance with NatureScot guidance (2017) a minimum of 72 hours observational effort was proposed for completion at each VP over a single year (Year 2; September 2022 to August 2023), divided across a consecutive non-breeding (2022/2023) and breeding season (2023). This was possible for VP1b and2b, with adverse weather (low cloud) limiting the opportunity of safe access windows for survey at VP3b, and which is considered typical of the locale.

5.3.50 Full details of survey effort, including times and weather conditions in accordance with NatureScot guidance (SNH, 2017) will be provided in the EIA Report.

Table 5.13: VP flight activity survey effort

VP	2021				2022								Total
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
1a	6	6	9	6	6	0	12	6	6	6	6	6	75
2a	6	6	6	6	6	6	6	6	6	0	12	6	72
3a	6	6	9	6	6	0	12	6	6	6	6	6	75
VP	**2022**				**2023**								**Total**
	Sep	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	
1b	3	9	6	6	6	6	6	6	6	6	6	6	72
2b	6	6	6	6	6	6	6	6	6	6	6	6	72
3b	3	3	6	9	6	6	3	6	6	6	6	6	66

5.3.51 During survey, flight lines were mapped for all target species passing through the VP survey area. Details of species, number of birds, flight height in bands, duration and direction were noted on standardised recording forms and field plans.

5.3.52 Height bands (HT) were used in the field, to assign target species flight activity at, below or above collision risk height, based on the preferred candidate turbine specification.

5.3.53 Secondary species were also noted in approximately 5-minute summary intervals, with the number of birds present and general behaviour recorded in order to build an overall

picture of activity. Secondary species were defined as commoner raptors (buzzard, kestrel and sparrowhawk), all gulls, feral species, mallard and raven.

5.3.54 Surveys in Year 1 recorded a total of 37 flights of the following target species:

- Pink-footed goose – 3 flights, 317 birds;
- Black grouse – 1 flight, 1 bird;
- Lapwing – 1 flight, 1 bird;
- Golden plover – 2 flights, 2 birds;
- Whimbrel – 1 flight, 2 birds;
- Dunlin – 2 flights, 2 birds;
- Greenshank – 2 flights, 3 birds;
- Golden eagle – 19 flights, 22 birds;
- Goshawk – 2 flights, 2 birds;
- Red kite – 1 flight, 1 bird;
- White-tailed eagle – 1 flight, 1 bird;
- Merlin – 1 flight, 1 bird; and,
- Peregrine – 1 flight, 1 bird;

5.3.55 Surveys in Year 2 recorded a total of 24 flights of the following target species:

- Pink-footed goose – 1 flight, 100 birds;
- Greylag goose – 1 flight, 2 birds;
- Teal – 1 flight, 1 bird;
- Goosander – 1 flight, 1 bird;
- Golden plover – 2 flights, 2 birds;
- Dunlin – 1 flight, 1 bird;
- Wood sandpiper – 4 flights, 5 birds;
- Greenshank – 2 flights, 2 birds;
- Grey heron – 1 flight, 1 bird;
- Golden eagle – 8 flights, 8 birds;
- Red kite – 1 flight, 1 bird; and,
- Peregrine – 1 flight, 1 bird.

5.3.56 Flights in both years largely comprised those of single birds, with the total number of flights reported above including some flights which are not considered to be "at collision risk" to the Proposed Development.

5.3.57 Flights, with the exception of those recorded for wood sandpiper, which are considered sensitive, are shown on **Figure 5.3.4** and **5.3.5**.

5.3.58 Information pertaining to the locations or likely locations of sensitive breeding bird species, will be referenced where relevant within a Confidential Volume of the EIA Report.

5.3.59 Three secondary species were recorded over the course of the two years of baseline flight activity surveys: common buzzard, kestrel and raven.

Breeding Bird Surveys

Moorland Breeding Bird Surveys (MBBS)

5.3.60 A moorland breeding bird survey (MBBS) following an adapted Brown and Shepherd (1993) methodology has been carried in 2022 and 2023.

5.3.61 In 2022 (Year 1), the survey area comprised the 2022 Study Area and a 50 0m buffer, as shown in **Figure 5.3.6**. In 2023 (Year 2), the study area (‘2023 Study Area'), and associated 500 m survey buffer, was extended to the north (see **Figure 5.3.6**).

5.3.62 In each survey year the MBBS was carried out between April and July, and comprised of four staggered survey visits at least seven days apart, in accordance with NatureScot guidance (2017).

5.3.63 Target species included breeding moorland and open country species, typically wildfowl (excluding feral species and mallard), waders and gulls. Moorland and open country passerine species were however excluded, given they are not considered sensitive to onshore wind farm developments (NatureScot, 2017).

5.3.64 All survey visits were undertaken in fine weather conditions conducive to survey. Detailed field survey effort will be presented within the Ornithology Chapter and associated Technical Appendices.

5.3.65 During survey in 2022, the survey area was found to support an assemblage of moorland breeding species including golden plover, dunlin, greenshank, wood sandpiper and teal, primarily associated with the lower and wetter elevations of the study areas in proximity to Loch nam Faoileag. Survey in 2023 recorded a similar assemblage.

Breeding Schedule 1 / Annex 1 Raptor and Owl Searches

5.3.66 Searches for Schedule 1/Annex 1 breeding raptors and owls were undertaken in 2022 and 2023, adopting species-specific survey advice from Hardey *et al.* (2013), in accordance with NatureScot guidance (2017).

5.3.67 In 2022, the survey area comprised the 2022 Study Area as shown in **Figure 5.3.6** and out to 2 km for all Schedule 1 and Annex 1 listed raptor and owl species, extended to 6 km for searches for eagles (where access permissions allowed) in accordance with NatureScot guidance (2017).

5.3.68 In 2023, the study area was extended to the north as shown in **Figure 5.3.6** and out to 2 km for all Schedule 1 and Annex 1 listed raptor and owl species, extended to 6 km for searches for eagles (where access permissions allowed) in accordance with NatureScot guidance (2017).

5.3.69 During each survey year, searches were undertaken over a course of several staggered visits to the survey area, and consisted of a combination of walkover surveys and stationary vantage point watches over suitable habitat features to determine occupancy and/or any breeding/territorial behaviour.

5.3.70 All searches were undertaken in fine weather conditions conducive to survey. Detailed field survey effort will be presented within the Ornithology Chapter and associated Technical Appendices.

5.3.71 In 2022, searches did not record confirmed breeding evidence for any Schedule 1/Annex 1 raptor or owl species within the 2 km survey area, or breeding evidence for eagle species within the 6 km survey area. A single osprey nest was recorded approximately 6km to the north-east of the Site, and observations of hen harrier, red kite, white-tailed eagle and golden eagle were made over the course of searches.

5.3.72 In 2023, searches similarly did not record confirmed breeding evidence for any Schedule 1/Annex 1 raptor or owl within the 2 km survey area. Observations of golden eagles recorded over the course of searches suggested the presence of a possible breeding site within the 6 km survey area, with an adult pair recorded displaying territorial behaviour.

Breeding Diver Searches

5.3.73 In 2022, suitable waterbodies within the survey area adopted for breeding Schedule 1/Annex 1 breeding raptors and owls were inspected for the presence of breeding red-throated and black-throated divers (**Figure 5.3.6**). Waterbodies were however found to be largely ephemeral, and/or too small to provide optimal breeding opportunities for either species.

5.3.74 In 2023, searches for breeding divers were repeated, with survey visits undertaken in late May and late June in accordance with Gilbert *et al.* (1998). The survey area comprised all suitable waterbodies within the 2023 Study Area and out to 1 km, as shown in **Figure 5.3.6.**

5.3.75 No observations of either diver species were made at waterbodies within 1 km of the Site. The majority of waterbodies within the survey area were found to be dry or holding very little water.

5.3.76 A single observation of a likely black-throated diver was recorded near to Loch Lundie (>2 km southwest of the Site) during breeding Schedule1/Annex 1 raptor searches in 2023.

Breeding Black Grouse Searches

5.3.77 Targeted searches for lekking black grouse had been scoped out of survey in 2022, in consultation with NatureScot, due to the elevation of the Site and predominant habitats present being largely unsuitable for the species (absence of tree cover).

5.3.78 Observations of black grouse were however made during ornithology survey effort in 2022, whilst existing records of this species were returned by RSPB Scotland, including known lek locations within and in proximity to the Site.

5.3.79 Searches for black grouse leks were therefore undertaken in 2023, based on species-specific survey techniques detailed within Gilbert *et al.* (1998), as per NatureScot guidance (2017), with a visit in early May to record the distribution of lek sites and peak numbers of lekking males within the study area and out to 1.5 km, as access permissions allowed.

5.3.80 The survey was undertaken in fine weather conditions conducive to survey and recorded three lek sites, supporting a total of eight males, with a single female also found to be in attendance.

5.3.81 Detailed field survey effort will be presented within the Ornithology Chapter and associated Technical Appendices.

Additional Surveys

5.3.82 In consultation with relevant data providers, no existing records of common scoter or Slavonian grebe have been identified at waterbodies within 2 km of the Site.

5.3.83 No observations of these species have been made over the course of the ornithological survey campaign, with waterbodies within 2 km of the Site primarily found to be prone to drying and/or supporting low water levels. Such conditions are considered unsuitable or otherwise suboptimal for both species. Targeted surveys for common scoter and Slavonian grebe have therefore not been undertaken and are not considered necessary.

Assessment of Environmental Impacts and their Significance

5.3.84 The assessment presented within the Ornithology Chapter of the EIA Report will be undertaken adopting established approaches to impact assessment outlined in CIEEM guidance, as recommended in NatureScot guidance (SNH, 2018), and as outlined herein.

5.3.85 The assessment will consider in detail only those impacts upon important ornithological features, considered sensitive to wind farm developments, and upon which potentially significant impacts at the regional population scale or above may occur.

Potential Impacts

5.3.86 The assessment presented within the Ornithology Chapter of the EIA Report will consider the following main potential adverse impacts upon ornithological features associated with the construction and operation of the Proposed Development:

- Collision mortality risks as a result of collision or interaction with turbine blades; and,
- Displacement (indirect habitat loss) as a result of disturbance.

5.3.87 These sources of impacts upon ornithological features will be considered throughout the design process for the Proposed Development, and where possible will either be avoided completely through scheme design or will be prevented/ minimised via good practice embedded mitigation measures to be included in the Proposed Development from the outset and detailed within the EIA Report.

Construction

5.3.88 During construction of the Proposed Development, in the absence of specific mitigation, it is anticipated that impacts upon ornithological features may arise from disturbance to and loss of nest sites, eggs and/or dependent young.

5.3.89 Construction activities may be 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 construction works.

5.3.90 Effects would likely to be greatest during the breeding season (generally between March and August, depending upon the species), but are considerably variable between sites and species. The potential for disturbances to occur to breeding sites of specific species, will therefore be assessed on the basis of best available species guidance and which will be referred to within the EIA Report.

5.3.91 Overall construction disturbance would be considered temporary and would occur only when construction activities are taking place. Furthermore, construction would be not expected to take place over the whole project area, but within defined working areas, phased over small areas.

Operation

5.3.92 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 take place on the basis of baseline studies.

5.3.93 The potential for disturbance to occur to breeding sites of specific species, will therefore be assessed on the basis of best available species guidance and which will be referred to within the EIA Report.

5.3.94 In relation to golden eagles, the potential for operational habitat loss (displacement) impacts to golden eagles will be assessed where appropriate using the Golden Eagle Topographical (GET) model (Fielding *et al*., 2019), in accordance with current NatureScot advice (NatureScot, 2021).

5.3.95 Full details of the GET model assessment and consultations will be provided within the EIA Report.

5.3.96 Where the level of flight activity data justifies it (>three "at collision risk" flights), the NatureScot CRM will be used to provide an estimate of collision mortality risks to target species.

5.3.97 Full details of the approach to the estimation of collision mortality risks will be provided within the EIA Report.

Decommissioning

5.3.98 Decommissioning, including the removal of infrastructure, is considered to result in similar impacts as those identified for the construction phase.

Cumulative Impacts

5.3.99 In accordance with NatureScot guidance (SNH, 2018) the assessment within the ornithology chapter of the EIA Report will include a cumulative impact assessment, in accordance with NatureScot guidance (SNH, 2018) concerning:

- Collision risks; and,
- Displacement.

5.3.100 The cumulative impact assessment will consider the potential for cumulative effects at the regional Natural Heritage Zone (NHZ) scale, in accordance with NatureScot guidance (SNH, 2018).

5.3.101 The cumulative assessment will, where sufficient information exists, include consideration of:

- Existing wind farm developments, either built or under construction;
- Approved wind farm developments, awaiting implementation; and,
- Wind farm proposals awaiting determination within the planning process with design information in the public domain.

Assessment Methodology

5.3.102 Impact assessment presented within the EIA Report for scoped in ornithological features will be based on current CIEEM (2018) and NatureScot guidance (2018).

5.3.103 The assessment process will include the following stages:

- determination and evaluation of important ornithological features;
- identification and characterisation of impacts;
- outline of mitigating 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 (if required); and,
- identification of opportunities for enhancement.

5.3.104 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.

Sensitivity of Features

5.3.105 Relevant national and local statutory and industry best practice guidance will be referred to in order to determine the sensitivity (or importance) of ornithological features. The assessment within the EIA Report will only assess in detail impacts upon important ornithological features i.e., those that are considered important and potentially significantly affected by the Proposed Development.

5.3.106 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 1981 (as amended); 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, 2018).

5.3.107 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. The importance of an ornithological feature will be defined on a scale of ‘Low’ to ‘Very High’, as set out in **Table 5.14**.

5.3.108 In line with the principles of proportionate EIA, embedded mitigation, including avoidance through the design process and application of industry standard good practice, will be considered at the outset of the assessment. Important ornithological feature status will only be assigned where there is still considered to be the potential for significant effects on the identified feature arising from the Proposed Development after the application of embedded mitigation measures.

5.3.109 A detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts will not be undertaken and justification for 'scoping out' provided.

Table 5.14: Scale of Ornithological Importance

Sensitivity of Feature	Criteria
Very High	An internationally designated site i.e., Special Protection Area (SPA) and/ or Ramsar site or candidate site (cSPA). A regularly occurring species present in internationally important numbers (>1% of its biogeographic population) listed under Annex 1 of the Birds Directive, or regularly occurring migratory species listed under Annex 2 of the Birds Directive connected to an internationally designated site for this species.
High	A nationally designated site e.g. Site of Special Scientific Interest (SSSI), or area meeting criteria for national level designations. A regularly occurring species present in nationally important numbers (>1% of its Scottish population) and listed as a UK Biodiversity Action Plan (BAP), SBL priority species, Red-listed Bird of Conservation Concern and listed under Schedule 1 of the Wildlife & Countryside Act or Annex 1 of the Birds Directive.
Medium	A regularly occurring species present in regionally important numbers i.e., >1% of its relevant Natural Heritage Zone (NHZ) population or appropriate alternative and listed as a UK BAP, SBL priority species, Red-listed Birds of Conservation Concern or listed on Schedule 1 of the Wildlife & Countryside Act or Annex 1 of the Birds Directive.
Low	All other species that are widespread and common and which are not present in regionally or nationally important numbers, but which do contribute to the local breeding/ wintering bird assemblage.

Identification and Characterisation of Impacts

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

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

Magnitude of Impact

5.3.112 The criteria used to determine the magnitude of impacts are set out in **Table 5.15**.

Table 5.15: Magnitude of impact criteria

Magnitude	Definition
Very High	The impact (either on its own or cumulatively with other proposals) may result in the permanent total or almost complete loss of a site and/ or species status or productivity E.g. Affecting >80% of the relevant Regional NHZ population
High	The impact (either on its own or cumulatively with other proposals) may adversely affect the conservation status of a site and/ or species population, in terms of the coherence of its ecological structure and function (integrity), across its whole area, that enables it to sustain the habitat, complex of habitats and/ or the population levels of species of interest. E.g. Affecting 21%-80% of the relevant Regional NHZ population
Medium	The impact (either on its own or cumulatively with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected and impacts could potentially affect its ability to sustain some part of itself in the medium-term to long-term E.g. Affecting >6%-20% of the relevant Regional NHZ population
Low	The impact (either on its own or cumulatively with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected and impacts could potentially affect its ability to sustain some part of itself in the long term. E.g. Affecting 1%-5% of the relevant Regional NHZ population. Short-term effects to 5%-20% of the Regional NHZ population.
Negligible	A very slight (indiscernible) reduction in a site and/ or species status or productivity and/ or no observable impact. e.g. Affecting <1% of the relevant Regional NHZ population. Short-term effects to <5% of the Regional NHZ population.

Significance of Effect

5.3.113 CIEEM guidelines (2018) define a 'significant effect' as an effect that either supports or undermines biodiversity conservation objectives for 'important ornithological features' or for biodiversity in general and notes that "a significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted following EIA procedures."

5.3.114 Potentially significant effects identified will be expressed within the EIA Report with reference to an appropriate geographic scale. For example, a significant effect on a nationally designated site is likely to be of national significance. However, the scale of significance does not necessarily always relate to the importance of an ornithological feature. For example, an effect on a species which is considered of national importance, may not have a significant effect upon its national population.

5.3.115 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 guidance. The significance of effects at a local scale may also be assessed where sufficient information allows a meaningful assessment.

5.3.116 In order to assess significance, population information will be provided at regional and national scales, as relevant, where available. For regional estimates, it is proposed that Natural Heritage Zone (NHZ) population estimates are used (Wilson *et al*., 2015). In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect will be assumed as a precautionary approach. Where uncertainty exists, this will be acknowledged.

5.3.117 CIEEM guidelines (CIEEM 2018) for Ecological Impact Assessment do not recommend the sole use of a matrix table, as commonly set out in EIAR chapters, to determine 'significant' and 'non-significant' effects for ornithological receptors. For the purposes of assessment Table 5.16 sets out adapted CIEEM terminology and equivalent that will be followed for assessment in the EIA Report, in the context of the EIA Regulations 2017.

Table 5.16: Significance Criteria

Significance		Definition
Significant	Major Adverse / Beneficial	A very high or high, medium-term or long-term adverse or beneficial effect, or a medium magnitude or above permanent effect, upon the integrity of an ornithological feature at a national (Scottish) or international level.
	Moderate Adverse / Beneficial	A medium or high, medium-term or long-term adverse or beneficial effect upon the integrity of an ornithological feature at a regional level or above.
Non-Significant	Minor Adverse / Beneficial	The impact (either on its own or in-combination with other proposals) would not adversely affect the conservation status of a site and/ or species, but some element of the functioning might be affected and impacts could potentially affect its ability to sustain some part of itself in the long term.
	Negligible or Low Adverse/ Beneficial	A negligible or low adverse or beneficial effect upon the integrity of an ornithological feature, typically at a site level or below.

Requirements for Avoidance, Mitigation, Compensation and Enhancement

5.3.118 The mitigation hierarchy will be adopted to avoid, mitigate and compensate for potential ecological impacts as a result of the Proposed Development:

- avoidance is used where an impact has been avoided e.g., through changes in Proposed Development design;
- mitigation is used to refer to measures to reduce or remedy a specific adverse impact in situ;
- compensation describes measures taken to offset residual effects, i.e., where mitigation *in situ* is not possible; and,
- enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

5.3.119 Note, in accordance with NPF4 and Policy 3, proposals must protect, conserve, restore and enhance biodiversity. This will be fully considered in relevant chapters of the EIAR, with mitigation, compensation and enhancement proposals provided in the Outline Biodiversity Enhancement Management Plan (OBEMP) as appropriate.

Residual Effects

Where the EIA proposes measures to mitigate potentially significant adverse effects on ornithological features, a further assessment of residual effects, taking into account any ornithological mitigation recommended, will be undertaken.

Matters Scoped Out

5.3.120 CIEEM guidelines (2018) stipulate that it is not necessary to carry out a detailed assessment of impacts upon ornithological features that are sufficiently widespread, unthreatened and/or resilient to impacts of a development proposal. NatureScot guidance (2020) similarly advises that there are some species, which with standard mitigation measures, are unlikely to experience a significant environmental effect as a result of the construction and/or operation of onshore windfarms. This includes species that do not require surveys to inform the EIA but may require appropriate mitigation to ensure legislative compliance, such as breeding passerine species.

5.3.121 As such, the assessment within the EIA Report will be restricted to consideration of the effects upon ornithological features which are considered 'important' on the basis of relevant guidance and professional judgement.

5.3.122 Where ornithological features are unlikely to be so important in the context of the Proposed Development as to warrant a detailed assessment or where they would be unlikely to be significantly affected on the basis of baseline information, it is proposed that these are 'scoped out' of the impact assessment process. Embedded and/or specific mitigation measures for such features may however, still be outlined as appropriate within the EIA Report, to reduce and/or avoid any potentially adverse effects, or to ensure legislative compliance.

5.3.123 The results of the baseline field surveys have not yet been fully analysed and, as such, a full list of impacts upon ornithological features that will be scoped out of detailed assessment within the ornithology chapter of the EIA Report, cannot yet be provided. Those ornithological features for which the evidence indicates there is no need to progress to EIA, are listed below. All other features will be scoped into the EIA, however, only those species identified as important ornithological features shall undergo full ecological impact assessment. Justification for the determination of important ornithological features will be provided in the EIA Report.

Designated Sites for Nature Conservation

5.3.124 The potential for impacts upon the Glen Affric SSSI will be scoped out of detailed assessment within the EIA Report given the spatial separation of the Site from the designation.

5.3.125 The potential for impacts upon the West Inverness-shire Lochs SPA common scoter and black-throated divers qualifying features will also be scoped out of detailed assessment within the EIA Report for the following reasons:

- The Site is located beyond currently advised upper disturbance buffers from the West Inverness-shire Lochs SPA for breeding common scoter (500 m) and black-throated diver (750 m), in accordance with NatureScot guidance (2022);
- No nesting sites of black-throated diver or common scoter have been recorded within proximity to the Site, at distances less than the currently advised upper disturbance buffers, in accordance with NatureScot guidance (2022);

- No flights of common scoter or black-throated diver have been recorded during two years VP flight activity surveys;
- On the basis of evidence from scientific literature and expert opinion reviewed for the adjacent operational Beinneun Wind Farm, common scoter are considered to demonstrate high avoidance of offshore turbines in good visibility, and are unlikely to fly through turbine arrays in good visibility and be at collision risk to the Proposed Development; and,
- Similarly, there is sufficient evidence that common scoter do not fly in conditions of poor visibility when collisions may be more likely to occur.

Common Scoter and Slavonian Grebe

5.3.126 No existing records or observations of common scoter and Slavonian grebe have been made or returned over the course of baseline studies completed. Waterbodies within the vicinity of the Site, are considered relatively unsuitable for the species, due to frequent drying.

5.3.127 The potential for displacement and collision mortality risk to both species, as part of wider countryside populations will therefore be scoped out of detailed assessment within the EIA.

Red-throated and Black-throated Diver

5.3.128 No existing records or observations of black or red-throated diver have been made or returned over the course of baseline studies completed, within 2 km of the Site. Waterbodies within the Site are considered relatively unsuitable for the species, due to frequent drying.

5.3.129 The potential for displacement and collision mortality risk to both species, as part of wider countryside populations will therefore be scoped out of detailed assessment within the EIA.

Passerines

5.3.130 As outlined in NatureScot guidance (SNH, 2017) it is generally considered that passerine species (small perching birds) are not significantly impacted by wind farm developments and baseline surveys for these species are not therefore recommended and have not been completed as part of baseline studies. The potential for significant adverse effects upon passerines in relation to the construction or operation of the Proposed Development will therefore be scoped out of detailed assessment within the EIA Report.

Breeding/Non-Breeding Target Species Recorded Only Occasionally

5.3.131 The potential for significant collision mortality risks to the following target species will be scoped out of detailed assessment within the EIA Report, on the basis of low levels of total flight activity recorded over the two-year baseline VP flight activity survey campaign:

- Greylag goose (1 flight);
- Teal (1 flight);
- Goosander (1 flight);
- Black grouse (1 flight);
- Lapwing (1 flight);
- Golden plover (2 flights);

- Whimbrel (1 flight);
- Grey heron (1 flight);
- Goshawk (2 flights);
- Red kite (2 flights);
- White-tailed eagle (1 flight);
- Merlin (1 flight); and,
- Peregrine (2 flights).

5.3.132 Given the Site is not located within connectivity distances of a SPA or Ramsar Site with non-breeding pink-footed goose qualifying interests (within 20 km), collision mortality risks for pink-footed geese will also be scoped-out of assessment within the EIA Report, and which is in accordance with current NatureScot advice[24].

5.3.133 The potential for displacement impacts upon non-breeding pink-footed and greylag geese will also be scoped-out of assessment with the EIA Report. The Site is not located within or close to any known migratory goose feeding areas (as detailed in Mitchell, 2012[25]) and the habitats within the Site are unsuitable for the species.

Secondary Species

5.3.134 The potential for significant collision mortality risks and displacement impacts to common buzzard, kestrel and raven recorded during VP flight activity surveys will be scoped out of assessment within the EIA Report due to these species being of relatively low conservation concern and low sensitive to wind farm developments, in accordance with NatureScot guidance (2016).

5.3.135

Direct Habitat Loss

5.3.136 The construction of the Proposed Development will result in relatively small permanent and temporary losses of existing moorland habitats within the Site and therefore loss of potentially suitable nesting and foraging opportunities for moorland bird species. These habitats will, however, be largely reinstated following the completion of construction works. Ffull details of habitat losses will be detailed in the Ecology chapter of the EIA Report. Suitable habitats and therefore nesting and foraging opportunities will remain abundant within the Site, and within the immediate and wider surrounding areas. Direct habitat losses are therefore highly unlikely to be significant for any ornithological feature and will be scoped out of detailed assessment within the EIA Report.

Turbine Lighting

5.3.137 As outlined in NatureScot guidance (2022), there is little evidence to suggest that lights on turbines are likely to present an existential risk to the viability of species populations attributable to the Site, at any spatial scale. Impacts from turbine lighting would therefore be considered not to result in potentially significant adverse effects upon any ornithological features relevant to the Site will be scoped out of detailed assessment within the EIA Report.

[24] https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/renewable-energy/onshore-wind-energy/wind-farm-impacts-birds [Accessed 16th October 2023].

[25] Mitchell, C. (2012) Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge.

Questions for Consultees

- Question 5.3.1: Do Consultees agree that the scope of ornithological desk study and field surveys undertaken is sufficient and appropriate to inform an assessment?
- Question 5.3.2: Are there any other relevant consultees/key sources who should be contacted with respect to baseline ornithological information gathering and assessment?
- Question 5.3.3: Do consultees agree with the proposed approach to cumulative impact assessment? Can they provide a specific list of projects that should be considered?
- Question 5.3.4: Do consultees agree with the ornithological features / effects to be scoped out of detailed assessment within the EIA Report?
- Question 5.3.5: Do consultees agree that it is reasonable to consider embedded mitigation at the outset of assessment, and scope those ornithological features for which embedded mitigation will be sufficient to prevent significant effects out of detailed impact assessment?
- Question 5.3.6: Would off-site biodiversity enhancements (within the wider estate boundary) be acceptable for the Proposed Development, or only proposed enhancements within the application boundary should be investigated?

5.4 Hydrology, Geology, Hydrogeology and Peat

Introduction

5.4.1 This section considers the potential effects of the Proposed Development on the hydrology, geology and hydrogeology of the study area. It includes a baseline description of the existing conditions, followed by the proposed assessment method for determining the potential effects to be addressed in the EIA chapter.

Legislation, Policy and Guidance

Legislation:

- The Water Environment and Water Services (Scotland) Act 2003;
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011, as amended;
- The Environmental Protection Act 1990, as amended;
- The Pollution Prevention and Control (Scotland) Regulations 2012;
- The Flood Risk Management (Scotland) Act 2009;
- The Contaminated Land (Scotland) Regulations 2000, as amended.

Policy:

- Scottish Government's National Planning Framework 4 (NPF4);
- Scottish Government's Planning Advice Notes (PAN) with particular reference to:
  - PAN 51: planning, environmental protection and regulation;
  - PAN 61: Sustainable urban drainage systems;
  - PAN 79: water and drainage.

Guidance:

- The Scottish Government, Scottish Natural Heritage (SNH) & Scottish Environment Protection Agency (SEPA)'s Guidance on Developments on Peatland (2017);
- The Highland Council (THC)'s Highland-wide Local Development Plan (2012);
- THC's Onshore Wind Energy Supplementary Guidance (2016);
- Scottish Renewables, NatureScot, SEPA & Forestry Commission Scotland (FCS)'s Good practice during Wind Farm construction Guidance (2019);
- SEPA's Position Statement (WAT-PS-10-01) Assigning Groundwater Assessment Criteria for Pollutant Inputs (2014);
- SEPA's Land Use Planning System (LUPS) Guidance Notes 4 & 31 (2017);
- SEPA's Guidance for Pollution Prevention with particular reference to:
    - GPP 1 Understanding your environmental responsibilities – good environmental practice (2021);
    - GPP 5 Works and maintenance in or near water (2018);
    - GPP 6 Working at construction and demolition sites (2023); and
    - GPP 21 Pollution incident response planning (2021).

Baseline

Study Area

5.4.2 The study area has been defined by professional judgement based on the upland location, nature and size of the Proposed Development, and experience working on similar developments. Due consideration has been given to relevant guidance on hydrological, hydrogeological and geological assessment.

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

Existing Baseline Conditions

Geology

5.4.4 British Geological Survey (BGS) mapping indicates that the Site is predominantly underlain by bedrock from the Tarvie Psammite Formation, part of the Loch Eil Group. Faults are present to the east and west of the Site, mainly oriented south-west to north-east although some faults have an east-west alignment. Superficial deposits consist mainly of peat, with some diamicton till and hummocky glacial deposits of rock debris, clayey till, sand and gravel (BGS, 2023).

Mineral Extraction

5.4.5 BGS GeoIndex (2023) identifies one disused quarry, Beinneun Forest Quarry (ID 230038), within the Site and several more within 2 km of the Site; however, none are active. The Coal Authority (2023) and BGS (2023) indicate that there is no evidence of mining within the study area.

Soils and peat

5.4.6 Soils within the Site consist of peaty podzols, peat and peaty gleys of the Arkaig Association, and blanket peat (Scotland's Soils, 1981). NatureScot's Carbon and Peatland map (Scotland's Soils, 2016) indicates that parts of the Site are underlain by Class 1 and 2 peatland which is described as nationally important carbon-rich soils and priority peatland habitat. Class 3 and Class 5 peat soils are also present within the Site.

5.4.7 Peat depth data provided by the client, available for part of the Site, indicates that depths are variable and pockets of deep peat are present in some areas.

Hydrogeology

5.4.8 The low productivity Northern Highlands aquifer (ID 150701) underlies the Site. Groundwater flow within the aquifer is likely to be predominantly through fractures and other discontinuities. Latest records from 2020 indicate that the groundwater body has an overall status of 'Good' (SEPA, 2023a).

Hydrology

5.4.9 The Site lies across two main river catchment areas – the River Moriston to the north and the River Garry/River Oich system to the south.

5.4.10 The River Moriston lies north of the Site boundary. Within the Site area, the main tributaries are the Allt Phocaichain, Allt a' Chàise, Allt a' Choire Bhuidhe, Allt na Criche and Allt an Eòin.

5.4.11 The River Garry/River Oich system has been highly modified in relation to the construction of the Caledonian Canal. The River Garry forms a tributary to Loch Oich and the River Oich is the main downstream natural outflow from Loch Oich. A small area in the south-east of the application boundary is drained by the Allt na Graidhe, a tributary to the River Oich. The rest of this area lies within the Invervigar Burn catchment, alos a tributary to the River Oich. The south-west of the Site, around Allt Lundie, is drained by the Aldernaig Burn which flows into the River Garry.

5.4.12 In last available records from 2020, The River Moriston (Dundreggan Dam to Bun Loyne) and River Garry (Loch Oich to Loch Garry) were given an Overall status of 'Good ecological potential' (SEPA, 2023a). The River Oich was given an Overall status of 'Good'.

Groundwater-dependent terrestrial ecosystems

5.4.13 Groundwater-dependent terrestrial ecosystems (GWDTE) are areas of wetland or marshy ground that are dependent on groundwater to maintain their function as a wetland or marsh area. Potential GWDTE have been identified in similar habitats on other sites; there is therefore potential for GWDTE to be present within the study area. When NVC surveys have been completed, areas of potential GWDTE will be assessed for their potential groundwater dependency.

Designated sites

5.4.14 NatureScot (2023) indicates that designated sites are present within the study area that have been designated for reasons associated with hydrology, hydrogeology, geology or peat. A risk screening will be undertaken to determine if there is any linkage between the site and these designated areas. The sites are:

- River Moriston (SAC)
- West Inverness-shire Lochs (SSSI)

Private water supplies

5.4.15 THC's private water supply (PWS) data indicates that one PWS is present within the Site and several more are present within 5 km of the application boundary. A PWS risk screening will be undertaken to determine if any of the identified supply sources would be at risk from development in this area.

Flood risk

5.4.16 Flood risk for the Site and immediate area is low. The River Moriston, Allt an Eòin and Allt Phocaichain are indicated to have a high likelihood of flooding and a few small areas are noted to have a high risk of surface water flooding, particularly around Loch nam Faoileag. In all cases, flood risk areas are confined to channels or outlines of waterbodies. A high likelihood of flooding is defined as having a 10% chance of flooding each year (SEPA, 2023b).

5.4.17 The River Garry/River Oich system also has a high likelihood of flooding. Within proximity to the Site, the Allt Dail a' Chuirn (invervigar Burn) and Allt Lundie (Aldernaig Burn) both have a high risk of flooding in their lower sections.

Survey Methodology

5.4.18 A site visit and walkover survey will be undertaken to inform the hydrological and geological assessment and will include:

- verification of information collected during the baseline desk study;
- visual assessment of the main surface waterbodies;
- identification of drainage patterns, areas vulnerable to erosion or sediment deposition and any pollution risks;
- visiting areas of potential GWDTE (in consultation with project ecology team);
- identification of potential watercourse crossings and existing crossings that may require upgrading;
- inspection of rock exposures that may be suitable for borrow pits and establish by probing an estimate of overburden thickness and confirmation of likely substrate; and
- general assessment of the study area including awareness of gradients, access route options, prevailing ground conditions, and the relative location of the components of the Proposed Development.

5.4.19 A Phase 1 peat depth survey has been undertaken for part of the Site. A further Phase 1 peat survey would be undertaken to supplement the existing data in areas of the Site where infrastructure is planned but for which data has not already been collected. This would be undertaken using a 100 m grid and would focus on collecting peat depth and condition data for use in subsequent assessments.

5.4.20 Once a design is available, and if all areas of peat cannot be avoided by proposed infrastructure, a Phase 2 peat probing survey will be undertaken in areas of proposed new infrastructure. This will include peat probing at 50 m centres along all proposed new access tracks, with offsets to either side, and probing on a finer grid at turbine locations. Additional probing will be undertaken as required in areas where existing tracks require

widening or modification at corners or junctions, and at all other infrastructure locations, to ensure that there is sufficient soil and peat depth information to support related studies on peat instability and peat excavation and reuse.

Assessment of Environmental Impacts and their Significance

Potential Impacts

5.4.21 Potential impacts on geology, groundwater, surface water, soils, peatland and public and private water supplies and assets will be assessed. Particular emphasis will be given to potential impacts on water supply assets, watercourses, peatland and on changes to groundwater quality or quantity with respect to GWDTE.

Construction

5.4.22 During the construction phase, potential impacts that will be considered include:

- Physical changes to overland drainage and surface water flow paths;
- Particulates and suspended solids;
- Water contamination from concrete, fuels, oils or foul drainage;
- Changes in or contamination of water supply to vulnerable receptors (including water supply, GWDTE and designated sites);
- Increased flood risk;
- Modification to groundwater flow paths;
- Soil erosion and compaction; and
- Peat instability.

Operation

5.4.23 Operational impacts are anticipated to be considerably reduced from the construction phase. The main potential impacts would be sediment release and pollution events that may affect the quality of public and private water supply intakes, surface water, groundwater and soil/peat.

Decommissioning

5.4.24 During decommissioning, it is anticipated that buried infrastructure (such as turbine foundations) would remain buried to avoid the disruption required for removal, and that all above-ground infrastructure associated with the Proposed Development would be removed. Areas suitable for reinstatement would be fully reinstated. Potential impacts on geology, hydrogeology and ground conditions would be expected to be similar to those during the construction phase, but less extensive.

Cumulative Impacts

5.4.25 An assessment of the impacts of the Proposed Development in combination with, and sequential to, other wind farms within 5 km of the application boundary will be undertaken. The assessment will include wind farms under construction, consented wind farms and wind farms at application stage. Wind farms at scoping stage will not be included. Wind farms that are already operational would be included as part of the baseline description.

5.4.26 Combined hydrological, hydrogeological, geological and soil effects of the Proposed Development with other wind farms will be assessed based on several factors. Due to

the static nature of geology and soils, cumulative effects are likely to be negligible, although cumulative effects arising from peat loss or disturbance would be considered. Hydrogeological and hydrological effects will be assessed by the distance between the developments and flow directions/catchment areas. Designated sites will be assessed on their position in relation to all relevant developments.

Matters Scoped Out

5.4.27 Impacts arising from former mine workings are considered not to require assessment as there are none recorded within the application boundary.

5.4.28 Flood risk to Proposed Development infrastructure is unlikely to be a concern, although changes to flood risk in areas downstream will require consideration.

Description of likely significant effects

5.4.29 There is potential for significant effects on the following receptors:

- Peat, peat soil and peatland;
- Surface watercourses and waterbodies;
- Groundwater;
- Private water supplies;
- Potential GWDTE; and
- Downstream infrastructure and property arising from increased flood risk.

Assessment Methodology

5.4.30 The proposed assessment method involves a combination of desk-based data gathering, site visits and site-specific data collection followed by data analysis to determine the potential significance of effects.

5.4.31 Data will be collated from the following sources:

- Geological maps, including both bedrock and superficial geology;
- Hydrogeological maps, including productivity and groundwater vulnerability;
- Soil Survey of Scotland maps; including Carbon and Peatland mapping;
- High-resolution aerial or satellite imagery of the project area and its immediate surroundings;
- SEPA water quality and flood risk data for the project area;
- Vegetation mapping and the Functional Wetland Typology for Scotland;
- Borehole records, where available. These will be sourced from records held by the British Geological Survey (BGS) and other sources as available;
- Local authority private water supply records;
- Any available utilities and Scottish Water investigations and details of public water supplies and assets;
- Previous assessments carried out in relation to neighbouring wind farm projects and previous studies undertaken in the project area; and
- Data gathered from site visits, including peat depth and vegetation surveys and any material arising from future surveys that may be relevant.

5.4.32 Consultations will be carried out with the following stakeholders and organisations:

- SEPA;

- THC;
- Scottish Water;
- NatureScot;
- Fort Augustus and Glenmoriston Community Council;
- Fort Augustus and Glenmoriston Community Company;
- The Glengarry Trust
- Glengarry Community Council
- The Great Glen Energy Co-op; and
- Local landowners.

5.4.33 Following the desk study and data gathering exercise, a site reconnaissance and walkover survey will be undertaken.

5.4.34 A peat probing and peat condition survey will be undertaken across parts of the Site for which data is not already available, to gain an understanding of the peat depth, variability and condition across the Site.

5.4.35 A constraints map will then be produced to identify areas of higher sensitivity that should be avoided during the design process. This will include areas of deeper peat, sensitive wetlands, steep slopes, watercourses and waterbodies and other relevant constraints to development that are identified during the desk study, such as public and private water supply sources and infrastructure.

5.4.36 Once an infrastructure layout is available, a second peat probing survey will be undertaken. This will visit all areas proposed for infrastructure or development, including borrow pit locations and all turbine bases. Data from the peat probing surveys will be used to inform a peat management plan (PMP) and peat slide risk assessment (PSRA).

5.4.37 The PMP will provide estimated volumes of peat to be excavated, and options for reuse of peat within the Proposed Development. Reuse options will include consideration of peat for reinstatement and restoration purposes, as well as habitat enhancement opportunities where these may be suitable. The PMP will also provide outline methods for peat and soil handling and storage.

5.4.38 The PSRA will provide a formal assessment of the risk of natural or induced peat failure within and adjacent to the project area during the Proposed Development's lifespan. The PSRA will be undertaken in compliance with the Scottish Government's Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2017) and will make use of best practice guidance in the joint Scottish Government, NatureScot and SEPA document Peatland Survey: Guidance on Developments in Peatland (2017). Other relevant guidance will be used where appropriate.

5.4.39 A drainage impact assessment and watercourse crossing inventory will be provided, to ensure that appropriate drainage is designed into the Proposed Development from the outset. This will consider suitable sustainable drainage systems (SuDS) to manage and treat runoff arising from the Proposed Development. Outline watercourse crossing designs will be prepared, to ensure that suitable crossing structures are proposed for each location.

5.4.40 An assessment will be made of the potential direct, indirect, cumulative and in-combination effects of the Proposed Development on hydrology, hydrogeology, geology

and soils. Where relevant, mitigation and control measures will be put forward in order to manage or mitigate any potential impacts to sensitive receptors that may arise from the Proposed Development. A hierarchy of mitigation strategies will be devised and will follow best practice guidance including the Guidelines for Pollution Prevention (GPP and PPG), the Water Environment (Controlled Activities) (Scotland) Regulations: A Practical Guide (2023) and relevant SEPA policies and guidance.

5.4.41 Effects significance is assessed using a matrix based on sensitivity of the receptor, magnitude of effect and likelihood of effect. Four levels of significance are applicable: Negligible, Low, Moderate and High. Moderate and High are considered to be significant in terms of the EIA Regulations.

Sensitivity of Receptor

Table 5.17: Sensitivity of receptor criteria

Sensitivity of Receptor	Criteria
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 e.g. Special Areas of Conservation (SAC), Ramsar Sites.
Medium	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 e.g. National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI).
Low	The receptor has moderate capacity to absorb change without significantly altering its present character, has moderate environmental value and/or is of regional importance e.g. Geological Conservation Review (GCR) sites.
Negligible	The receptor is tolerant of change without detriment to its present character, is of low environmental value and/or of local importance e.g. Local Nature Reserves (LNR), Local Geodiversity Sites.

Magnitude of Impact

Table 5.18: Magnitude of impact criteria

Sensitivity of Receptor	Criteria
High	Substantial changes, over a substantial area, to key characteristics or to the hydrological/hydrogeological/ geological/peatland classification or status for more than 2 years.
Medium	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 hydrological/ hydrogeological/geological/peatland classification or status.
Low	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 of effect

5.4.42 The likelihood of an effect occurring is evaluated to three levels: **unlikely**, **possible** or **likely**.

Significance of Effect

Table 5.19: Significance of effect 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

Sensitivity	Magnitude	Likelihood	Significance
		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

Additional (secondary and tertiary) mitigation

5.4.43 Key additional mitigation during the construction phase includes:

- Surface water and sediment management;
- Pollution prevention, emergency procedures and spill management;
- Watercourse crossing and drainage design;
- Peat management and peat handling; and
- Peat slide risk factors and management.

5.4.44 The main operational mitigation includes:

- Ongoing monitoring of water quality, drainage infrastructure and track status;
- Sediment management during maintenance; and
- Pollution prevention, emergency procedures and spill management.

Opportunities for enhancing the environment

5.4.45 The widespread coverage of peat at the site suggests that peatland restoration may be appropriate for parts of the Site, particularly in areas with eroding peat or locations where attempts have been made to drain peaty areas. This would be discussed with the terrestrial ecology team as there is overlap with habitat enhancement, management and potential net gains from a co-ordinated approach.

Difficulties and uncertainties

5.4.46 To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified.

5.4.47 Weather conditions during site surveys can affect the geographical coverage and quality of data collected. For example, under some circumstances weather conditions can make it too dangerous to access certain areas; preceding weather conditions can influence the appearance of watercourses and ground conditions e.g., very wet weather may lead to over-estimation of ground wetness or watercourse size. Use of professional judgement and field experience can help to mitigate this; also scheduling site visits outwith the main winter period (November to February) reduces the risk of dangerously stormy weather.

5.4.48 Private water supply data relies on information held by the Highland Council. This has been supplied by property owners and may be incomplete. Property owners/tenants may not be aware of details of their own supplies. Attempts will be made to verify supply details. Where this is not possible, a worst-case scenario will be assessed and contingency mitigation measures provided.

Questions for Consultees

- Do consultees agree with the topics scoped in and out of the assessment?
- Do consultees agree the methodology proposed for collation of baseline data and assessment is acceptable?
- Do consultees have information not outlined in this Scoping Report which would be of relevance to this assessment?
- Are there any other key stakeholders or organisations that should be consulted about the hydrology, hydrogeology, geology and peat assessment?
- Is there any additional mitigation you would expect to be required in the design of the Proposed Development?

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5.5 Archaeology and Cultural Heritage

Introduction

5.5.1 The cultural heritage chapter of the EIA Report will characterise the historic environment within the Site and in the wider area. Consultation, desk-based research including field visits, a zone of theoretical visibility (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.

5.5.2 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. This chapter of the EIA Scoping Report is thus 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.

5.5.3 Direct and indirect physical effects involve alteration or destruction of the fabric of heritage assets and could result from the construction of turbine and crane bases, new or upgraded access tracks, substation, transformers, cables etc.

5.5.4 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.

5.5.5 Cultural significance is a quality that applies to all heritage assets and as defined by Historic Environment Scotland (HES) (NatureScot & HES 2018, Appendix 1 page 175), 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 HES's guidance as "the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated" (HES 2016, updated 2020, Section 1).

5.5.6 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.

5.5.7 This use of the word cultural 'significance', referring to the range of cultural values or interest attached to an asset, should not be confused with the unrelated usage in EIA

where the ‘significance of an effect’ reflects the weight that should be attached to it in a planning decision.

5.5.8 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 (including Conservation Areas and areas included in the Inventory of Gardens and Designed Landscapes). It is recognised that all landscapes have a historic dimension, and this will be considered as part of the assessment of Landscape Character (to becovered in the LVIA chapter of the EIA Report). Further, 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

5.5.9 It is proposed that the 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;
- 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).
- Planning Advice Note (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 (DPSG), (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 (MCHE): Setting (Historic Environment Scotland (HES) 2016, updated 2020), and any other relevant MCHE 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).

Baseline

Study Areas

5.5.10 Overlapping study areas are proposed for the identification of heritage assets that may be affected by the Proposed Development:

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

5.5.11 Within the Site, all known and potential heritage assets will be assessed for potential direct, setting and indirect effects.

5.5.12 In addition, the potential site access route will be included in the planning application. For the most part this will follow existing roads/tracks and no archaeological impacts are anticipated, however, any works proposed to widen the existing roads/tracks or construction of new tracks will be surveyed and assessed as part of the Application Boundary.

5.5.13 Within the OSA, assets will be included in the assessment based on the level of importance assigned to the asset so as 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 20 km from proposed turbines: World Heritage Sites, Category A Listed Buildings, Inventory Gardens and Designed Landscapes, and Scheduled Monuments.
- Up to 5 km from proposed turbines: Inventory Historic Battlefields, Conservation Areas and Category B Listed Buildings.
- Up to 2 km from proposed turbines: Category C Listed Buildings and non-designated heritage assets.

5.5.14 In addition, beyond the OSA as defined above, 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 opinion of the assessor or consultees will be included in the assessment.

5.5.15 The baseline will be screened (and agreed with relevant consultees) to identify any assets of particular sensitivity or importance. Criteria for the identification of assets of particular sensitivity or importance will be based on the approach set out in Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016, updated 2020) that sets out 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."*

Existing Baseline Conditions

5.5.16 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;
- National Record of the Historic Environment (NRHE) data comprising the Canmore database.

Application Boundary

5.5.17 There are no designated heritage assets within the Site. There is one known non-designated heritage asset recorded:

- Carn Mhic Raonuill cairn/cist, NRHE 298131, NGR: 229388 807869

5.5.18 This is located to the southern extent of the Site to the south east of the trig point of Carn nan Mhic Raonuill at 550 m AOD.

5.5.19 Hitherto unknown remains may be focussed on the resource of Moriston River to the north side of the Site and the River Oich to the south. Any additional assets identified through desk-based assessment during EIA will be ground-truthed through field visits.

Outer Study Area

5.5.20 Within 2 km of the Site there are three Scheduled Monuments, one Category C Listed Building and 43 non-designated heritage assets. The Scheduled monuments comprise Tir nan Og prehistoric cairn (SM11494), the Fort Augustus-Bernera military road, 570m SE of Achlain (SM11483) and Balnacarn, township (SM11482). The Listed Building is Achlain House (LB14995). These are all situated within Glenmoriston to the north of the Site.

5.5.21 Within 2-5 km of the Site there are six Scheduled Monuments, four of which are associated with the Caledonian Canal (SM5291, SM794, SM6496 and SM5293). The

remaining Scheduled Monuments comprise Torr Dhuin prehistoric fort (SM7994) and Dundreggan Farm medieval motte (SM11875). The area also includes one conservation area at Fort Augustus, one Category A Listed Building (Torgyle Bridge, LB14996) and five Category B Listed Buildings. These are mainly situated within the two valleys to the north and south of the Site.

5.5.22 Within 5-10 km of the Site there are 10 Scheduled Monuments including three associated with the Caledonian Canal and four with the 18th century military roads in the area. The study area also includes three Category A Listed Buildings, one of which is also a Property in Care (Bridge of Oich: LB1872/PiC327). These are mainly situated within the valleys to the north and south of the Site.

5.5.23 Within 10-20 km of the Site there are seven Scheduled Monuments, three of which are associated with the military roads and one with the Caledonian Canal. Four Category A Listed Buildings are also present in this study area.

5.5.24 There are no Inventory Battlefields within the 5 km OSA and no World Heritage Sites within the 20 km OSA.

Survey Methodology

Desk Based Assessment

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

- Designation data downloaded from Historic Environment Scotland;
- Historic Environment Record (HER) data, digital extract from THCHET;
- 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 (NCAP);
- 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).

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

5.5.27 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. Areas of proposed infrastructure 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 handheld (i.e., navigation grade) GPS.

Stage 1 Setting Assessment

5.5.28 Likely significant effects on the settings of heritage assets will be identified 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 Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016, updated 2020) and the Environmental Impact Assessment Handbook (Ver 5, NatureScot & HES, 2018, Appendix 1). The guidance sets out three stages in assessing the impact of development on the setting of 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."*

5.5.29 The Stage 1 Setting Assessment methodology considers 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 harmed by the Proposed Development. Where heritage assets are located outwith the ZTV, viewpoints within the ZTV which may provide a key view towards the heritage asset and the Site are considered.

5.5.30 Following scoping consultation with national and regional curators Historic Environment Scotland (HES) and The Highland Council Historic Environment Team (THCHET) will be undertaken to agree the viewpoints for the EIAR setting assessment through provision of a desk-based assessment and Stage 1 Setting Assessment.

Visualisations

5.5.31 Where the Stage 1 Setting Assessment identifies the potential for a significant effect, the asset will be visited to define baseline conditions and identify key viewpoints.

5.5.32 Wireframe visualisations will be used in tandem with the ZTV to understand the likely nature of change in the setting of heritage assets. Visualisations will be prepared to illustrate changes to key views where potentially significant effects are identified.

5.5.33 Consultation with national and regional curators (HES and THCHET) will be undertaken to agree the viewpoints for the EIAR setting assessment.

Assessment of Environmental Impacts and their Significance

5.5.34 To assess the effect of the Proposed Development upon cultural heritage, the significance of any effect is calculated 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, including 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.
- 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; or 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. 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.
- Effects from cumulative developments will also be considered. Cumulative impacts 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 projects already in the planning system or allocated in a Local Development Plan.

5.5.35 Likely significant effects on unknown heritage assets will be discussed in terms of the risk 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.

Potential Impacts

5.5.36 Assessment of impacts is an iterative part of the design process.

5.5.37 Data from desk-based and site-based sources will be gathered in a GIS and the cultural heritage team will work throughout the EIA process with colleagues and consultees to understand potential effects, providing input into design measures to address them.

Construction

5.5.38 Wind projects typically have minimal ground impacts compared to the Application Boundary with scope for micro siting to avoid direct physical impacts to archaeological remains during construction.

5.5.39 Any Site infrastructure associated with the Proposed Development will be designed to avoid identified heritage assets. Should any previously unknown heritage assets be noted during the desk-based assessment or field visit, any infrastructure associated with the

Proposed Development such as internal Site access tracks will take into account the presence of these heritage assets and aim to avoid them through design.

5.5.40 Precautionary measures to avoid accidental impacts may be employed such as fencing off heritage assets during construction works. Cultural heritage constraint areas will, where appropriate, be defined to include an appropriate buffer around known heritage assets. Proposed ground works in constraint areas may lead to direct effects.

5.5.41 Whilst it is not possible to avoid unknown archaeological remains that may be within the Site at the design stage (i.e., 'archaeological potential'), proposed mitigation measures will include consideration of prospection during construction to address the possibility of direct impacts on buried remains. 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.

5.5.42 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 (NPF4 Policy 7.o and PAN2/2011 sections 25-27).

Operation

5.5.43 Design will take into account any identified likely significant effects of the Proposed Development on the settings and cultural significance of any additional heritage assets identified during Stage 1 Setting Assessment in the OSA.

5.5.44 For example, design will seek to ensure that the Proposed Development will 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 of a heritage asset as outlined in Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016, updated 2020) summarised in this Scoping Report above.

5.5.45 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.

Matters Scoped Out

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

5.5.47 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.

5.5.48 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 will not occur. Any residual operational phase setting effects will be reversed. Decommissioning effects are therefore proposed to be scoped out of the assessment.

Assessment Methodology

5.5.49 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.

Importance of Receptor

5.5.50 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.

Table5.20: 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)	Inventory Gardens and Designed Landscapes, Scheduled Monuments, Protected Wreck Sites, Inventory Historic Battlefields, Category A Listed Buildings, Historic Marine Protected Areas, and other assets of equivalent importance that contribute to national research objectives
Medium (Assets valued at Regional level)	Conservation Areas, Category B Listed Buildings, non-designated assets of regional importance except where their particular characteristics merit a higher level of importance, and other assets that contribute to regional research objectives
Low (Assets valued at Local level)	Category C Listed Buildings and locally listed (non-designated) heritage assets, except where their particular characteristics merit a higher level of importance. Non-designated heritage assets of Local importance, including assets that may already be partially damaged

5.5.51 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

5.5.52 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).

5.5.53 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.

5.5.54 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.

5.5.55 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).

Table5.21: Criteria for Assessing the Magnitude of Impacts on Heritage Assets

Magnitude of Impact	Criteria
High Beneficial	Alterations to an asset and/or its setting resulting in considerable increase in appreciation, understanding or experience awareness of the asset's cultural significance; Or Preservation of an asset and/or its setting where it would otherwise suffer considerable loss of cultural significance in the do-nothing scenario.
Medium Beneficial	Alterations to an asset and/or its setting resulting in moderate increase in appreciation, understanding or experience awareness of the asset's cultural significance; Or Preservation of an asset and/or its setting where it would otherwise suffer moderate loss of cultural significance in the do-nothing scenario.
Low Beneficial	Alterations to an asset and/or its setting resulting in a slight increase in appreciation, understanding or experience awareness of the asset's cultural significance; Or Preservation of an asset and/or its setting where it would otherwise suffer slight loss of cultural significance in the do-nothing scenario.
Negligible / No Impact	No material change upon appreciation, understanding or experience awareness of heritage asset's cultural significance.
Low Adverse	Alterations to an asset and/or its setting resulting in a slight loss of cultural significance or appreciation, understanding or experience awareness of the asset's cultural significance.
Medium Adverse	Alterations to an asset and/or its setting resulting in a moderate loss of cultural significance or appreciation, understanding or experience awareness of the asset's cultural significance.
High Adverse	Alterations to an asset and/or its setting resulting in a considerable loss of cultural significance or appreciation, understanding or experience awareness of the asset's cultural significance.

Significance of Effect

5.5.56 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.

Table5.22: 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

5.5.57 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.

5.5.58 Major and Moderate effects are regarded as 'significant' in EIA terms, while Minor and Negligible effects are 'not significant'.

5.5.59 In all cases conclusions will also be expressed in terms of the relevant Policy tests

Questions for Consultees

- Do consultees agree with the proposals for 'Matters Scoped Out' in this Scoping Report?
- Are consultees content with the proposed Outer Study Area buffers presented in this Scoping Report?
- Are there any other relevant consultees other than HES and the Council who should be contacted with respect to the Cultural Heritage and Archaeology assessment?
- Do consultees wish to request any specific heritage assets to be assessed in the EIAR?

5.6 Traffic and Transport

Introduction

5.6.1 This chapter sets out the proposed scope and approach to assessing potential direct and indirect impacts of the proposed development on access, traffic and transport during construction, operation and decommissioning phases. Within this chapter, preliminary baseline data will be presented and potential effects that may arise as a result of the proposed development will be outlined. Cumulative effects will also be assessed.

5.6.2 The methodology presented in this chapter builds upon the general assessment methodology summarised in Chapter 4 (EIA Process and Methodology) of this Scoping Report.

Legislation, Policy and Guidance

5.6.3 The proposed development has the potential to introduce impacts during construction, operation and decommissioning relating to traffic. The environmental effects of traffic will be assessed in accordance with the following principal sources:

- Institute of Environmental Management and Assessment (IEMA) (1993). Guidelines for the Environmental Assessment of Road Traffic;
- LA104, Environmental assessment and monitoring, Design Manual for Roads and Bridges (DMRB) (Standards for Highways, 2020);
- Transport Scotland (2012) Transport Assessment Guidance;
- Scottish Government, Planning Advice Note (PAN) 75, Planning for Transport; and;
- Highland Council (2016), Adopted Onshore Wind Energy Supplementary Guidance.

Baseline

5.6.4 A Site Location Plan is presented in **Figure 2.1**.

Study Area

5.6.5 Preliminary routing assessments of the Wind Turbine Generator (WTG) components – blade and tower section – have been carried out. PoE has been identified as Port of Kyle of Lochalsh for turbine blades and Corpach Harbour for tower sections and other large components. Routing of the components to the site will include sections of the A87, A887, A830 and A82. General construction traffic will transport materials and personnel to/from the site. It is assumed that materials will be sourced locally and will also use parts of the listed roads.

5.6.6 The indicative study area is outlined in **Figure 5.6.1** (including the Abnormal Indivisible Load (AIL) transport routes), subject to Local Road Authority (LRA) approval.

Existing Baseline Conditions

5.6.7 A preliminary review of the DfT online traffic data portal suggests that historic traffic counts are available for most of the main roads in the area up towards the Proposed Development. Data for more local roads is less evident, therefore depending on the chosen access routes and points, additional surveys may be required. This requirement would be refined through the project development and scoping dialogue.

5.6.8 No information on land ownership/roads boundary is known at this stage but would be relevant based on the access location if alterations are required.

5.6.9 The land use surrounding the Site is generally agricultural fields, forestry and local road network.

Assessment Methodology

5.6.10 The study area for the assessment will focus on the routes used for access by construction vehicles and AILs.

5.6.11 Effects during the operation of the proposed development will be limited, with no more than occasional journeys by domestic scale vehicles during routine maintenance, and therefore these effects are proposed to be scoped out of the access, traffic and transport assessment.

5.6.12 A desk-based review of the impacts arising from the construction of the proposed development will be undertaken, including the following:

- Collection and analysis of available road traffic accident data over the study area;
- Determination of a construction phase programme and quantification of construction phase trips based on the quantity of material required for the proposed development (including generation as a result of potential forestry removal, commercial or otherwise) and the duration of the construction phase;
- Determination of a traffic baseline, taking account of measured existing traffic flow and other developments that have been identified for inclusion within the cumulative assessment and;
- Quantification of material increases in traffic resulting from the construction phase of the proposed development.

5.6.13 A visual inspection of the study area will be carried out to ensure a full understanding of the local area and to identify all sensitive receptors. 24-hour Automatic Traffic Counts (ATCs) data will be obtained from the Department for Transport (DfT), Transport Scotland (TS) or the Highland Council (THC) and where not available / suitable, ATC surveys will be undertaken.

5.6.14 The most recent available five-year injury accident data will be obtained for the local and strategic road network in the study area from the DfT, THC and TS to identify any existing issues which may require to be addressed as part of the study.

5.6.15 Data gathered and processed for the access, traffic and transport assessment will be prepared in a suitable format to inform the Air Quality and Noise impact subject areas which are considered separately in **Section** Noise and Vibration**5.7** of this Scoping Report.

5.6.16 An assessment of the Site will be undertaken to establish whether there are any suitable areas that can be used for borrow pits. The availability of suitable material from on-site borrow pits will be factored into transport movements associated with construction activities which would be reduced as a result.

Assessment of Environmental Impacts and their Significance

5.6.17 Assessment of the 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 Assessment, 2023). This guidance provides two broad rules to be used as a screening process to identify the appropriate extent of the assessment area and likelihood of impacts. These are:

5.6.18 **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%)'; and

5.6.19 **Rule 2** – 'Include any other specifically sensitive areas where traffic flows would increase by 10% or more.'

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

5.6.21 Given that the day-to-day variation of traffic on a road is frequently at least plus or minus 10%, the Guidelines consider that projected changes in traffic flows of less than 10% create no discernible environmental impact, hence the second threshold as set out in Rule 2.

5.6.22 The specific traffic and movement related impacts 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.

5.6.23 The traffic and transport assessment will also be based on LA104 Environmental assessment and monitoring, from the Design Manual for Roads and Bridges (DMRB) (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.

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

5.6.25 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.

5.6.26 For specific criteria relating to the assignment of significance to the various traffic and transport impacts that may occur as a result of the proposed development, please refer to the updated IEMA Guidelines (2023) for the Environmental Assessment of Traffic and Movement.

Data Sources to Inform EIA Baseline Characterisation

5.6.27 For the 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 (DfT) and the relevant LRA where available. Any data gaps in this information will be supplemented with specifically commissioned traffic surveys.

Surveys to Inform EIA Baseline Characterisation

5.6.28 Traffic survey data from DfT or Transport Scotland traffic count databases are to be utilised and considered in line with traffic estimate data provided by the pplicant for the construction phase. All of the count points noted below have either data from 2019 (pre-COVID-19) or 2022 (or both):

- 30776 (A87);
- 10770 (A87);
- 50772 (A87);
- 768 (A87);
- 80594 (A87);
- 10760 (A82);
- 40958 (A887);
- 00793 (A830);
- 00759/91196 (A82) and;
- 40762 (A82).

Receptors/Matters to be Scoped in for Further Assessment

5.6.29 **Table 5.23** lists receptors/elements that are proposed to be scoped in for further assessment.

Table 5.23: Receptors/Matters to be Scoped in for further Assessment

Receptor/Matter	Phase	Justification
A-road A87	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 as yet unknown, as such this phase of works has been scoped in to enable consideration of impacts on receptors within the study area against the Environmental Assessment of Traffic and Movement (Institute of Environmental Assessment (IEMA) Guidelines) (2023).

Description of Likely Impacts

Construction

5.6.30 Turbine components will be transported by sea to a defined Port of Entry from where components would be brought to Site by abnormal load vehicles via an agreed route.

5.6.31 General construction material will need to be transported to the Site in standard HGVs, leading to a temporary increase in traffic volumes on the surrounding road network. This will be dependent on the Proposed Development construction material quantities required and their source which is unknown at this time, and 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.

Operation

5.6.32 Apart from occasional maintenance visits to service the Proposed Development, the operational phase is not considered to introduce a significant increase in traffic. It is therefore considered that no significant effects will arise during the operational phase and therefore the operational phase is **scoped out** of further assessment.

Decommissioning

5.6.33 The levels of traffic associated with decommissioning are anticipated to be lower than those required during the construction phase, therefore will have a reduced impact compared to that assessed for construction phase. It is therefore proposed to scope out the assessment of the proposed development's decommissioning impacts as part of the EIA.

Cumulative Impacts

5.6.34 The anticipated cumulative effects of the potential for overlapping construction programmes for the proposed development in addition to other development proposals will be considered. The mechanism for mitigation of any cumulative effects is the implementation of a CTMP. It should be noted that a cumulative assessment in relation to transport and traffic is reliant on the prospect of more than one development being under construction (or operation, where this is applicable) at the same time as the proposed development.

Matters Scoped Out

5.6.35 **Table 5.24** lists receptors/elements that are proposed to be scoped out of the assessment.

Table 5.24: Receptors/Matters to be Scoped out of Further Assessment

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. Therefore, it is not expected that the

		changes in 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, therefore will have a reduced impact compared to that assessed for construction phase. It is therefore proposed to scope out the assessment of the proposed development's decommissioning impacts as part of the EIA.

Assessment Methodology

Sensitivity of Receptor

5.6.36 The potential sensitivity of receptors to change in traffic levels has been determined by considering the Study Area and the presence of receptors in relation to each potential impact.

5.6.37 The IEMA guidelines provide two thresholds when considering predicted increase in traffic, whereby a full assessment of impact would be required:

- Where the total traffic would increase by over 30% or more (10% in sensitive areas); and/or
- Where the HGV traffic would increase by over 30% or more (10% in sensitive areas).

5.6.38 At request from the THC during Scoping, the use of the threshold value for significance of 10% rather than the 30% for the traffic and transport issues has been used for roads where THC is the Local Road Authority (LRA) (i.e. A87 and A887).

5.6.39 In this context, the IEMA guidelines do not define the value placed on the receptors and therefore their sensitivity; therefore, the assessor makes a professional judgement based on experience and the nature of the Study Area. Each receptor has been assessed individually to determine its sensitivity and the assessment criteria chosen are shown in **Table 5.25**.

Table 5.25: Sensitivity of receptor criteria

Impact	Low Sensitivity	Medium Sensitivity	High Sensitivity
Driver Severance & Delay	Road Network not affected	Road Network not experiencing congestion at peak times	Road Network experiencing congestion at peak times
Community Severance & Delay	No presence of existing communities severed by road	Presence of existing communities with a moderate level of existing severance (subjective assessment)	Presence of communities with existing severance (subjective assessment)

Impact	Low Sensitivity	Medium Sensitivity	High Sensitivity
Noise	No sensitive receptors	Presence of sensitive receptors near to the road	Presence of sensitive receptors adjacent to the road
Road Safety	High sensitivity receptor		
Vulnerable Road Users	High sensitivity receptor		
Wider Disruption due to dangerous loads	No hazardous or dangerous loads on the road network	Some hazardous or dangerous loads on the road network. Loads are generally permitted on UK roads	Abnormal and oversized loads to use road network
Dust & Dirt	Limited presence of sensitive receptors (subjective assessment)	Low to Medium presence of sensitive receptors (subjective assessment)	High presence of sensitive receptors (subjective assessment)

Magnitude of Impact

5.6.40 The magnitude of impact is undertaken by considering the parameters of the Proposed Development, establishing the scope of the receptors that may be affected and quantifying these effects utilising IEMA Guidelines and professional judgement. The magnitude of impact or change has been considered according to the criteria defined in **Table 5.26**.

Table 5.26: Magnitude of impact criteria

Impact	Negligible	Minor	Moderate	Major
Driver Severance & 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	>10% and <30% Increase in traffic	30% - 60% Increase in traffic	> 60% Increase in traffic
Noise	< 25% Increase in traffic	> 25% Increase in traffic. Quantitative assessment based on predicted increase in traffic against measured baseline (See **Chapter 12: Noise**)		
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	>10% and <30% Increase in traffic	30% - 60% Increase in traffic	> 60% Increase in traffic

Impact	Negligible	Minor	Moderate	Major
Dust & Dirt	< 10% Increase in traffic	>10% and <30% Increase in traffic	30% - 60% Increase in traffic	> 60% Increase in traffic

Significance of Effect

5.6.41 Sensitivity and magnitude of change as assessed under the detailed criteria have then been considered collectively to determine the potential effect and their significance. The collective assessment is an assessment undertaken by the assessor, based on the likely sensitivity of the receptor to the change (e.g., is receptor present which would be affected by the change), and then the magnitude of that change. **Table 5.25** sets out receptor sensitivity. **Table 5.26** sets out the levels of magnitude of impact. The Significance of Effect in **Table 5.29** is reached by combining the Sensitivity of Receptor against the Magnitude of Impact. **Table 5.29** is used as a guide to determine the level of effect. 'Major' and 'Moderate' effects are considered to be 'Significant' in terms of the relevant guidance.

Table 5.27: Significance of effect matrix

	Magnitude of Impact			
Sensitivity of Receptor	High	Medium	Low	Negligible
High	**Major**	**Major**	**Moderate**	Minor
Medium	**Major**	**Moderate**	Minor	Negligible
Low	**Moderate**	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

Potential Cumulative Effects

5.6.42 An assessment of the cumulative effect on the Study Area of all relevant developments, including local wind farms, within a 5 km radius of the site (either in planning system or under construction) which may utilise the same access routes as the Proposed Development, has been undertaken.

Difficulties and Constraints

5.6.43 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 outlined within Chapter 2;
- The overview of baseline conditions is based on desk-based studies only at scoping stage and is based on data available at the time of writing;
- The construction 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; and

- 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.

Questions for Consultees

- Do you agree with the proposed list of consultees?
- Do you agree with the proposed study areas?
- Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?
- Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?
- Are any receptors/assets/resources not identified that you would like to see included in the EIA?
- Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?
- Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?
- Do you agree with the proposed factor-specific assessment approach?

5.7 Noise and Vibration

Introduction

5.7.1 During their operation, wind farms have the potential to create noise effects through both aerodynamic noise and mechanical noise. Aerodynamic noise would be caused by the interaction of the turbine blades with the air. Mechanically generated noise would be 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.

5.7.2 During construction and decommissioning, noise and vibration could arise from both onsite activities, such as the construction of onsite access tracks, turbine foundations, the control building (substation) etc. and also from the movement of construction related traffic both on the Site and travelling on public roads to and from the Site.

5.7.3 This chapter, which was prepared by Hoare Lea, sets out the proposed approach to the assessment of potential effects of noise and vibration on nearby noise-sensitive receptors.

Legislation, Policy and Guidance

5.7.4 The noise assessment will be undertaken with reference to the following documents:-

- Scottish Government (2022) - Onshore wind - policy statement 2022, December 2022.
- Scottish Government (2011) Planning Advice Note 1/2011: Planning & Noise.
- Scottish Government (updated 28 May 2014) Online Renewables Planning Advice, Onshore Wind Turbines (https://www.gov.scot/publications/onshore-wind-turbines-planning-advice).
- The Working Group on Noise from Wind Turbines (1996) ETSU-R-97, the Assessment and Rating of Noise from Windfarms, Final Report for the Department of Trade & Industry.
- M. Cand, R. Davis, C. Jordan, M. Hayes, R. Perkins (2013). A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, Institute of Acoustics.
- Bowdler et al (2016) Wind farms cumulative impact assessment, Institute of Acoustics Noise Bulletin Vol. 41 No. 1, Jan/Feb 2016.
- The Highland Council, Onshore Wind Energy Supplementary Guidance, November 2016 incorporating Addendum Supplementary Guidance: 'Part 2b', December 2017.
- British Standards institute (2014) BS 52281:2009A:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise.
- British Standards institute (2014) BS 52282:2009-A:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.
- Scottish Government (1996) Planning Advice Note 50: Controlling The Environmental Effects of Surface Mineral Workings.
- British Standards institute (2008) BS 6472-2:2008:Guide to evaluation of human exposure to vibration in buildings - Part 2: Blast-induced vibration.
- HMSO Department of Transport (1988) Calculation of Road Traffic Noise

- The Highways Agency, Transport Scotland, Transport Wales and The Department for Regional Development (Northern Ireland) (2020) Design Manual for Roads and Bridges, LA 111 Noise and vibration, revision 2.

5.7.5 NPF4 requires consideration of potential noise impacts for developments such as this but provides no specific advice on noise. Planning Advice Note PAN1/2011 provides general advice on preventing and limiting the adverse effects of noise without prejudicing economic development. It makes reference to noise associated with both construction activities and operational wind farms.

5.7.6 The web-based planning advice note on 'Onshore wind turbines' provides further advice on noise, and confirms that the recommendations of ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms', *"should be followed by applicants and consultees, and used by planning authorities to asses and rate noise from wind energy developments"*.

5.7.7 Good practice in the application of the ETSU-R-97 methodology will be referenced, as set out in Institute of Acoustics Good Practice Guide to the Application of ETSU-R-97 (or IOA GPG). This includes guidance on the assessment of cumulative operational noise impacts from wind farms, and on this point, further guidance set out in a 2016 article in the Institute of Acoustics Noise Bulletin will also be considered.

5.7.8 Continued use of ETSU-R-97 was confirmed in the Scottish Government Onshore wind policy statement 2022 which confirms *"ETSU-R-97 provides the framework for the measurement of wind turbine noise, and all applicants are required to follow the framework and use it to assess and rate noise from wind energy developments"*. Furthermore, the policy statement recognises the IOA GPG *"as a useful tool which developers can use in conjunction with ETSU-R-97"*.

5.7.9 The Highland Council have Supplementary Guidance for onshore wind energy. In relation to noise from onshore wind turbines, this guidance states that *"Highland Council's expectation is that all proposals will seek to achieve noise limits at sensitive locations that are at the lower end of the range indicated in national guidance, and we may seek limits lower than that in certain circumstances"*. This refers to the guidance provided in ETSU-R-97 that during the fixed part of the day-time noise limit should be set between 35 dB(A) and 40 dB(A). The expectations of The Highland Council would be considered within the noise assessment.

5.7.10 PAN1/2011 and the Technical Advice Note accompanying PAN1/2011 provide further advice on construction noise and makes reference in particular to British Standard BS 5228.

Baseline

Study Area

5.7.11 The assessment will consider noise sensitive residential locations in the vicinity of the Proposed Development. Specifically, ETSU-R-97 states that noise levels will be considered acceptable, even in the absence of measured baseline data, if predicted noise levels (including cumulative contributions from all wind farms) do not exceed 35 dB L_{A90}. This is often referred to as the simplified ETSU-R-97 noise assessment methodology.

5.7.12 Therefore, the Study Area will encompass dwellings where cumulative predicted levels exceed, approach or are likely to approach this 35 dB L_{A90} threshold, provided the specific

contribution of the Proposed Development is not acoustically negligible relative to that of the other nearby schemes, including those wind turbines built and operating and those which are proposed within the planning system. The assessment will focus on properties located in the Highland Council area.

5.7.13 Noise sensitive residential locations will also be potentially affected by noise or vibration effects from the construction of the Proposed Development infrastructure. In addition, dwellings located along the site access track or transport route will also be considered in relation to construction traffic.

Existing Baseline Conditions

5.7.14 The Site is located in an area of generally low population density, with a number of individual noise-sensitive dwellings located several kilometres from the wind turbines on the Proposed Development and those operating on the adjacent Millennium Wind Farm. The background noise environment for these dwellings would mainly be influenced by natural noise sources such as wind-disturbed vegetation, water courses and birdsong as well as localised activities such farming operations, with some exposed to localised road traffic noise. There could also be a varying influence in the ambient noise environment from operating wind farms and individual small scale wind turbines.

Survey Methodology

5.7.15 Many of the nearby noise sensitive residential locations may have cumulative predicted noise levels below 35 dB L_{A90} and therefore potentially assessed using the simplified ETSU-R-97 assessment methodology. However, an initial review of the baseline data surveyed for other wind farm schemes, and which are publicly available for the assessments for those schemes, suggests that some were assessed using the full ETSU-R-97 assessment methodology, based upon measured background noise levels. Accordingly existing baseline levels may have been sufficiently defined for the purposes of an assessment of operational noise in accordance with ETSU-R-97 and best practice.

5.7.16 The Millennium Wind Farm consent noise limits[26] relate to background noise surveys which were completed for the original noise assessment at two locations in 2003[27]. The adjacent proposed Tomchrasky Wind Farm also completed a background noise survey at four locations during August 2022[28] for the assessment of operational noise according to ETSU-R-97. Therefore, undertaking additional noise monitoring is not anticipated to be necessary.

5.7.17 The potential implication of wind shear effects due to the heights of the turbines to be considered for the Proposed Development can be taken into account in line with best practice, with relevant wind speed references used for existing baseline surveys and noise limits reviewed, and the application of correction factors where necessary.

5.7.18 The need for undertaking surveys and suitability of existing baseline background noise surveys to represent the Proposed Development would however be subject to further

26 Consent and deemed planning permission, Increase in Capacity of the Millennium Wind Powered Electricity Generating Station, Aug 2009 (https://www.energyconsents.scot/ApplicationDetails.aspx?cr=EC00005220).

27 Referenced for the noise assessment in the Millennium South Wind Farm Environmental Statement, Atmos Consulting May 2014 (https://www.energyconsents.scot/ApplicationDetails.aspx?cr=EC00002077).

28 Tomchrasky Wind Farm, EIA Report, Chapter 11: Noise, Nov 2022, Hayes McKenzie Partnership Ltd / Atmos Consulting (https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00004663).

review during the initial phases of assessment. Additional background noise surveys may be undertaken should these be required, in accordance with ETSU-R-97 and best practice, however at this stage this is unlikely to be necessary.

5.7.19 The approach to the derivation of baseline background noise levels, proposed additional survey locations (if required), relevant noise limits and criteria will be discussed in consultation with the Environmental Health Department of The Highland Council. The assessment methodology, in particular with regards to cumulative impacts, will also be discussed.

Assessment of Environmental Impacts and their Significance

Potential Impacts

Construction

5.7.20 During construction, noise could arise from both onsite activities, such as the construction of onsite access tracks, turbine foundations, the substation/control building etc., and also from the movement of construction related traffic both onsite and travelling on public roads to and from the Site.

5.7.21 In assessing the impact of noise and vibration from the construction activities, it is usual to accept that the associated works are of a temporary nature. The assessment of construction noise effects would be undertaken in accordance with the guidance contained within BS 5228:2009+A1:2014 and will identify if and when predicted noise levels may be above standard guideline limits, taking into account the rural character of the area. Any blasting if used for rock extraction at borrow pits may also create vibration and air overpressure which may require attention in accordance with Planning Advice Note 50.

5.7.22 An assessment of potential impacts arising from any changes in traffic flows as a result of the Proposed Development will also be undertaken as part of the construction noise assessment and the criteria set out in the Design Manual for Roads and Bridges will be referenced. Construction noise management procedures will also be determined. Where necessary, appropriate levels of mitigation would be identified, in accordance with best practice, to ensure that noise levels are acceptable during the construction phase.

Operation

5.7.23 During operation, wind turbines have the potential to create noise effects through both aerodynamic noise and mechanical noise. Noise emitted from other operational elements of the development are likely to be negligible, and so the operational noise assessment will focus on the noise emitted from the proposed wind turbines.

5.7.24 The methodology for the assessment of operational noise from wind farms in Scotland recommended in planning guidance is that documented in ETSU-R-97. In summary, the assessment shall:

- Identify the nearest noise sensitive receptors.
- Determine the quiet day-time and night-time noise limits from measured background noise levels at the nearest neighbours (see above) or assuming the use of the ETSUR97 ‘simplified assessment method’ of a fixed limit of 35 dB(A) where this would be relevant.

- Specify the type and noise emission characteristics of the wind turbines proposed for the Site.
- Calculate noise emission 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.
- Compare the calculated wind farm noise emission levels with the derived noise limits.

5.7.25 The good practice guidance referenced above (IOA GPG) will be taken into account, including advice on baseline survey, wind shear assessment and noise prediction methodology.

5.7.26 When considering neighbouring cumulative wind farm noise, the potential noise emissions from the adjacent wind farm sites will be considered by examining the potential level of noise emission allowed under the respective consent for each of the sites, in line with current best practice (see IOA GPG guidance referenced above).

5.7.27 The calculated wind farm noise emission levels will be compared with the noise limits derived in accordance with ETSU-R-97. The noise limits derived according to ETSU-R-97 guidance, for each noise-sensitive receptor, apply to the total noise produced by all wind farms. Therefore, potential cumulative operational noise levels, including operational, consented and application wind turbines in the area, will be assessed relative to these total ETSU-R-97 noise limits.

Cumulative Impacts

5.7.28 For operational wind turbine noise, the approach of ETSU-R-97 is inherently a cumulative assessment methodology and will therefore fully consider cumulative effects of operating the Proposed Development with other wind farms which may be acoustically important.

Matters Scoped Out

5.7.29 It is recognised that vibration resulting from the operation of wind farms is imperceptible at typical separation distances. It is therefore proposed to scope out the assessment of vibration produced during the operation of the Proposed Development.

5.7.30 With regard to infrasound and low frequency noise, the above-referenced online planning advice note, Onshore wind turbines, refers to a report for the UK Government which concluded that *"there is no evidence of health effects arising from infrasound or low frequency noise generated by the wind turbines that were tested*". The current recommendation is that ETSU-R-97 should continue to be used for the assessment and rating of operational noise from wind farms. It is therefore not proposed to undertake specific assessments of infrasound and low frequency noise, but the noise chapter will consider the latest supporting information on these subjects and the topic of wind turbine blade swish or Amplitude Modulation (or AM).

5.7.31 Decommissioning is likely to involve activities of similar or reduced intensity regarding noise as for the construction phase and therefore result in comparable noise and vibration effects. It is therefore proposed to scope out the assessment of noise and vibration from the decommissioning phase of the Proposed Development.

5.7.32 It is unlikely that construction of the Proposed Development would occur precisely at the same time as other wind farms, such that cumulative impacts are likely to arise. It is

therefore proposed to scope out the assessment of cumulative construction noise and vibration from the Proposed Development

5.7.33 The substation is likely to be well separated (at least one kilometre) from nearby noise sensitive receptors, therefore it is not proposed to undertake specific assessments of operational noise from these elements and for these to be scoped out of the assessment.

Assessment Methodology

Sensitivity of Receptor

5.7.34 All receptors to be included within the assessment are residential dwellings, all of which will be considered to be of high sensitivity for the purposes of the construction and operational noise assessments.

Magnitude of Impact

5.7.35 For construction noise, a set of impact criteria will be used based upon those presented within BS 5228-1 Informative Annex E, for impacts from negligible, through minor, to moderate and major. With all receptors considered high sensitivity these would relate directly to their significance in the context of the EIA Regulations, with major and moderate effects considered significant in the context of the EIA Regulations. The significance of impacts from construction-related traffic on public roads will be completed using the guidance of the Design Manual for Roads and Bridges.

5.7.36 For operational wind turbine noise, the assessment will determine whether noise levels (including cumulative contributions from other wind farms) are below or above the day time and night time noise limits set in accordance with the ETSU-R-97 criteria. Accordingly, predicted operational noise levels which are below the ETSU-R-97 criteria will be considered not significant in the context of the EIA Regulations. If predicted noise levels are above the ETSU-R-97 criteria, this will be considered significant in the context of the EIA Regulations.

Questions for Consultees

- Are the consultees happy with the suggested approach for the noise assessment, including elements scoped in and out?
- Do the consultees have any objection to referencing previous background noise data acquired around the Site?

5.8 Other Issues

Climate Change

Introduction

5.8.1 It is proposed to include a greenhouse gas (GHG) assessment of the Proposed Scheme as part of the Climate chapter. This will determine the effects of GHG emissions and savings arising from the Proposed Development upon the climate. Within the context of onshore windfarms this kind of assessment is termed a carbon balance assessment, and standard methodology within the British Isles is to employ the Scottish Government's Carbon Calculator Tool.

5.8.2 Renantis UK Limited wishes to submit an application for planning permission under the Town and Country Planning Act 1997, as amended to the Highland Council. There are no plans to include battery storage or other collocated technologies with the Proposed Development.

5.8.3 This assessment will be carried out by Nature Positive, who are an environmental consultancy operating as part of the RSK Group. They specialise in a range of areas including wilding, ecology, and carbon, climate & sustainability. The team carrying out this assessment will be the Climate, Carbon & Sustainability team.

Legislation, Policy and Guidance

5.8.4 Legislation:

- Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Scottish Government (2019) The Climate Change (Emissions Reductions Targets) (Scotland) Act 2019; and
- Scottish Government (2023) National Planning Framework 4.

5.8.5 Policy:

- Scottish government (2023) Scottish National Planning Framework 4 (NPF4);
- Scottish Government (2018) Scottish Climate Change Plan (SCCP);
- NatureScot (2019) Good Practice During Wind Farm Construction; and
- The Highland Council (2023) Net Zero Strategy.

5.8.6 Guidance:

- IEMA (2022) Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance;
- The Greenhouse Gas (GHG) Protocol, A Corporate Accounting and Reporting Standard (Revised Edition);
- PAS 2080:2023 Carbon Management in Infrastructure; and
- Royal Institute of Chartered Surveys (RICS) (2017) Whole life carbon assessment for the built environment.

Baseline

Study Area

5.8.7 The study area is defined as the area within the Site boundary for the GHG assessment. Scope 1 emissions will include those emitted directly from all facilities and infrastructure under the operational control of the Proposed Development, and likely within the Site boundary. However, scope 2 and any relevant scope 3 emissions will occur outside the proposed Site boundary.

5.8.8 The proposed Millennium East Wind Farm development will likely consist of up to eight wind turbines up to 200m in height, which would generate up to 39.9MW of electricity.

5.8.9 The Proposed Development would be located in the Highlands, to the east of the existing Millennium Wind Farm, west of Fort Augustus, southwest of Invermoriston and north of Invergarry. There are several operational and approved windfarms in the surrounding area, in addition to four towns located within 5km of the settlement.

Existing Baseline Conditions

5.8.10 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 of the existing activities within the Site boundary.

5.8.11 The land within the Site is dominated by heather moorland with areas of grassland, sedges, and reeds in wetter areas. The land comprises of a range of peat depths, the majority from 0 - 1.5 m. There are also small pockets of 2 - 3 m peat depth.

5.8.12 Given these baseline characteristics, it is likely that the Site presently sequesters carbon. No significant GHG emissions are expected to occur from the Site.

5.8.13 According to the SEPA flood risk maps (2023) the Proposed Development is 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.

Survey Methodology

5.8.14 No surveys have been undertaken to date, and none are expected to be undertaken to inform the climate assessment.

Assessment of Environmental Impacts and their Significance

Potential Impacts

Construction

5.8.15 GHG emissions will be inevitable during the construction phase given the scale of the development and the methods available for it to be carried out (through the use of heavy machinery). If disturbed, the carbon stores identified on the Site have the potential to release carbon into the atmosphere to form carbon dioxide. It is thus possible that in addition to the embodied GHG emissions associated with manufacture of the turbines and associated ancillary infrastructure, on-site activities during construction may contribute towards limiting the sequestration capacity of the Site.

5.8.16 Main emissions sources are likely to be through fuel consumption and the embodied emissions of materials. While mitigation measures are likely to be implemented to limit these emissions, they will still be significant based on current available information.

5.8.17 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 emissions associated with the construction of the Proposed Development will have a negative effect upon the climate. However, it is not expected that the emissions from construction will compromise the ability of the UK to meet its carbon reduction targets.

Operation

5.8.18 The operation of the wind farm is unlikely to contribute a significant amount of GHG emissions and can be viewed as achieving emissions savings by reducing the consumption of fossil fuel generated mains electricity.

Decommissioning

5.8.19 GHG emissions will be inevitable during the decommissioning phase of the development, again due to the necessary use of heavy machinery. The emissions associated with the decommissioning of the Proposed Development are likely to have a negative effect upon the climate.

Lifecycle emissions

5.8.20 Given their cumulative nature, the GHG emissions from a development must be assessed by its total lifecycle emissions, rather than each individual lifecycle phase. The adverse effects from construction and decommissioning will be offset by the significant beneficial effect from the generation of low carbon electricity by the Proposed Development. Depending on the design, its net impact has the potential to be significantly beneficial.

Cumulative Impacts

5.8.21 GHG emissions are inherently cumulative, as all emissions have the same per-unit impact on the same ultimate receptor. The impact is climate change, or global warming, caused by the radiative forcing effects of GHGs in the atmosphere, and the affected receptor is the global climate and all the ecosystems and biomes that depend on it.

5.8.22 The Proposed Development will achieve emissions savings by reducing the consumption of fossil fuel generated mains electricity. These savings will outweigh the necessary GHG emissions resulting from manufacturing, constructing, and decommissioning of the Development. Once emissions from these sources are offset by the Development, then each subsequent unit of wind generated electricity would displace a unit of conventionally generated electricity, thereby contributing to the overall reduction in emissions into the atmosphere.

5.8.23 The cumulative effect of multiple wind farms and renewable energy developments in the nearby area, and in Scotland as a whole, will have an overall cumulative positive effect on the climate and Scotland's ability to reach its Net Zero targets.

Matters Scoped Out

5.8.24 In Scotland, climate change is projected to result in warmer temperatures, increased rainfall and sea level rise. None of these trends are anticipated to have a likely significant effect upon the Proposed Development by virtue of its in-built resilience (with respect to temperature) and the elevated position and general in-land location of turbines (with respect to both rainfall and sea level rise).

A further variable with respect to the changing climate is sea level pressure which contributes towards wind speed. Projections relating to sea level pressure show considerable uncertainty. As braking mechanisms on turbines allow for operation only under specific wind speeds, should severe windstorms be experienced, then the turbines would shut down. Overall, it is unlikely that significant effects upon the Proposed Development will arise as a result of climate change, and the 'Climate Resilience' topic can be scoped out of further assessment.

Assessment Methodology

5.8.25 The methodology used to calculate predicted CO_2 emissions from the Proposed Development is based upon the work of Nayak et al. (2008, 2010) and Smith et al. (2011),

which are the basis for the latest version (V1.7.0) of the Scottish Government's Carbon Calculator Tool. This tool enables carbon losses and carbon savings to be quantified across the project lifecycle stages (construction, operation and decommissioning/site restoration), and these losses and savings are combined to establish the overall (net) carbon effect of the Proposed Development, as well as its 'carbon payback period'.

5.8.26 The assessment will also estimate the Proposed Development's net GHG impact and 'carbon balance period' (the time following the start of wind farm operation at which the GHG emissions associated with manufacture, construction and decommissioning activities are offset through GHG savings from the wind farm's operation).

5.8.27 The assessment will draw on site-specific information including:

- site characteristics (e.g. average temperature);
- peat type and depth (from peat survey);
- water table depth before and after construction and decommissioning;
- development proposals (turbine number and output, access tracks, borrow pits, hard standing and foundation areas etc.); and
- post-decommissioning replanting, restoration and draining proposals.

5.8.28 During the design process, the wind turbines will be sited to avoid the areas of deepest peat as far as practicable, and measures to minimise peat disturbance, especially during excavation, will be considered. To minimise peat disturbance in construction and decommissioning best practice measures will be provided as part of the Construction Environmental Management Plan.

Significance

5.8.29 Given the international urgency of climate change, the sensitivity of the receptor (i.e. global climate) to fluctuations in greenhouse gas emissions is considered 'Very High'. Thus, the level of the significance of effects is determined by the magnitude, and timing, of greenhouse gas emissions and the likelihood of avoiding severe climate change.

Aligned with IEMA's Guide 'Assessing Greenhouse Gas Emissions and Evaluating their Significance 2nd Edition' (February 2022), any project that causes greenhouse gases to be avoided, or removed from the atmosphere, has a beneficial effect that is always significant. In such a scenario, the project substantially exceeds the national net zero requirements and is thus aligned with the goal of the Paris Agreement to limit temperature rise to well below 2°C, aiming for 1.5°C.

Table 5.28: Sensitivity of receptor criteria

Significance	Level	Criteria
Significant	Major adverse	Project adopts a business-as-usual approach, not compatible with the national Net Zero trajectory, or aligned with the goals of the Paris Agreement (i.e., a science-based 1.5°C trajectory). GHG impacts are not mitigated or reduced in line with local or national policy for projects of this type.

Significance	Level	Criteria
	Moderate adverse	Project's GHG impacts are partially mitigated, and may partially meet up-to-date policy; however emissions are still not compatible with the national Net Zero trajectory, or aligned with the goals of the Paris Agreement.
Not significant	Minor adverse	Project may have residual emissions, but the project is compatible with the goals of the Paris Agreement, complying with up-to-date policy and good practice.
	Negligible	Project has minimal residual emissions and goes substantially beyond the goals of the Paris Agreement, complying with up-to-date policy and best practice.
Significant	Beneficial	Project causes GHG emissions to be avoided or removed from the atmosphere, substantially exceeding the goals of the Paris Agreement with a positive climate impact.

Questions for Consultees

5.8.30 Do you agree with the receptors/elements that are proposed to be scoped in and out of the EIA?

Socio-economics, Land Use and Tourism

Introduction

5.8.31 This chapter will consider the potential socio-economic, land use, tourism and recreation effects from the Proposed Development. This includes consideration of existing land uses within the Site, employment generation and other economic effects, and local recreation and tourism activity.

Legislation, Policy and Guidance

5.8.32 National Planning Framework 4 was approved on 11th January 2023, this supersedes NPF3 (2014) and Scottish Planning Policy (2014) (SPP). The Energy policy (Policy 11) within NPF4 states that *'Development proposals will only be supported where they maximise net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities.'*.

5.8.33 In addition, project design and mitigation should consider *'public access, including impact on long distance walking and cycling routes and scenic routes'*.

5.8.34 The Highland-wide Local Development Plan (LDP) was adopted by THC in 2012 and relevant 'policy criteria' are taken forward in the LDP's Policy 67 Renewable Energy Developments and supporting supplementary guidance Onshore Wind Energy Supplementary Guidance (2017). In addition to the requirements outlined in the NPF documents described above, the guidance states that wind energy proposals within the Highlands should:

- research into the potential effects of windfarms on tourism and recreation;

- illustrate the potential for socio-economic benefits to be derived from development proposals. A key aspect of this will be engaging with local communities to better understand local needs and issues;
- identify the potential for effects on industries for which Highland's landscape is important - for example tourism and recreation; and
- highlight the potential for secondary effects for tourism and recreation, such as a change in land use that causes adverse effects, for example, a change from forestry to a windfarm, or where there are potential benefits like improved public access in the area. It is important to consider the impact of proposed wind energy development not only on existing land uses, but also those permitted or which are included as specific proposals in the LDP.

5.8.35 In addition to planning policy, the assessment will take account of the wider policy context. The most relevant documents are expected to include:

- National:
  - Onshore Wind Policy Statement 2022 (OWPS);
  - 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.

5.8.36 There is no specific legislation or guidance available on the methods that should be used to assess the socio-economic, land-use and tourism impacts of a proposed onshore windfarm development. The proposed method has however been based on established best practice, including the UK Government and industry reports.

5.8.37 The following documents will also be considered in the assessment:

- BiGGAR Economics (2017), Wind Farms and Tourism Trends in Scotland;
- BiGGAR Economics (2021), Wind Farms and Tourism Trends in Scotland: Evidence from 44 Wind Farms;
- BVG Associates (2017), Economic benefits from onshore wind farms;
- ClimateXChange (2012), The Impact of Wind Farms on Scottish Tourism;
- Department for Business, Energy & Industrial Strategy (2019), BEIS Public Attitudes Tracker;
- Glasgow Caledonian University/Moffat Centre (2008), Economic impacts of wind farms on Scottish tourism;
- Highlands and Islands Enterprise (2019), 2019-2022 Strategy;

- Highlands and Islands Area Profiles 2020 Lochaber, Skye And Wester Ross (2020);
- Institute of Environmental Management and Assessment (IEMA) (2011), The State of Environmental Impact Assessment in the UK;
- NatureScot (2018), Environmental Impact Assessment Handbook V5;
- RenewableUK (2015), Onshore Wind: Economic Impacts in 2014;
- RenewableUK (2021), The Onshore Wind Energy Prospectus;
- Scottish Government (2016), Draft Advice on Net Economic Benefit and Planning;
- Scottish Government (2020), Towards a Robust, Resilient Wellbeing Economy for Scotland: Report of the Advisory Group on Economic Recovery;
- Scottish Renewables (2023), Scotland's Renewable Energy Industry: Supply Chain Impact Statement 2022/23;
- Scottish Renewables, Scottish National Heritage, SEPA, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland Science and Association of Environmental Clerks of Works (2019), Good Practice During Windfarm Construction;
- Visit Scotland (2020), Key Facts: Tourism in Scotland 2019; and
- Zero Waste Scotland (2021), The future of onshore wind decommissioning in Scotland.

Study Area

5.8.38 The socio-economic baseline description will cover and compare regional and national study areas:

- The Scottish Highlands; and
- Scotland.

5.8.39 This is intended to encompass the areas where significant effects, as a result of the Proposed Development, on employment and the economy could occur.

5.8.40 A three-tiered approach to the study area for tourism, recreation and land use effects will be adopted. A study area of 15 km from the Site will be used to identify tourism receptors, including accommodation, attractions and events. A study area of 5 km from the Site will be used to identify informal tourism and recreational receptors, which relate to walking routes and open spaces which aren't commercial in nature. however, direct impacts will only be assessed for receptors within the Site. The study area for land use covers all the land taken by the Proposed Development either temporarily during construction or permanently during operation.

Data sources to Inform the EIA Baseline Characterisation

5.8.41 Baseline conditions will be determined by desk-based surveying that use publicly available statistics and information, which will be referenced fully in the EIAR. Economic and employment statistics will be reviewed, and settlements will be identified and described using sources such as the National Online Manpower Information System (NOMIS), National Records of Scotland

5.8.42 In addition, relevant information will be gathered from other technical chapters within the EIAR; such as the landscape and visual impact assessment, as well as assessments undertaken for other windfarm developments deemed similar in location and scope.

5.8.43 ZTV mapping will be used to identify tourism and recreational receptors potentially subject to visual impacts within the respective study areas. ZTV mapping indicates areas of potential visibility and for the purposes of the assessment will be based on a surface model including trees and buildings as visual barriers in order to provide a more realistic indication of potential visibility. Tourism and recreational receptors will be identified from consultees and by using online databases such as Google Maps, Visit Scotland, TripAdvisor, WalkHighlands, and Ramblers Scotland as well as popular apps such as Strava's Global Heat Map and Komoot.

Existing Baseline Conditions

5.8.44 Before assessing the potential effects of the Proposed Development on the economy, land use and tourism, the assessment will provide a baseline describing the existing socio-economic, tourism conditions. Any changes in activity and use linked to the proposed Development will be assessed against this baseline.

5.8.45 The baseline will consider:

- current land use(s) at the Site;
- employment and economic activity within the context of regional and national economies;
- wage levels within the regional economy compared to the national level; and
- recreational assets in the vicinity of the Proposed Development (5 km);
- the role of the tourism sector in the local and regional economy, with consideration of assets, including accommodation providers and other tourism assets in the vicinity of the Proposed Development (15 km).

Receptors/Matters to be Scoped into Further Assessment

Net Socio-economic Impacts During Construction and Operation

5.8.46 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.

5.8.47 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.

5.8.48 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[29], 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[30].

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

5.8.50 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 chapter to present a fuller picture of the economic and social impacts that the Proposed Development could have.

Tourism

5.8.51 As detailed in paragraph **5.8.59**, the assessment will not consider impacts on wider tourism economy. However, the proposed method will consider individual attractions and tourism facilities to assess if there could be any effects from the Proposed Development.

5.8.52 The impacts on tourism will be assessed with a focus on whether visitor behaviour is likely to change. 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 having significant effects in other chapters, including Traffic and Transport, Noise and Landscape and Visual Impact.

Indirect Recreational Impacts

5.8.53 Recreation effects will be assessed qualitatively with reference to guidance, evidence from research and comparable windfarms and using professional experience and judgment. There is the potential for indirect effects on recreational amenity during the operational phase. The distinction between a visual effect and a recreational amenity effect should be noted. Recreational effects are described as effects that influence the recreational value (e.g., use or enjoyment of an asset such as a walking route). On the other hand, visual effects associated with the Proposed Development can occur at recreation receptor locations, when people are looking towards the Proposed Development and from locations where clear views of the turbines are available. Although visual effects can influence recreational amenity, they only contribute to part of the recreational experience. Therefore, 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.

5.8.54 For recreational assets, guidance has been provided by NatureScot (Scottish Natural Heritage (2018) Environmental Impact Assessment Handbook) (NS) (formerly Scottish Natural Heritage) on how to assess effects on recreational amenity and the approach outlined has been used. This takes into consideration a number of potential effects, including direct effect on facilities, such as limitation or restrictions on access, and effects

[29] Leakage is the proportion of project outcomes that benefit individuals or organisations located beyond the relevant area of impact. Displacement is an estimate of the economic activity, as a result of the proposed Development, that would be diverted from other businesses in the Highlands.

[30] Scottish Government (2016), Net Economic Benefit and Planning.

on the intrinsic quality of the resources enjoyed by people. In general, this guidance would consider 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 NS 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 NS 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 provision is considered to be inadequate.

Land Use Effects

5.8.55 Impacts relating to effects on land use are largely assessed using simple area analysis to gauge the magnitude of any resource loss as a consequence of the Proposed Development.

Receptors/Matters to be Scoped Out of further Assessment

Access (Direct Recreational Impacts)

5.8.56 During construction, there could be temporary direct impacts affecting accessibility on the recreational routes within the Site.

5.8.57 In accordance with the Construction (Design and Management) Regulations 2015, notices would be placed in prominent locations around the Site to outline areas of restricted access. Measures for ensuring public safety during construction would be secured by the Construction Environmental Management Plan (CEMP), and periods of exclusion would be kept to the minimum necessary for safe working. The CEMP would set out measures to ensure that recreational users are informed of the construction work and directed into safe areas where there would be no conflict with plant and machinery. While there could be indirect visual effects from the construction works, it is considered that these would be temporary and the magnitude of impact would be less than or equal to the visual impacts once the Proposed Development is operational, which have been scoped out as explained below. Therefore, it is not considered that there is potential for significant direct effects on recreational receptors during construction.

5.8.58 It is acknowledged that the HwLDP requires an Access Management Plan for Major developments (which the Proposed Development does not classify as but is usually expected for National developments by THC). However, it is not considered that an Access Management Plan is required as part of the S36 application and this could be controlled through a planning condition as required. It is considered that the reasoning above and the final design detail that will be submitted with the application will provide sufficient information, including existing public, non-motorised public access footpaths, bridleways and cycleways on the Site, together with proposed public access provision, both during construction and after completion of the development (including links to

existing path networks and to surrounding area, and access points to water) to understand the likely access impacts and mitigation measures proposed.

Tourism Economy

5.8.59 A literature of the impact of windfarms on tourism in general has been undertaken that found no evidence windfarms negatively affect the tourism economy in Scotland. In addition, consideration was given to individual tourism receptors within the relevant study areas.

5.8.60 The potential for impact on tourism is closely linked to the public perception of those visiting an area; thus, this Section provides an overview of studies undertaken to assess public perception of windfarm development across the UK.

5.8.61 In 2011, as part of their policy update, VisitScotland investigated the attitudes of UK consumer towards wind farms[31]. The survey was largely attitudinal based and according to the results, windfarms do not have any significant impacts on the levels of tourism with evidence. For example, 52% of the study respondents disagreed that windfarms spoil the look of the UK/Scottish countryside.

5.8.62 Based on this research, VisitScotland published a Position Statement in 2014[32], which stated*:*

"VisitScotland understands and supports the drive for renewable energy and recognises the economic potential of Scotland's vast resource, including the opportunities for wind farm development… There is a mutually supportive relationship between renewable energy developments and sustainable tourism."

5.8.63 A Department of Energy and Climate Change (DECC) survey[33] on public attitudes showed that in March 2014, 89% of the British public said they supported the use of renewable energy for electricity, heat and fuel in the UK. Furthermore, the BEIS Public Attitudes Tracker: Energy Infrastructure and Energy Sources (2022), published by the Department for Business, showed that 79% of people support the development of onshore wind, in comparison to 74% at the start of 2017.

5.8.64 Visit Scotland (2020)[34] research indicates that visitors aspire to be more responsible, both in terms of their personal and environmental impact. VisitScotland identified that travellers are now seeking to consciously off-set the carbon impact of their travel. The use of sustainable energy by local businesses may, therefore, appeal to this type of traveller and promote Scotland as an environmentally friendly and climate conscious country to visit.

5.8.65 Furthermore, the Scottish Government is aware that some communities in Scotland are concerned that the deployment of onshore wind can have a negative effect on tourism. Current evidence suggests that whilst there may be discrete impacts in some cases, this is not the general rule. For example, the Scottish Government's Onshore Wind Policy

[31] Visit Scotland (2011). Available at: https://ascogfarm.com/wp-content/uploads/2020/07/RES-CD-TOU-006.pdf (accessed April 2023).

[32] Visit Scotland (2014), Visit Scotland (2014), Position Statement – Wind Farms.

[33] Department for Business, Energy & Industrial Strategy (2022), BEIS Public Attitudes Tracker.

[34] Visit Scotland, Research and Insights. Available at: https://www.visitscotland.org/research-insights (accessed April 2023).

Statement (2022)[35] considers the potential effect of onshore windfarms on local and national tourism as a significant opportunity to cultivate a 'people and place' approach, by providing economic opportunities in areas that may otherwise be overlooked. The Policy Statement references details many examples of where renewable energy schemes have boosted tourism and recreation across Scotland.

5.8.66 More recently, Copper Consultancy (2023) released a report titled 'Public Attitudes to Renewable Energy' based on responses from across the UK. The report found that only 7% of people do not support local energy projects and for onshore wind the respondents aged in the 16-24 and 25-34 brackets were 50s% supportive, while 35-44 participants hit the 60s% support and over 50s were in the 70s% supportive. The supports the conclusion that onshore wind is recognised as a key source of renewable energy that will contribute to Net Zero ambitions.

5.8.67 The most comprehensive study of the potential effects of wind farms on tourism was undertaken by the Moffat Centre at Glasgow Caledonian University in 2008[36]. The study found that, even though there may be minor effects on tourism providers and a small number of visitors may not visit Scotland in the future, the overall impact on tourism expenditure and employment would be very limited. Although the study was conducted over ten years ago, a Scottish Government Report (2012)[37] has confirmed the findings. In subsequent years, wind farms have become increasingly prevalent in Scotland; however, no evidence has emerged to suggest there are any negative effects on the tourism economy.

5.8.68 In 2017, BiGGAR Economics[38] undertook a study into the effects of constructed wind farms on tourism at the national, regional and local level. The report considered tourism employment from 2009 to 2015, a six-year period over which Scotland, and almost all local authority areas, increased the number of wind farms, alongside significant growth in employment in sustainable tourism. The analysis found no correlation between tourism employment and the number of turbines at the national, or local authority level. Overall, research completed to date suggests that the tourism sector is not adversely impacted by wind farm development.

5.8.69 Additionally, the research considered the impact on tourism employment at a smaller level, in data zones up to 15 km from wind farm developments. The wind farms considered had been constructed between 2009 and 2015. The study compared tourism employment in 2009, when the wind farms did not exist, and 2015, when they have been constructed, to measure the effect of wind farms on local tourism employment. This excluded construction impacts, such as wind farm related employees staying in local accommodation.

5.8.70 At the local authority level, no link was determined between the development of a wind farm and tourism related employment. In 21 of the 28 areas considered, employment in this sector grew. In 22 of the areas, employment in tourism either grew faster, or decreased less, than the rate for the relevant local authority area as a whole.

[35] Scottish Government (20202). Onshore Wind Policy Statement.

[36] Glasgow Caledonian University/Moffat Centre (2008), Economic impacts of wind farms on Scottish tourism: report.

[37] Scottish Government ClimateXChange (2012), The Impact of Wind Farms on Scottish Tourism.

[38] BiGGAR Economics (2017). Wind Farms and Tourism Trends in Scotland.

5.8.71 Overall, the study concluded that published national statistics on employment in sustainable tourism demonstrate there is no relationship between the development of onshore wind farms and tourism employment in the areas immediately surrounding wind farm development, at the local authority level, nor at the level of the Scottish economy as a whole.

5.8.72 Furthermore, over the period of 2010-2019, GVA in the Highlands increased by 87%, compared to 42% expansion of the sector, in the same time period, at a Scottish level. Notably, over this time period, there was a significant increase in the number of wind farm developments, with onshore wind capacity in the Highlands increasing by 1609% from 2009-19[39].

5.8.73 The research findings agree with the conclusions made by the Scottish Parliament's Economy, Energy and Tourism Committee in 2012, when they found no robust, empirical evidence of a negative link between wind farm development and tourism.

Decommissioning Effects

5.8.74 In relation to decommissioning the Proposed Development after its operational life, as decommissioning is likely to constitute a reversal of the activities undertaken during the construction phase, it is considered that the likely effects on land use, recreation and tourism would be the same.

Wider economic impacts

5.8.75 Wider economic benefits will not be considered in the assessment as they are more speculative and reliant upon local businesses responding to the opportunities available.

5.8.76 Furthermore, regarding the potential benefits to the supply chain, the Proposed Development provides opportunities for the involvement of suppliers from the Highlands and Islands, and wider Scotland. The range of activities that suppliers can be involved in include; research and development, design, project management, civil engineering, component fabrication and/or manufacture, installation and maintenance. There is expertise in all of these areas in the wider region, although a full wind energy supply chain covering all aspects of wind turbine component manufacture has not yet been developed within the region or indeed within Scotland as a whole.

5.8.77 A key contextual consideration has been, with an increasing number of wind farm schemes either operational, under development or having gained consent in Scotland, the commercial viability, and job prospects amongst Scottish supply chain firms has improved. Cluster benefits in the industry increase where firms are supported by the spending of other firms within the renewables sector. The net effect is to increase business and employment opportunities within Scotland's renewable energy sector, boosting the performance of regional and national economies.

5.8.78 In addition, during the construction process, there would be opportunities for those employed to develop skills that would be of benefit to the local economy and local businesses in the longer term. Further, employment generated through the Proposed Development would contribute to diversifying the local economy and help support the retention in the area of the working age population.

[39] BiGGAR Economics (2021), Wind Farms and Tourism Trends in Scotland.

Effect on Community Services

5.8.79 It is not expected that construction workers from outside local study area would have a significant effect on the demand for housing, health or educational services. Once constructed, only a small workforce would be involved in the operation and maintenance of the Proposed Development. Therefore, effects on demand for such community services during construction have been scoped out.

Assessment of Environmental Impacts and their Significance

5.8.80 The significance of the socio-economic, land use, recreation and tourism effects resulting from the construction and/or operation of the Proposed Development will be assessed by combining the magnitude of impact with the sensitivity of receptor.

Sensitivity of Receptor

5.8.81 Although no published standards define receptor sensitivity relating to socio-economic, land use, recreation and tourism assessments; as a general standard, the sensitivity of each receptor, or receptor group, is based on its importance or scale, and ability of the baseline to absorb or be influenced by the identified effects. For example, a receptor (such as a public footpath or a supply chain business) is considered less sensitive when there are alternatives with capacity within the study area. In assigning receptor sensitivity, consideration has been given to the following:

- the importance of the receptor e.g. regional and national;
- the availability of comparable alternatives;
- the ease at which the resource could be replaced;
- the capacity of the resource to accommodate the identified impacts over a period of time; and
- the level of usage and nature of users (e.g. sensitive groups such as people with disabilities).

5.8.82 Based upon professional judgement and experience on other large-scale projects, four levels of sensitivity are used and defined in table.: high; medium; low; and, negligible.

5.8.83 In the case of socio-economic, land use, recreation and tourism, the sensitivity of a receptor is often subjective. Different receptors have differing sensitivities, dependent on factors such as the economic profile of the local area, the perception of the type of development and public attitudes towards the potential benefits of a development. Therefore, this assessment is based on a worst-case assumption that there is a negative perception of the Proposed Development.

Table 5.29: Sensitivity of receptor criteria

Sensitivity of Receptor	Criteria
High	The receptor: has little or no capacity to absorb change without fundamentally altering its present character; or is of high socio-economic, land use, recreational, or tourism value; or is of national or international importance; or is accorded priority in national policy; or has no alternatives with available capacity within its study area; or is a destination in its own right (as regards tourism and visitor attractions).
Medium	The receptor: has moderate capacity to absorb change without fundamentally altering its present character; or has a moderate socio-economic, land use, recreational or tourism value; or is of regional importance; or is accorded priority in local policy; or has some alternatives with available capacity within its study area; or is a destination for people already visiting the area (as regards tourism and visitor attractions); or forms a cluster of low sensitivity receptors.
Low	The receptor: is tolerant of change without detriment to its character; or is of low socio-economic, land use, recreational or tourism value; or is of local importance; or is accorded low priority in policy; or has a choice of alternatives with available capacity within its study area; or is an incidental destination for people already visiting the area (as regards tourism and visitor attractions).
Negligible	The receptor is resistant to change and is of low socio-economic, land use, recreational or tourism value; or there is a wide choice of alternatives with available capacity within its study area.

Magnitude of Impact

5.8.84 There are no published standards defining thresholds of impact magnitude for socio-economic, land use, recreation or tourism impacts; however, to clearly identify significant effects, specific and targeted criteria for defining the magnitude of impacts have been developed, based on experience of other similar projects. Therefore, the following four levels of impact magnitude have been adopted using professional judgement: high; medium; low and negligible. These impacts can be beneficial or adverse. Criteria for each of these levels of impact magnitude for each receptor group are set out in **Table 5.30**.

Table 5.30: Magnitude of impact criteria

Receptor Group	High	Medium	Low	Negligible
Economy	An impact that would dominate over baseline economic conditions by >10%.	An impact that would be expected to result in a moderate change to baseline economic conditions by >5%.	An impact that would be expected to result in a perceptible difference from baseline economic conditions by >0.5%.	An impact that would not be expected to result in a measurable variation from baseline economic conditions.
Employment	An impact that would dominate over baseline labour market conditions and/or would affect a large proportion (>10%) of the existing resident workforce.	An impact that would be expected to result in a moderate change to baseline labour market conditions and/or would affect a moderate proportion (>5%) of the existing resident workforce.	An impact that would be expected to result in a perceptible difference from baseline labour market conditions and/or would affect a small proportion (>0.5%) of the existing resident workforce.	An impact that would not be expected to result in a measurable variation from baseline labour market conditions.
Tourism and recreational economy	An impact that would dominate over baseline tourism and visitor economy conditions.	An impact that would be expected to result in a moderate change to baseline tourism and visitor economy conditions.	An impact that would be expected to result in a perceptible difference to baseline tourism and visitor economy conditions.	An impact that would not be expected to result in a measurable variation from baseline tourism and visitor economy conditions.
Tourism and recreational receptors	An impact that would be expected to cause a major restriction of access to or availability of tourism and visitor assets in the study area or would result in a major change to existing patterns of use.	An impact that would be expected to have a moderate restriction of access to or availability of tourism and visitor assets in the study area or would result in a moderate change to existing patterns of use.	An impact that would be expected to have a small restriction of access to or availability of tourism and visitor assets in the study area or would result in a small change to existing patterns of use.	An impact that would be unlikely to result in a noticeable difference to tourism and visitor assets in the study area.
Land use	An impact that would lead to a major restriction on the operation of a receptor, e.g. Forestry business, or complete	An impact that would lead to a moderate to major restriction on the operation of the receptor.	An impact that would lead to a minor restriction on the operation of the receptor.	An impact that would lead to a negligible restriction on the use of the receptor.

Receptor Group	High	Medium	Low	Negligible
	closure of a receptor.			
Cumulative	An impact that would lead to a major change to baseline conditions through interactions with other projects.	An impact that would lead to a moderate change to baseline conditions through interactions with other projects.	An impact that would lead to a minor change to baseline conditions through interactions with other projects.	An impact that would lead to a negligible change to baseline conditions through interactions with other projects.

Significance of Effect

Table 5.31: Significance of effect matrix

	Magnitude of Impact			
Sensitivity of Receptor	High	Medium	Low	Negligible
High	**Major**	**Major**	**Moderate**	Minor
Medium	**Major**	**Moderate**	Minor	Negligible
Low	**Moderate**	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

5.8.85 Effects may be positive (beneficial) or negative (adverse) and this is specified where applicable. When an effect is classified as major, it is considered to represent a 'significant effect'. When an effect is classified as moderate, this can also be considered to represent a 'significant effect'. However, this should be subject to professional judgement and interpretation, particularly where the sensitivity or impact magnitude levels are not clear, borders between categories, or is an intermittent impact. In addition, significant effects need not be unacceptable, nor irreversible.

Mitigation and Opportunities for Enhancing the Baseline Conditions

Mitigation

5.8.86 The assessment will take into account any embedded mitigation included in the scope, planning and design of the Proposed Development.

5.8.87 The applicant is committed to implementing accepted good practice measures during construction and operation, such as traffic management, control of noise and dust, signage and provisions for maintaining access for walkers. In addition, it is likely that construction activities would be limited to normal working hours to minimise noise and other impacts during recreational and leisure periods.

5.8.88 Public notices would be issued prior to the commencement of construction to inform local residents, recreational users and businesses of dates and duration of works. It is anticipated that access may be temporarily restricted for some areas surrounding works during construction, operation and maintenance phases. In this case, alternative paths or access routes will be provided where possible.

5.8.89 These measures would help ensure that many potential adverse social and economic effects can be avoided or reduced. Any additional mitigation measures that are required to avoid, prevent, reduce or, if possible, offset any identified significant adverse are set out and considered prior to assessing residual effects.

Supply Chain

5.8.90 The applicant is committed to employing good practice measures with regard to maximising local procurement and would adopt established good practice measures. The applicant has a strong track record in the Highlands and would take that experience and local knowledge to promote that expenditure in local goods and services is widely spread and makes a difference to existing businesses. The applicant works with a variety of contractors who are actively encouraged to develop local supply chains throughout the local area, and work with subcontractors to invest in training and skills development. Additionally, the applicant will consider different methods of engaging with local companies to brief them on the types of contracts being let during the lifetime of the Proposed Development. This would be based on the experience of the applicant's development, construction and operational teams, as well as the Principal Contractors.

5.8.91 The Applicant will host a series of 'Meet the Developer / Contractor Days', to engage with and involve local companies (especially Small and Medium Enterprises (SMEs)) at an early stage of the project process. Interested parties will get the opportunity to attend the locally-held events during the planning application process and post-consent (should the Proposed Development gain consent), to meet with representatives of the Applicant and Principal Contractors.

Community Benefit

5.8.92 Should the Proposed Development gain consent, the Applicant would increase the existing Millennium Wind Farm community benefit fund by £5,000 per MW applied for the wind farm extension. The community benefit fund would be increased in line with signed Onshore Wind Sector Deal, the Applicant have signed up to, and good practice principles in the Scottish Government's Community Benefits from Onshore Renewable Energy Developments guidance.

Questions for Consultees

- Is the scope of the proposed assessments appropriate?
- Are Consultees aware of any key sensitive receptors that should be considered?
- Are Consultees aware of any additional relevant consultees?

Aviation and Radar

Introduction

5.8.93 This chapter provides an indication of the potential effects of the construction and operation of the Proposed Development on aviation. Further, it provides a summary of the assessment methodology to be adopted and the key reference documents covering legislation, policy and guidance.

Legislation

5.8.94 Civil Aviation Authority (CAA) CAP 393, The Air Navigation Order and Regulations, specifies the statutory requirements for the lighting of onshore wind turbines over 150 m tall. Article 222 of the ANO 2016 details the requirement for the lighting of land-based tall structures located outside of the safeguarded areas of licensed and government aerodromes.

5.8.95 The CAA Policy Statement, "Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150 m Above Ground Level" (June 2017), highlights and clarifies the requirements set out in the Air Navigation Order, for the lighting of onshore turbines.

5.8.96 The treatment of land-based obstacles to air navigation close to aerodromes is covered by existing legislation. Obstacles located close to licensed aerodromes are covered under Section 47 of the Civil Aviation Act 1982. Government aerodromes are similarly covered under the Town & Country Planning Act (General Permitted Development) Order 2000.

Policy

5.8.97 The primary planning policy document is the National Planning Framework 4 (February 2023)

5.8.98 NFP4 states, under Policy 11 concerning development proposals for all forms of renewables, that project design and mitigation will demonstrate how "impacts on aviation and defence interests and seismological recording" are addressed.

5.8.99 Scottish Onshore Wind Policy Statement states (December 2022), Under Chapter 6, that wind turbines have the potential to impact aviation operations, including, but not limited to, impact on aviation radar.

5.8.100 The document recognises recent progress stating that bespoke solutions which alleviated specific, individual objections have been deployed successfully over the last decade or more, releasing significant volumes of renewable generation. However, the pace of deployment necessitated by the climate emergency means we must find a way to alleviate these impacts in an effective, efficient and timely manner. It is also important that solutions are cognisant of the cost of deploying renewable energy, particularly given the need to focus on both security of supply and low-cost generation, given the current international and economic situation.

5.8.101 Beyond the above statement of need, the document sets out the structure and aims of Industry and Government groups set up to address the issues of radar impacts and aviation lighting; specifically the Onshore Wind Aviation Radar Delivery 2030 group and the Aviation Lighting Working Group.

5.8.102 The Aviation Lighting Working Group has developed draft guidance focussed on delivering consistent methods, practices and recommendations to aid in assessing aviation obstacle lighting impacts. The draft guidance is out to consultation with relevant stakeholders, with a final version expected to be published during 2023.

5.8.103 Planning Circular 2/03, Safeguarding of Aerodromes, Technical Sites and Military Explosives Storage Areas, contains annexes which describe the formal process by which planning authorities should take into account safeguarding, including in relation to wind

energy developments. As a statutory consultee, the Ministry of Defence (MOD) will be consulted through the Section 36 scoping application. They publish a guidance document on www.gov.uk called 'Wind farms: MOD safeguarding', Updated 21 July 2021. They state that wind turbines can adversely affect a number of MOD operations including radars, seismological recording equipment, communications facilities, naval operations and low flying. These effects are not limited to specific geographical areas.

Guidance

5.8.104 CAA guidance, within CAP 764 (CAA Policy and Guidance on Wind Turbines), sets out recommended consultation and assessment criteria for the impacts of wind turbines on all aspects of civil aviation.

5.8.105 The CAA involvement in the Wind Farm Pre-Planning Consultation Process has ceased; CAP 764 now states that 'developers are required to undertake their own pre- planning assessment of potential civil aviation related issues' and that 'it is incumbent upon the developer to liaise with the appropriate aviation stakeholder to discuss – and hopefully resolve or mitigate – aviation related concerns without requiring further CAA input.'

Baseline

Study Area

5.8.106 The initial aviation impact assessment aims to exhaustively identify all potential issues and the associated stakeholders affected by the Proposed Development. This involves considering all military and civil aerodromes in the wider area out to circa 60 km, all radar installations out to the limit of their range, all navigational aids and air-ground-air communications stations to the limit of their safeguarding and low flying activities in the airspace above and around the site.

Existing Baseline Conditions

5.8.107 The site has a very low sensitivity to aviation, lying 63 km to the south of the nearest significant aerodrome, Inverness Airport.

5.8.108 It is an area already characterised by wind turbines. It is in an area of uncontrolled airspace, to the east and beyond the limits of the Tactical Training Area denoted TTA 14T, used for military low flying training. It is also remote from all lower airspace Air Traffic Service routes.

5.8.109 There are no sensitive military, civil or Met Office radar in the area, with the nearest being located at Inverness Airport. There are also no navigational aids or air-ground-air radio communications stations in the area.

Survey Methodology

5.8.110 The acceptability of the Proposed Development, in terms of net effects on aviation related interests, is established through direct consultation with all relevant stakeholders within the consenting process. The initial task is to independently assess the potential effects and where significant effects may occur, to design the development to minimise those impacts and as required, to enter a dialogue with the affected stakeholders. The initial assessment includes a review of the following:

- Airspace environment:

- Proximity to all aerodromes.
- Airspace class - Proximity to Air Traffic Service routes.
- Transponder Mandatory Zones, Areas of Intense Aerial Activity, Control Areas, Restricted Areas, etc.
- Proximity to military training areas.

- Checks for physical obstruction:
  - Through an infringement of obstacle limitation surfaces.
  - Potential for penetration of Instrument Flight Procedure safeguarding surfaces.
- Radar Line of Sight analysis for the following radars:
  - NATS En-route primary and secondary radar.
  - Civil and military aerodrome air traffic control radar.
  - Military precision approach radar.
  - Military Air Defence radar.
  - Weather radar.
- Proximity to other technical sites:
  - Navigational aids such as beacons.
  - Air-ground-air comms stations operated by NATS En-Route.

5.8.111 Where impacts are of concern additional analysis may be required and where impacts are deemed unacceptable, mitigation solutions will be identified and explored with the goal of reducing impacts to acceptable levels. While the aim of this dialogue is to enable the approval of all stakeholders before full submission, this is not always possible. In the case of impacts, typically solutions are identified but do not reach full maturity in terms of the assessment by the stakeholders and the contracting of mitigation (where required) until full planning applications have been submitted.

5.8.112 Prior to full submission an aviation obstacle lighting design and consultation exercise will be conducted. This will involve the development of an initial lighting design cognisant of all legislation, planning and guidance, followed by consultation with aviation stakeholders relevant to this location. Following feedback from the consultees, the lighting design will be reviewed. The design evolution and a final design will be proposed to the CAA for their consideration and approval. All views expressed by the consultees will be shared with the CAA.

Potential Impacts

5.8.113 There are no significant aviation impacts anticipated during construction or decommissioning, beyond the usual lighting of the cranes and notification of their use, as tall structures. The primary consideration in terms of impacts and any requirement for mitigation, arises from the operational phase of the development.

5.8.114 The initial assessment has found no aviation impacts.

5.8.115 The proposed turbines are not visible to any key radar in the area including those operated by NATS, the MOD and Inverness Airport.

5.8.116 The site is beyond the limits of physical safeguarding for Inverness Airport.

5.8.117 The site is remote from all Navaids and air-ground-air radio stations.

5.8.118 Because the turbines are over 150m in height, visible spectrum obstacle lighting is required. This is also expected to be requested by the MOD.

Shadow Flicker

Introduction

5.8.119 Shadow flicker may occur under certain combinations of geographical position and time of day when the sun passes behind the rotors of a turbine and casts a shadow over nearby properties. Rotating turbine blades can cause brightness levels to vary periodically at locations where they obstruct the sun's rays. As the blades rotate, the shadow flicks on and off, an effect known as shadow flicker. The effect is most likely to be an issue inside buildings, where the flicker appears through a window opening. This can result in a nuisance when the shadow is cast over the windows of residential properties. Shadow flicker can be a cause of annoyance at residences near turbines if it occurs for a significant period during the year.

5.8.120 The magnitude of the shadow flicker effect varies both spatially and temporally and depends on several environmental conditions coinciding at any particular point in time, including, the position and height of the sun, wind speed and direction, cloudiness, and proximity of the turbine to a sensitive receptor. To undertake a shadow flicker assessment, information on the Proposed Development, the location of potential residential receptors and other parameters are included in a computer model is required in order to predict and quantify the impact shadow flicker may have on receptors within the vicinity of the Proposed Development.

Legislation, Policy and Guidance

5.8.121 There is currently no standard for the assessment of shadow flicker, and no formal guidelines on what exposure would be acceptable in relation to shadow flicker. The proposed assessment method, has however, been 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:

- Scottish National Planning Framework 4 (NPF4) (Scottish Government. 2023) [40];
- The Scottish Government's web-based guide relating to onshore turbines (Scottish Government, 2014)[41];
- THC's Onshore Wind Energy Supplementary Guidance (THC, 2022) [42]; and
- Update of UK Shadow Flicker evidence base (Department of Environment and Climate Change, 2011) [43].

[40] Scottish Government (2023). National Planning Framework 4. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf (Accessed November 2023).

[41] Scottish Government (2014). Onshore wind turbines: planning advice Available at: https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/ (Accessed November 2023).

[42] The Highland Council. (2017) Onshore Wind Energy Supplementary Guidance, November 2016 (with addendum, December 2017). Available at: https://www.highland.gov.uk/directory_record/712079/onshore_wind_energy (Accessed November 2023)

[43] Department of Environment and Climate Change (2011) Update of UK Shadow Flicker evidence base. Available at: https://assets.publishing.service.gov.uk/media/5a79770bed915d0422068aa3/1416-update-uk-shadow-flicker-evidence-base.pdf (Accessed November 2023)

5.8.122 The Scottish Government's web-based guide relating to onshore turbines suggests that shadow flicker should not cause nuisance and annoyance to dwellings beyond a distance of 10 rotor diameters from a turbine. However, in line with THC's guidance on shadow flicker, the assessment conducted for the Proposed Development will consider residential receptors located within a distance of 11-rotor diameters instead. Therefore, a study area around each proposed turbine location extending 11-rotor diameter distance in each direction will be established.

5.8.123 NPF4 Policy 11 Energy supports all forms of renewable energy. Part e) outlines that shadow flicker impacts are to be addressed in the Proposed Development design and mitigation.

5.8.124 HwLDP[44] Policy 67 Renewable Energy Developments states that THC will support proposals where it is satisfied that turbines are located, sited and designed such that they will not be significantly detrimental overall, either individually or cumulatively with other developments, having regard in particular to a variety of interests including shadow flicker.

5.8.125 THC's Onshore Wind Energy Supplementary Guidance SPG states that proposals should seek to avoid significant adverse effects on the safety of any residential or regularly occupied property including shadow flicker. It goes on to state that;

"Wind energy schemes should always be designed to avoid causing shadow flicker, blade glint, glare and light effects to any regularly occupied buildings not associated with the development. Where this cannot be achieved, the Council will expect wind energy developments to be located a minimum distance of 11 times the blade diameter of the turbine(s) from any regularly occupied buildings not associated with the development. Within a distance less than 11 times the blade diameter, a shadow flicker assessment will be required."

Baseline

Study Area

5.8.126 A study area around each proposed turbine location, extending 11-rotor diameters distance in each direction will be established.

Assessment of Environmental Impacts and their Significance

5.8.127 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 study area will be calculated using a computer model (Resoft Wind farm) and an assessment of effects at these properties included in the EIAR.

5.8.128 The software used predicts the worst-case scenario of shadow flicker effects, as it does not take into consideration ambient variables that may reduce these effects. The following variables can reduce shadow flicker effects: wind direction; wind speed (as shadow flicker is not experienced if the blades are not turning); intervening obstacles and cloud cover.

[44] HwLDP (2012), Highland-wide Local Development Plan. Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan (Accessed September 2023)

5.8.129 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[45], Germany[46] and Belgium, suggests shadow flicker should not exceed 30 hours per year with a maximum of 30 minutes per day. For the purposes of the assessment, exceedance of 30 hours per year with a maximum of 30 minutes per day is considered to result in a significant effect which may require mitigation.

Questions for Consultees

- Are consultees content with the proposed methodology and approach to shadow flicker assessment and EIA Report as presented in this section of the EIA Scoping Report?

5.9 Matters Scoped Out

5.9.1 EIA subject-specific matters proposed to be scoped out of further assessment are listed under **Sections 5.1** to **5.8**. In addition, the following matters from Schedule 4, Section 5 of the EIA Regulations are proposed to be scoped out of further assessment.

Air Quality

5.9.2 Given the rural location of the proposed Development, the main source of impact on air quality would be increased traffic flows on local roads during construction and emissions from construction activities, such as movement of vehicles on site, and exhaust fumes and dust generated by quarrying activities associated with borrow pits during dry spells. These activities, however, would be short termed, localised, and unlikely to have any significant effect on air quality taking into account average climate conditions and distance between construction and the nearest residential property. In addition to this, controls and best practice measures will form an integral part of the Construction Environmental Management Plan (CEMP) for the proposed Development.

5.9.3 Wind farms do not produce carbon emissions during operation, the only source of emissions would be occasional vehicles accessing the Site for maintenance purposes having negligible effect on air quality.

5.9.4 Any relevant mitigation measures for air quality, dust and pollution control would be detailed within the CEMP.

5.9.5 Having all of the above under consideration, Air Quality is therefore proposed to be scoped out of the EIA.

Population and Human Health

5.9.6 As established under the EIA regulations , Population and Human Health is one of the factors that must be considered during the EIA process. There are no residential properties within the Site, which conveys limited interactions with human health are anticipated. The Site design and in-built buffers from sensitive receptors will minimise any

[45] Northern Ireland Department of the Environment. (2009), Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy', cited in Parsons Brinckerhoff (2011)

[46] States Committee for Pollution Control – Nordrhein-Westfalen. (2002), Notes on the Identification and Evaluation of the Optical Emissions of Wind Turbines, cited in Parsons Brinckerhoff (2011).

risk to human health resulting from the operation of the turbines, and properly designed and maintained wind turbines are a safe technology.

5.9.7 Effects on Population and Human Health will be assessed under the respective technical studies in relation to:

- Landscape and visual impacts;
- Noise and vibration;
- Shadow flicker;
- Traffic and Transportation;
- Aviation and Radar; and
- Socio-economics and Land Use

5.9.8 Any mitigation measures to ensure human safety derived from these assessments will be implemented through the CEMP.

5.9.9 Under this approach, it is proposed that Population and Human Health as a factor will be covered through the findings of several other assessments as part of the EIA process and not as a standalone EIA chapter.

Residential Visual Amenity Assessment

5.9.10 There are no residential properties within 2 km of the Proposed Development. A separate residential visual amenity will not be required.

Telecommunications

5.9.11 Tall structures such as buildings and wind turbines can adversely affect the performance of fixed telecommunications links, if positioned close enough to those links.

5.9.12 A preliminary assessment of the telecommunications network in relation to the Proposed Development was undertaken in January 2024. The preliminary assessment identified that no telecommunication links with the potential to be affected exist within, or in close proximity of the Proposed Development.

5.9.13 Hence, no effects on the telecommunications network are anticipated as a result of the Proposed Development. Telecommunications is therefore proposed to be scoped out of the EIA.

Vulnerability of the Development to Risks of Major Accidents and/or Disasters (including Climate Change)

5.9.14 Given the nature of the proposed Development, and its location, the risk of a major accident or disaster is considered to be extremely low. A Design Risk Assessment process is followed during the design phase to mitigate risks to a level deemed as low as reasonably practicable as part of the requirements of the Construction (Design and Management) Regulations (2015). If required, a PLHRA will be undertaken as part of the EIAR.

5.9.15 During the operational phase of the proposed Development, routine maintenance inspections will be completed in order to ensure the safe and compliant operation of all built infrastructure. The main risk during operational Phase would be due to increase of bad weather. However, 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.

5.9.16 In addition, due to the topography of the Site, flooding will not pose a significant risk to the operation of the windfarm nor will the construction of the proposed Development contribute to flooding elsewhere. It is therefore proposed that an assessment of the risk of major accidents and/or disasters is scoped out of the EIA.

Questions for Consultees

5.9.17 Do consultees agree that air quality can be scoped out of the EIA?

5.9.18 Do consultees agree that population and human health can be scoped out of the EIA and be covered through other chapters?

5.9.19 Do consultees agree that Residential Visual Amenity Assessment can be scoped out of the EIA?

5.9.20 Do consultees agree that Telecommunications can be scoped out of the EIA?

5.9.21 Do the consultees agree that vulnerability of the development to risks of major accidents and/or disasters can be scoped out of the EIA?

6 CONSULTATION AND NEXT STEPS

6.1 Public Consultation

6.1.1 In line with the Scottish Government Energy Consents Unit (ECU)'s publication titled, "Good Practice Guidance for Applications under Section 36 and 37 of the Electricity Act 1989", published in February 2022, the applicant is currently planning to conduct two rounds of public consultation prior to the submission of the S.36 application for consent.

6.1.2 An initial public exhibition is currently planned to be held in the spring of 2024. The public event will be advertised in a local newspaper and on a website.

6.1.3 A second round of public consultation will be held at later stage of the EIA and design process, prior to submission of the application.

6.1.4 Written public comments received in response to each of these methods will be documented and analysed, and a Public Consultation Report will be produced. Feedback on any adjustments incorporated to the project design or on how public comments were addressed will be noted in the EIAR, as well as in the Pre-Application Consultation Report.

6.2 Consultation Bodies and Non-Statutory Consultees

6.2.1 As part of this scoping process the applicant is inviting inputs from the consultation bodies and non-statutory consultees to inform the Proposed Development.

6.2.2 In addition to the receipt of this Scoping Report, consultees agreed with the ECU will receive a separate formal consultation email from the Scottish Government's Energy Consents Unit. Responses to this should be sent to econsentsadmin@gov.scot by the deadline specified in the email.

6.2.3 Copied responses should be sent to:

Spyridonas (Spyros) Angeli
Environmental Consultant
RSK Environment Ltd
65 Sussex St
Glasgow
G41 1DX

Tel: (0)7786 473397
Email: sangeli@rsk.co.uk

APPENDIX 1
REPORT FIGURES

Figure No.	Description
2.1	Site Location
2.2	Scoping Turbine Layout
5.1.1	Bare Ground Blade Tip ZTV 45km
5.1.2	Screening Hub Height ZTV 45km
5.1.3	Screening Blade Tip ZTV 20km
5.2.1	Ecology Study Areas
5.2.2	Statutory Sites Designated for Ecological Interest
5.3.1	Statutory Designated Sites for Nature Conservation (Ornithology)
5.3.2	Vantage Point (VP) Survey Plan
5.3.3	Vantage Point (VP) Survey Plan
5.3.4	Target Species Flight Activity (Year 1)
5.3.5	Target Species Flight Activity (Year 2)
5.3.6	Breeding Bird Survey Areas
5.6.1	Indicative Abnormal Indivisible Loads (AIL) and Construction Traffic Routes

APPENDIX 2
LIST OF CONSULTEES

Statutory Consultees
Energy Consents Unit (ECU)
The Highland Council (THC)
Historic Environment Scotland
NatureScot
SEPA
Non-Statutory Consultees
Aberdeen Airport
British Telecom (BT)
British Horse Society Scotland
Highlands and Islands Airports
Civil Aviation Authority - Airspace
Crown Estate Scotland
Defence Infrastructure Organisation
Edinburgh Airport
Fisheries Management Scotland
Glasgow Airport
Glasgow Prestwick Airport
John Muir Trust
Joint Radio Company
Ness District Salmon Fishery Board (NDSFB)
Ness and Beauly Fisheries Trust (NBFT)
Oban Airport
Marine Scotland Science (MSS)
Mountaineering Scotland
NATS Safeguarding
National Trust for Scotland
Nuclear Safety Directorate
RSPB Scotland
Saving Wildcats
Scottish Forestry
Scottish Water
Scottish Wildlife Trust
Scottish Wildland Group
Scottish Rights of Way and Access Society (ScotWays)
Transport Scotland
Visit Scotland
Woodland Trust

National Grid
Additional Consultees
The Met Office
The Coal Authority
Community Councils
Fort Augustus and Glenmoriston Community Council
Glengarry Community Council
Lochduich Community Council
Dornie and District Community Council
Lochalsh Community Council
Kyle Community Council