Glen Ullinish Coastal Delivery Facility

EIA Scoping Report

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Client Name:	Muirhall Energy Ltd.
Client Contact:	Andrew Marshall
Client Address:	Muirhall Farm, Auchengray, Carnwath, ML11 8L
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Author:	Various
Reviewed:	B Fisher
Approved:	G Spowage
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ITPEnergised Office:	4th Floor, Centrum House, 108-114 Dundas Street, Edinburgh, EH3 5DQ

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Abbreviations

Abbreviation	In Full
AADT	Annual Average Daily Traffic movements
ACOP	Approved Code Of Practice
AIL	Abnormal Indivisible Load
AIS	Automatic Identification System
ALARP	as low as reasonably practicable
AOD	Above Ordnance Datum
AtoN	Aids to Navigation
AQMAs	Air Quality Management Area
AW	Ancient Woodland
BESS	Battery Energy Storage System
BGS	British Geological Survey
BMEP	Biodiversity Management and Enhancement Plan
BNG	British National Grid
BTO	British Trust Ornithology
CAFS2	Cleaner Air For Scotland 2
CAR	The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR)
CBC	Common Bird Census
CCA	Climate Change Assessment
CD	Chart datum
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CTMP	Construction Traffic Management Plan
DAS	Design and Access Statement
DDV	Drop Down Video
Defra	The Department of Environment, Food and Rural Affairs
DfT	Department for Transport
DIN	Dissolved Inorganic Nitrogen
DMRB	Design Manual for Roads and Bridges
DO	Dissolved Oxygen
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EPUK	Environmental Protection UK

Abbreviation	In Full
EQS	Environmental Quality Standards
FRA	Flood Risk Assessment
FSA	Formal Safety Assessment
GCR	Geological Conservation Review
GEN	General Policies
GLA	General Lighthouse Authority
GLVIA3	Guidelines for Landscape and Visual Assessment (Third Edition)
GPP	Guidance for Pollution Prevention
GVA	Gross Value Added
GW	Gigawatts
GWDTE	Groundwater Dependent Terrestrial Ecosystems
ha	hectare
HAT	Highest astronomical tide
HBRG	Highland Biological Recording Group
HDV	Heavy Duty Vehicles
HLDP	Highland Local Development Plam
HRA	Habitats Regulations Assessment
HwLDP	Highland wide Local Development Plan
HS	Historic Scotland
IALA	The International Association of Marine Aids to Navigation and Lighthouse Authorities
IAMMWG	Inter-Agency Marine Mammal Working Group
IEFs	Important Ecological Features
IMO	International Maritime Organisation
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
LCT	Landscape Character Type
LDV	Light Duty Vehicles
LI	Landscape Institute
LVIA	Landscape and Visual Impact Assessment
MAIB	Marine Accident Investigation Branch
MARPOL	The International Convention for the Prevention of Pollution from Ships
MCA	Maritime Coastguards Agency
MCO	Maritime Coastguards Agency
MGN	Marine Guidance Note

Abbreviation	In Full
MHWN	Mean high water neaps
MHWS	Mean high water springs
MLWN	Mean low water neaps
MLWS	Mean Low Water Springs
MHWS	Marine High Water Springs
MINNS	Marine Invasive Non-Native Species
MMMP	Marine Mannal Mitigation Protocol
MMO	Marine Management Organisation
MPA	Marine Protected Area
MS-LOT	Marine Scotland Licencing Team
MSMS	Marine Safety Management System
MU	Management Units
MW	Megawatts
N	Nitrogen
NBN	National Biodiversity Network
NEPS	National Electrofishing Programme for Scotland
NH_3	Ammonia
NHZ	Natural Heritage Zone
NLB	Northern Lighthouse Board
NMP	Scotland's National Marine Plan
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NPF3	Scotland National Planning Framework 3
NPF4	Scotland National Planning Framework 4
NPS	National Policy Statement
NRA	Navigational Risk Assessment
NRTF	National Road Traffic Forecast
NS	NatureScot
NSR	Noise Sensitive Receptor
NtM	Notices to Mariners
NTS	Non-technical Summary
NVC	National Vegetation Classification
OWPS	Onshore Wind Policy Statement
PAC	Pre-Application Consultation
PAN	Planning Advice Note

Abbreviation	In Full
PM	Particulate Matter
PMFs	Priority Marine Features
PMP	Peat Management Plan
PSRA	Peat Slide Risk Assessment
RAMS	Risk Assessment and Method Statement
RNLI	Royal National Lifeboat Institution
RVAA	Residential Visual Amenity Assessment
RYA	Royal Yachting Association
SAC	Special Area of Conservation
SCOS	Special Committee on Seals
SEPA	Scottish Environment Protection Agency
SHA	Statutory Harbour Authorities
SLA	Special Landscape Area
SMAs	Seal Management Areas
SOC	Scottish Ornithologist Club
SPA	Special Protection Area
SPP	Scottish Planning Policy
SPP	Species Protection Plan
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
SWMP	Site Waste Management Plan
SWPA	Shellfish Water Protected Area
THC	The Highland Council
TTTCC	Through the Tidal Cycle Count
ug/m^3	Micrograms per cubic metre
UK	United Kingdom
UK Hab	UK Habitat Classification System
UKHO	United Kingdom Hydrographic Office
VOR	Valued Ornithological Receptor
VP	Vantage Point
WestPlan	West Highlands and Islands Local Development Plan
WFD	The Water Framework Directive (WFD – 2000/60/EC)
ZTV	Zone of Theoretical Visibility

1. Introduction

1.1 Preamble

1.1.1 Muirhall Energy Limited (hereafter referred to as "the Applicant") intends to apply to the Marine Scotland and the Highland Council (THC) for permission to construct and operate Glen Ullinish Coastal Delivery Facility and dredging works (hereafter referred to as the "Proposed Development"). The Proposed Development will be a quay facility that will entail construction works on land and in the marine environment.

1.1.2 The Proposed Development will accommodate vessels in excess of 1,350 tonnes and is therefore a 'Schedule 1' development in terms of Section 8(2) of Schedule 1 of both the Marine Works (Environmental Impact Assessment) (Scotland) 2017 and the Town and Country Planning (Environmental Impact Assessment) (Scotland) 2017 (together referred to as the 'EIA Regulations').

1.1.3 Schedule 1 development always require an Environmental Impact Assessment (EIA) to be undertaken to assess potential environmental effects and, as such, an EIA Report will be submitted in support of the proposed marine licence and planning consent applications, in line with the EIA Regulations.

1.1.4 The Proposed Development is situated on the eastern shore of Loch Caroy, located approximately 5.5 km north-west of Struan and 7 km south-east of Dunvegan in the north-west of Skye. The approximate Site centre is at British National Grid NG 30612 41957.

1.1.5 The Proposed Development is for new marine infrastructure to facilitate the delivery of turbine components for the construction of the nearby Glen Ullinish II Wind Farm, or consented Glen Ullinish Wind Farm, and potentially other wind farm developments in the area. The Section 36 Application for the Glen Ullinish II Wind Farm was submitted in July 2023. The Proposed Development will include a new quay and associated infrastructure for bringing turbine components onto north-west Skye.

1.1.6 This document forms the EIA Scoping Report submitted to Marine Scotland and THC in order to request an EIA Scoping Opinion, on the content of the EIA for the Proposed Development.

1.2 The Applicant

1.2.1 Muirhall Energy was established in 2009 and is a leading independent developer of renewable energy projects, based in South Lanarkshire, Scotland. To date, Muirhall Energy has constructed over 150 megawatts (MW) of onshore wind projects across the United Kingdom (UK), and, in addition, has a 4.5 gigawatt (GW) pipeline of onshore wind and battery energy storage in development.

1.2.2 Muirhall Energy is known for its community-focussed ethos and is committed to ensuring that the opportunities that wind energy projects can bring to individuals, communities and businesses are optimised. Muirhall Energy has already invested more than £4 million in communities close to its projects, and the company believes that community involvement at the earliest opportunity is a vital part of the wind farm development process.

1.2.3 Through engagement at the earliest stages of each development, Muirhall Energy aims to create open, positive, and mutually beneficial relationships with residents, businesses and organisations which are then strengthened and maintained throughout the lifespan of the project. Muirhall Energy previously commissioned the 46 MW Crossdykes Wind Farm in Dumfries and Galloway which was one of the first subsidy-free wind farms to be completed in the UK. By working openly and transparently with the communities nearest Crossdykes Wind Farm, the project achieved another first by securing a shared ownership agreement with the local community which will benefit the area for the lifetime of the project.

1.2.4 Muirhall Energy has at all stages in the development process, worked with the community to create a shared ownership model which works for them, and now hopes this model can be used by other communities including those near Glen Ullinish II Wind Farm. This work at Crossdykes Wind Farm was recognised by the industry at the 2021 Scottish Green Energy Awards where Muirhall Energy won the Best Engagement Award and Muirhall were nominated for a British Renewable Energy Association Community Award at the British Renewable Energy Awards.

The Purpose of the EIA Scoping Report

1.2.5 EIA Scoping Report, as per the EIA Regulations1, provides the opportunity for the Applicant to ask Marine Scotland and THC for an opinion as to the scope and level of detail of information to be provided within the EIA Report.

1.2.6 The Applicant recognises the value of the scoping approach, and the purpose of this report is to ensure that relevant issues are identified and to confirm that the assessment process described will meet legislative requirements.

This EIA Scoping Report:

- Describes the existing Site and its context;
- Describes the nature and purpose of the Proposed Development;
- Identifies key organisations to be consulted in the EIA process;
- Establishes the format of the EIA Report;
- Provides baseline information; and
- Describes potential significant effects and the proposed assessment methodologies for various technical assessments to be covered in the EIA Report.

1.2.7 Each technical section concludes with questions for consultees regarding the information provided in this EIA Scoping Report, for which it would be useful to receive feedback. Not all questions will be relevant to all consultees, therefore we request that consultees provide feedback only on those questions appropriate to them. The questions should not be considered an exhaustive list, and consequently consultees are welcome to provide feedback on any issue they consider relevant to the Proposed Development. If consultees elect not to respond, the Applicant will assume that consultees are satisfied with the approach adopted/proposed.

1.3 Environmental Impact Assessment

1.3.1 The EIA Regulations require that before consent is granted for certain types of development, an EIA must be undertaken. The EIA Regulations set out the types of development which must always be subject to an EIA (Schedule 1 development) and other developments which may require EIA if there is the potential for significant environmental effects as a result of the development (Schedule 2 development). As noted in Section 1.1, the Proposed Development is a Schedule 1 development and, therefore, requires an EIA.

1.3.2 EIA is a process which includes the requirement for the preparation of an EIA Report by the Applicant. This, amongst other matters is required to provide a description of the potential significant environmental effects of the development proposed. The work involved in this process informs the eventual design of the proposals. The final design will seek to avoid, reduce, offset, and minimise any adverse environmental effects through mitigation. The EIA Report considers the effects arising during the construction and operation phases, as appropriate.

[1] Regulation 17 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 and Regulation 14 of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

1.3.3 The structure of the EIA Report will follow the requirements of the EIA Regulations (Schedule 4) and other relevant good practice guidance. It is expected that the EIA Report will comprise up to five volumes:

- Volume 1 – Written Statement;
- Volume 2– Figures;
- Volume 3 – Technical Appendices; and
- Volume 4 – Confidential Appendices (if required).
- A Non-Technical Summary (NTS) will also be provided.

1.3.4 Chapters 1 to 5 of Volume 1 will comprise of:

- An introduction;
- A description of the site selection and design iteration process;
- A description of the Site and its context;
- A description of the Proposed Development;
- Information on the approach to EIA and determination of significance of effects; and
- A summary of the relevant planning and policy considerations.

1.3.5 The remainder of Volume 1 will present a description of effects in respect of a range of environmental topics. Based on available baseline environmental information and the details of the Proposed Development, the environmental topics have been scoped based on their potential for significant environmental effects. This has determined the need to undertake an impact assessment to investigate each potential effect. Each of the topics will be reported as a chapter of Volume 1. The EIA Report will reference figures and technical studies, which will likely correspond to Volumes 2 to 4. The following topics will be considered:

- Landscape, Seascape and Visual Impact;
- Cultural Heritage and Marine Archaeology;
- Terrestrial Ecology and Ornithology;
- Marine Ecology and Ornithology;
- Air Quality;
- Airborne Noise and Vibration;
- Ground Conditions and Land Quality;
- Coastal Processes and Geomorphology;
- Water Sediment and Quality;
- Flood Risk, Drainage and Coastal Protection;
- Socioeconomics;
- Access, Traffic and Transport; and
- Commercial and Recreational Navigation.

1.3.6 The EIA Report will also include a schedule of mitigation measures and a summary of residual effects.

1.3.7 A standalone Planning Statement assessing the Proposed Development against all relevant planning and marine policy, along with a Pre-Application Consultation (PAC) Report explaining the consultation carried out with the local communities about the Proposed Development, will also accompany the applications for a marine licence and planning consent.

1.4 Consultation

1.4.1 Consultation is an important part of the EIA Report preparation process and assists in the identification of potential effects and mitigation measures. The Applicant began the consultation process in January 2023 through engagement with NatureScot on the proposed methodology for ornithology surveys.

1.4.2 As the Proposed Development is on the Isle of Skye, it falls within the jurisdiction of THC. The Applicant will be engaging with THC's major pre-application advice service. A virtual Pre-Application meeting will take place with THC on 14th February 2024 with key consultees NatureScot and the Scottish Environment Protection Agency (SEPA). This will include an introduction to the Proposed Development and provide an outline of the survey efforts undertaken to date.

1.4.3 The Applicant will also be engaging with Marine Scotland. This will allow the Applicant to introduce the Proposed Development and discuss the proposals.

1.4.4 Throughout the EIA and design iteration process, the Applicant will ensure that local communities and stakeholders are given the opportunity to provide feedback and are kept informed of project progress. A public exhibition event will be held shortly after submission of this EIA Scoping Report and a second public exhibition event will be held prior to submission of the EIA Report.

2. Proposed Development

2.1 Project Background

2.1.1 The Applicant's project company, Glen Ullinish WF 2 Ltd, submitted an application under Section 36 of the Electricity Act 1989 to construct and operate Glen Ullinish II Wind Farm (ECU Ref: ECU00004829). The Wind Farm will comprise of up to 47 wind turbines (200 m tip heights), with an indicative output capacity in the region of 310.2 MW, a battery energy storage system (BESS) with an indicative capacity of up to 120 MW, and associated infrastructure. A 40 year lifetime for the Wind Farm is sought.

2.1.2 A key constraint identified during the EIA process for the Glen Ullinish II Wind Farm is the delivery of turbine components to the Site. As part of the Transport Assessment (Chapter 12 of the Glen Ullinish Wind Farm II EIA Report), the port of entry for turbine components assessed is Kyle Harbour. A number of existing facilities in the area were considered but discounted due to physical or capacity constraints. Abnormal Indivisible Loads (AILs) for turbine components would travel from Kyle Harbour to the Site via the A87 from Kyle of Lochalsh to Sligachan, then the A836 to the Wind Farm site access north-west of Struan. Appendix 12.1 of the Transport Assessment, within the Glen Ullinish Wind Farm II EIA Report, estimates that 189 AIL convoys would be required for turbine components (three components per convoy).

2.1.3 While turbine component delivery via Kyle Harbour is feasible, the impact of the large number of AILs on the road network is recognised and was a key concern of the community throughout public consultation. In addition to the disruption, delivery of components into Kyle Harbour would result in a need to utilise a separate laydown area (likely Broadford Aerodrome) to transfer turbine blades between trailers (from blade lifters to super wings).

2.1.4 The Applicant commissioned several feasibility surveys and assessments to investigate the potential to create a new port of entry within closer proximity of the Wind Farm site access to minimise disruption on the road network.

2.2 Site Selection

2.2.1 An initial Logistics Feasibility Report was undertaken by Osprey in 2021 to provide an assessment of marine logistics relating to the delivery of turbine components. This Report looked at existing facilities (Kyle, Uig, Portree, Kyleakin and Kishorn), and opportunities for temporary new landing points (utilising a temporary structure or roll-on/roll-off vessel). Due to constraints on maximum vessel sizes and existing users, Kyle Harbour was identified as the only suitable existing facility within close proximity. Kishorn was discounted due to the length of time it would take to barge components and the need to create a new landing point closer to the Wind Farm Site. Roll-on/roll-off vessels were discounted due to their limited cargo capacities. In addition to Kyle, it was recommended that opportunities for a new landing point were investigated further.

2.2.2 A multibeam bathymetric survey was undertaken in 2022 for areas identified around Loch Caroy and Loch Beag to establish water depths, and topographical data was gathered for the coastline. These are locations situated to the north-west and south-east of the Wind Farm's proposed access which were considered to have potential for a landing location. These surveys confirmed that at both locations the necessary water depths could be achieved. An initial engineering design feasibility for options along the coastline at both locations was undertaken by Wallace Stone and a Navigation Feasibility Study undertaken by ABPmer. Both studies confirmed the feasibility of constructing a new landing point at these locations.

2.2.3 Through further desktop assessment, options at Loch Beag were ruled out due to challenging topography, the distance of suitable locations from the existing public road, likely visual impacts on the Gesto Bay and Amar River Viewpoints to the east and likely disruption on the settlement of Struan. Loch Caroy was considered more suitable due to the proximity of sites to the existing public

road, more gentle gradients, more limited visibility from the public road and avoiding key viewpoints, and easier access to the Wind Farm site access. The three current options at Loch Caroy (described below) are considered to be the most suitable in the general location of Loch Caroy due to water depths, navigation constraints and the existing topography.

2.3 Site Description and Context

2.3.1 The Proposed Development is situated on the eastern shore of Loch Caroy, approximately 5.5 km northwest of Struan and 7 km southeast of Dunvegan in the northwest of Skye (refer to **Figure 2.1**). Loch Caroy is one of several sea lochs linking to the wider Loch Bracadale. The Proposed Development is located approximately 3 km northwest of the proposed access to the Glen Ullinish II Wind Farm from the A863. The location of the Proposed Development in relation to the Wind Farm is shown in **Figure 2.2** 'Location of Proposed Development in relation to Glen Ullinish Windfarm'.

2.3.2 The Site comprises a land area of 30 hectares (ha), comprising gently sloping grassland with Class 1 peatland bordering the east of the Site. The Site is bound to the west by Loch Coroy with topography gently decreasing towards the shoreline from approximately 40 m Above Ordnance Datum (AOD) in the east to 10 m in the west. The Site is bound by the A863 along its eastern border and several small watercourses are present across the Site.

2.3.3 There is a small area of commercial forestry located approximately 0.2 km east of the Site.

2.3.4 The Vatten to Feorlig Core Path traverses ~1.1 km to the north-west of the Site.

2.3.5 There are numerous potential residential receptors surrounding the Site, with one residential receptor (property of the Landowner) near the Site centre at British National Grid NG 30572 41910.

2.3.6 There are a number of environmental designations within 10 km of the Site, including the following:

- Inner Hebrides and the Minches Special Area of Conservation (SAC) is directly adjacent to the south-west border of the Site;
- Ancient woodland 4.9 km north-west, 7.9 km northwest and 8.9 km north-east;
- Dunvegan Castle Garden and Designed Landscape 8.3 km north-west;
- An Cleireach Geological Conservation Review (GCR) 2.8 km north-east;
- Part of Ros a' Mheallain GCR 5.1 km east;
- Part of Ros a' Mheallain GCR 6.3 km south-east;
- Talisker GCR 9.7 km south;
- 24 listed buildings, three of which are Category A listed with the closest being Dunvegan Parish Church located ~7.8 km north-west
- 17 Scheduled Monuments including 'Abhainn Bhaile Mheadhonaich, broch and standing stone 145 m SE of An Cairidh' located 0.3 km north-east of the Site and 'Dun Feorlig, broch 230 m NNE of Feorlig Farm' located 0.4 km to the north-west;
- An Cleireach Site of Special Scientific Interest (SSSI) 2.8 km north-east;
- Talisker SSSI 8.3 km south-east and 9.1 km south; and
- Duirinish Wild Land Area 6.4 km to the west of the Site.

2.3.7 **Figure 2.3** shows environmental, geological, and key cultural heritage designations within 10 km of the Proposed Development.

2.4 Proposed Development Description

2.4.1 Three indicative locations for the Proposed Development are currently identified (Options A, B and C) within the 7 Ose Croft landholding (hereafter referred to as 'the Site') for the purpose of the EIA Scoping Request. **Figure 2.4** provides the proposed Site layout showing all three of the Site options.

Currently, Option C is the preferred option; however, it is still the early stages of the project and outcomes of the survey work and design iterations will help inform the preferred option as the project progresses.

2.4.2 The Proposed Development is expected to consist of the following elements, which may be subject to change through the EIA design process:

- Dredging of seabed, including disposal and removal of rock:
  - Option A – 400 m^3;
  - Option B – 1,605 m^3 (possible rock removal);
  - Option C – 0 m^3.
- Quay structure:
  - A 94m long x 40 m wide;
  - Infilled or open piled concrete deck;
  - Up to 120 piles (660 X 25.4 mm steel tubular); and
  - Land reclamation to facilitate structure.
- Laydown Area:
  - Turbine component and associated equipment storage;
  - Storage and welfare buildings; and
  - Associated lighting, security fencing, drainage, and other services.
- Land reclamation;
- Access track to public road, with potential floating sections (if peat is to be crossed) and watercourse crossings;
- Habitat management and enhancement;
- Landscaping; and
- Pontoons and/or slipway for use by smaller vessels.

2.5 Construction Phase

Construction of the Site access track

2.5.1 Access tracks will include long radius horizontal curves and a 12 m cutting width, to accommodate the blade swept paths and overhang.

2.5.2 Parts crossing over peatland will utilise floating road construction where possible in accordance with the relevant design guidance. Any peat to be excavated to accommodate access will be subject to a Peat Management Plan (PMP) and peat condition assessment.

2.5.3 Overburden will be stripped to exposed rockhead. Drill and blast will be used to excavate the rock.

2.5.4 For all three options, the lower parts of the access track will be cuttings in rock. These cuttings will be a continuation of the excavation necessary to form the laydown areas. The construction methods will be similar to that of the laydown areas, as described in Section 2.5.15.

2.5.5 Temporary access roads will be required on top of the rock cuttings, to enable construction plant access and for removal of overburden. It is expected that these would be reinstated if not forming part of the final access design.

Land reclamation

2.5.6 For each indicative layout, the laydown area will require a cut into the hillside and areas of land reclamation. Reclamation would involve transport and placing of rockfill won from the cuttings and placing this on the areas of bed and foreshore. An area of between 5,000 and 6,500 m2 will need to be reclaimed.

2.5.7 Dredging and rock placement would be possible from a rock access bund using a land based long reach excavator to depths of around -5 m Chart Datum (CD). Where depths exceed this, the excavator will have to work off a barge.

2.5.8 The laydown areas are currently proposed to extend to the -7.5 m CD contour. This work would be tidally affected. It is envisaged that rock bunds would be extended out from the shore to provide access for a long reach excavator.

Construction of the new quay

2.5.9 The quay will either be an open pilled quay deck or solid infilled quay. This will be dependent on more detailed design and surveys. One design approach will be confirmed and assessed within the EIA Report.

Open pilled quay

2.5.10 The open pilled quay substructure comprises a 6 m x 6 m grid of piles. Precast concrete U beams, approximately 6 m long, will span seaward between the piles and in-situ concrete will be poured to form continuous composite crosshead beams. Piles will be connected to crosshead beams via pile plugs. Precast concrete deck units, approximately 300 mm thick, will then be placed between the crossheads, and in-situ concrete, approximately 500 mm thick, will from the finished deck level.

2.5.11 Building seaward from the shore allows for progressive construction which minimises the requirement for working directly over water.

2.5.12 The open pilled quay design is of a modular nature such that it can be extended in any seaward direction in bays of 6 m.

Solid infilled quay

2.5.13 A solid infilled quay would comprise of combi-wall construction (heavy steel tubes with sheet piles between) with a reinforced concrete capping beam and tie rods back to a sheet pile anchor wall to resist horizontal loads.

2.5.14 With both of the design options, the deck would be set at no lower than +7.5 m CD; around 1.6 m above Highest Astronomical Tide (HAT). However, a slightly higher deck level of +8.5 m CD may be advantageous for lifting operations using on board cranes on vessels with a high main deck and reducing the amount of surplus material generated across the quay and laydown area.

Laydown area

2.5.15 Construction methods will be similar to that of the access tracks, cutting into rock in lower parts of the Site. The laydown level will tie into the final quay deck level (likely +7.5 m or +8.5 m CD). The finished surface will likely comprise a 500 mm layer of Specification for Highway Works (SHW) Type 6F2 (75 mm down). This material could be manufactured on site using a mobile crusher.

2.5.16 Drainage is to be incorporated into the design to manage ground pore pressures and surface water management.

Dredging (if required)

2.5.17 The most viable method of removal will be dredging by a long reach excavator fitted with a hydraulic breaker and bucket, working on a barge. The dredged rock would most likely be loaded onto a split hopper barge and taken to a licenced marine disposal site. A tug would also be required.

2.5.18 There are two Marine Scotland licenced dredge spoil deposit sites near Skye. These are:

- HE034, Loch Snizort, just south of Uig; and
- HE070, Sound of Sleat, southeast side of the Sleat peninsula.

2.5.19 Both disposal sites are around 40 nautical miles from the Proposed Development; at least a 12 hour round trip for a tug and split hopper barge. At least four round tips would be required, for the estimated dredge quantity at Site Option B.

2.6 Operational Phase

2.6.1 During the operational phase, vessels will deliver turbine components which will be offloaded using cranes positioned on the quay. Components will either be loaded straight on to a trailer and taken to the Wind Farm or stored in the laydown area. Components may require to be stored in the laydown area due to weather conditions, time restrictions on abnormal deliveries or for other logistical reasons. The laydown area will be able to store up to 8 full turbines, based on the candidate turbine for Glen Ullinish II Wind Farm, including tower parts, blades, and nacelle. Components will be laid down on cradles and blades may be stacked on top of each other.

2.6.2 It is expected that most vessels will require the use of two temporary mobile cranes on the quayside to offload components; however, some vessels may be able to use integrated cranes to off-load to the quay. Crawler cranes will also be required to take components from the quay to the laydown area if being stored. It is expected that off-loading a delivery of turbine components could take between 6 and 12 hours. Ancillary mobile plant may also be required, depending on the nature of operations, along with lighting depending on visibility conditions.

2.6.3 During periods where components are not being moved, operations will generally be restricted to general maintenance, inspections, and security.

2.7 Decommissioning Phase

2.7.1 Following the completion of the construction of the Glen Ullinish II Wind Farm, it is intended that the facility will continue to be used for the delivery of turbine components for other wind farm developments currently planned on the Isle of Skye (including re-powering). This may also include longer term maintenance where replacement components require to be delivered during the operational life of wind farms.

2.7.2 It is also expected that the facility will be required to assist in the decommissioning phase of Glen Ullinish II and other wind farms in the area. A 40-year operational life has been requested for Glen Ullinish II Wind Farm. As the impact during decommissioning will be no greater than that during construction, and if deemed necessary by THC or Marine Scotland, decommissioning can be addressed through appropriately worded planning conditions. Therefore, it is not considered necessary to consider decommissioning works for the Proposed Development at this time and it can be scoped out of further assessment.

2.7.3 Additional users of the facility may be identified who could utilise the facility when components are not being delivered.

2.8 Cumulative Developments

2.8.1 The EIA Regulations state that cumulative effects should be considered as a part of the EIA. It will therefore be important to consider the cumulative effects of the Proposed Development with other developments in the area, including those that are currently operational, consented and in planning. The closest operational cumulative development is Caroy Jetty, approximately 100 m to the north of the Proposed Development. An initial search of THC planning portal suggests that there are currently no potential cumulative developments close to the Site, but recent Marine Licence Applications include:

- Pontoon at Loch Dunvegan, Isle of Skye approximately 8.4 km north-west of the Proposed Development, granted December 2022;
- Harbour redevelopment at Staffin, Isle of Skye ~31.6 km to the north-east, granted October 2022;
- Pontoon at Greshornish, Isle of Skye ~12.2 km north-east, granted October 2020; and
- Pontoon at Isle of Skalpay, Skye ~30.6 km south-east, granted December 2019.

2.8.2 It should be noted that this record will be updated throughout the EIA process, up to an agreed point prior to submission of the application. We welcome any further information from stakeholders on additional proposed developments that should be considered.

3. Planning and Policy Context

3.1 Introduction

3.1.0 This section of the EIA Scoping Report summarises the relevant legislative and policy context that will frame the environmental assessment process. The EIA Report will not assess the Proposed Development against the legislative and policy context, rather this will be undertaken in a separate Planning Statement.

3.2 Legislation

3.2.0 The Proposed Development is a 'Schedule 1' development in terms of Section 8(2) of Schedule 1 of both the Marine Works (Environmental Impact Assessment) (Scotland) 2017 and the Town and Country Planning (Environmental Impact Assessment) (Scotland) 2017 (together referred to as the 'EIA Regulations').

3.2.1 It is proposed that one EIA Report will support both the planning application and marine licence(s), subject to agreement between Marine Scotland and THC. The EIA Report will be undertaken with the relevant legislation and guidance outlined in the topic specific sections of the EIA Scoping Report.

3.2.2 Planning permission is required for the carrying out of development under the Town and Country Planning (Scotland) Act 1997 (as amended). Terrestrial planning control extends down to Mean Low Water Springs (MLWS).

3.2.3 The Proposed Development requires a marine licence for works below the Mean High Water Springs (MHWS) under the Marine (Scotland) Act 2010. As such, there is an overlap in consenting regimes in the inter-tidal zone. Works within this zone require planning permission and marine licence for development and licensable marine activities. A marine licence will be required for the construction of the quay and associated reclamation. A separate marine licence will be required for any dredging works, if required, subject to the final design.

3.2.4 As the Proposed Development is a Schedule 1 Development, it is also a 'Major Development' under the Town and Country Planning (Hierarchy of Development) (Scotland) Regulations 2009. As such, the Proposed Development is subject to the statutory pre-application consultation procedures for the planning application. A Proposal of Application Notice (PAN) has been submitted to THC, which sets out the Applicant's proposed public consultation. This will include two rounds of public consultation, not less than 14 days apart. A Pre-Application Consultation (PAC) Report will be submitted alongside the planning application, summarising the consultation undertaken and how feedback has been addressed in the Proposed Development.

3.2.5 The Proposed Development will also be subject to marine licence PAC procedures under the Marine Licensing (Pre-Application Consultation) (Scotland) Regulations 2013. This requires the Applicant to undertake pre-application consultation to allow local communities, environmental groups, and other interested parties to comment on the Proposed Development prior to a marine licence application being submitted. Subject to agreement with Marine Scotland and THC, the Applicant intends to hold this event alongside the second round of consultation required for the planning application.

3.3 National Planning Policy

3.3.1 Section 25 of the Town and Country Planning (Scotland) Act 1997 (as amended) sets out that in the determination of planning applications, 'regard is to be had to the development plan…' and that 'the determination is, unless material considerations indicate otherwise, to be made in accordance with that plan.'

3.3.2 National Planning Framework 4 (NPF4) was laid before parliament on 8th November 2022. NPF4 was formally approved on 11th January 2023 and came into effect on 13th February 2023. NPF4 sets out Scottish Government's national planning policy and now forms part of the statutory development plan in the determination of planning applications.

3.3.3 NPF4 has superseded National Planning Framework 3 and Scottish Planning Policy (SPP) published in June 2014. As such, NPF3 and SPP are not considered. Strategic Development Plans also now cease to have effect.

3.3.4 The Chief Planner Letter: Transitional arrangements for National Planning Framework 4 – February 2023 also states that: "Whether an LDP has been adopted prior to or after the adoption and publication of NPF4, legislation states that in the event of any incompatibility between a provision of NPF and a provision of an LDP, whichever of them is the later in date is to prevail (Town and Country Planning (Scotland) Act 1997 ("the 1997 Act"); section 24(3))."

3.3.5 Part 1 – A National Spatial Strategy for Scotland 2045 of NPF4 sets out that to deliver sustainable places, liveable places, and productive places, the spatial strategy should be in line with the six overarching spatial principles: Just transition, Conserving and recycling assets, Local living, Compact urban growth, Rebalanced development, and Rural revitalisation.

3.3.6 NPF4 sets out 18 national developments to support the delivery of the spatial strategy. Strategic Renewable Electricity Generation and Transmission infrastructure is identified as national development. This includes renewable energy generation exceeding 50 megawatts (MW) in capacity, new or replacement high voltage energy transmission, and new or upgraded infrastructure supporting high voltage electricity lines, cables, and interconnectors. While the Proposed Development is not a national development, it would support the delivery of this class of national development.

3.3.7 Part 1 of NPF4 also sets out Regional Spatial Priorities for North and West Coast and Islands. It states that:

3.3.8 'This part of Scotland will be at the forefront of our efforts to reach net zero emissions by 2045. It is a diverse area, from Shetland and Orkney in the north, to the Outer and Inner Hebrides and the coastal areas of Highland and Argyll and Bute. As one of the most renewable energy rich localities in Europe with significant natural resources, there is a real opportunity for this area to support our shared national outcomes.'

3.3.9 One of the priorities outlined for this area is to 'Maximise the benefits of renewable energy whilst enhancing blue and green infrastructure, decarbonising transport and building resilient connections.'

3.3.10 Part 2 of NPF4 sets out national planning policy. Part 3 – How to use this document explains that:

3.3.11 'The policy sections are for use in the determination of planning applications. The policies should be read as a whole. Planning decisions must be made in accordance with the development plan, unless material considerations indicate otherwise. It is for the decision maker to determine what weight to attach to policies on a case-by-case basis. Where a policy states that development will be supported, it is in principle, and it is for the decision maker to take into account all other relevant policies.'

3.3.12 A summary of the key relevant policies of NPF4 is provided below.

3.3.13 **Policy 1** Sustainable Places states that 'When considering all development proposals significant weight will be given to the global climate and nature crises'. The intended use of the Proposed Development is to service renewable energy development. Equally, the impact of the Proposed Development on both crises will need to be considered throughout.

3.3.14 **Policy 2** Climate mitigation and adaptation intends 'To encourage, promote and facilitate development that minimises emissions and adapts to the current and future impacts of climate

change.' Impacts of rising sea levels and storm events will be a key design consideration for the Proposed Development.

3.3.15 **Policy 3** Biodiversity intends 'To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.' This policy places an emphasis on a policy shift from preserving biodiversity to developments delivering enhancements. It is expected that a Habitat Management Plan (HMP) will support the Proposed Development, outlining how this will be delivered.

3.3.16 **Policy 4** Natural places intends 'To protect, restore and enhance natural assets making best use of nature-based solutions.' It states that unacceptable impacts on the natural environment will not be supported. This includes impacts on designated sites and protected species. This will be addressed in the Terrestrial Ecology, Marine Ecology and Ornithology chapters of the EIA Report.

3.3.17 **Policy 5** Soils is specifically relevant to the Proposed Development in relation to development on 'peatland, carbon rich soils and priority peatland habitat'. Part c) specifically outlines that such development will only be supported in certain circumstances, such as essential infrastructure with a specific locational need and renewable energy generation. Impact of peat will be a key design consideration and addressed in the Ground Conditions and Land Quality chapter of the EIA Report.

3.3.18 **Policy 7** Historic assets and places intends 'To protect and enhance historic environment assets and places, and to enable positive change as a catalyst for the regeneration of places.' Particular regard to the integrity of the setting of scheduled monuments in the surrounding area, alongside any marine archaeological records in the area, will be addressed in the Cultural Heritage & Marine Archaeology chapter of the EIA Report.

3.3.19 **Policy 10** Coastal development intends 'To protect coastal communities and assets and support resilience to the impacts of climate change.' Policy 10 sets out the criteria where development proposals in undeveloped coastal areas may be supported:

- Are necessary to support the blue economy, net zero emissions or to contribute to the economy or wellbeing of communities whose livelihood depend on marine or coastal activities, or is for essential infrastructure, where there is a specific locational need and no other suitable site;
- Do not result in the need for further coastal protection measures taking into account future sea level change; or increase the risk to people of coastal flooding or coastal erosion, including through the loss of natural coastal defences including dune systems; and
- Are anticipated to be supportable in the long-term, taking into account projected climate change; or
- iv. are designed to have a very short lifespan.

3.3.20 **Policy 13** Sustainable Transport states that proposals 'which support a mode shift of freight from road to more sustainable modes, including last-mile delivery' will be supported.

3.3.21 **Policy 14** Design, quality, and place states that proposals will be supported where consistent with the six qualities of successful places: Healthy, Pleasant, Connected, Distinctive, Sustainable and Adaptable. It goes on to state that 'Development proposals that are poorly designed, detrimental to the amenity of the surrounding area or inconsistent with the six qualities of successful places, will not be supported.' This will be addressed through the design and throughout the supporting assessments.

3.3.22 **Policy 22** Flood risk and water management seeks to ensure that new development in areas at risk from flooding are appropriate, such as essential infrastructure or water compatible uses. Development should also not increase the risk of flooding elsewhere. This will be addressed in the design and Flood Risk, Drainage & Coastal Processes chapter of the EIA Report.

3.3.23 **Policy 23** Health and safety intends 'To protect people and places from environmental harm, mitigate risks arising from safety hazards and encourage, promote and facilitate development that

improves health and wellbeing.' EIA Report topics such as Noise, Air Quality and Commercial and Recreational Navigation are of particular relevance.

3.3.24 **Policy 25** Community wealth building intends 'To encourage, promote and facilitate a new strategic approach to economic development that also provides a practical model for building a wellbeing economy at local, regional and national levels.' This includes promoting local supply chains and services, job creating and enabling community ownership or management.

3.3.25 In addition to the policies of NPF4, Scottish Government's suite of planning advice notes will also be considered in the Proposed Development.

3.4 Local Planning Policy

3.4.1 The Highland-wide Local Development Plan (HwLDP) was adopted by THC in April 2012. The HwLDP 'sets out the overarching spatial planning policy for the whole of the Highland Council area...'.

3.4.2 The vision set out in the HwLDP for the West Highlands and Islands is that it will: 'be better connected, have more efficient public service provision, have more affordable housing, have a more diverse economy, have rationalised but protected its lifeline services, be re-connected with its land and natural resources, have a greater and more diverse age profile of population than currently projected, be a place of outstanding natural and cultural heritage, and have re-established and promoted its unique identify.'

3.4.3 In relation to Coastal Development, the HwLDP states:

'Development proposals for the coast or for installations in nearshore waters should, in both their location and their design, show consideration to the range of existing interests ensuring best use of resources taking account of existing and planned marine activities and development. Proposals should not have an unacceptable impact on the natural, built, or cultural heritage and amenity value of the area.'

3.4.4 However, the HwLDP is significantly out of date in planning terms and in the event of any incompatibility with the policy provisions of NPF4, NPF4 will prevail.

THC's latest Development Plans Newsletter (March 2023) states that the development plan will comprise NPF4, and a new Highland Local Development Plan (HLDP) once adopted. The HLDP has yet to be published but is eventually intended to supersede the three individual area Local Development Plans in place. It is expected by THC that the Evidence Report for the HLDP will be published in the summer of 2024.

3.4.5 The Proposed Development is within the area currently covered by the West Highland and Islands Local Development Plan (WestPlan), which was adopted in September 2019. The Site is not within a defined settlement or allocated for any particular use. Again, in the event of any incompatibility with the policy provisions of WestPlan and NPF4, NPF4 will prevail.

3.4.6 A suite of guidance documents support the HwLDP and WestPlan, such as: Highland Coastal Development Strategy (2010), Flood Risk and Drainage Impact Assessment Supplementary Guidance (2013) and Assessment of Highland Special Landscape Areas (2011).

3.5 Marine Policy

3.5.1 Scotland's National Marine Plan (NMP): A Single Framework for Managing Our Seas was adopted in March 2015. The NMP fulfils Scottish Ministers requirement under Section 5(1) of the Marine (Scotland) Act 2010 to prepare a national marine plan for the Scottish marine area.

3.5.2 The NMPs vision for the marine environment is 'Clean, healthy, safe, productive and diverse seas; managed to meet the long-term needs of nature and people'. This vision is underpinned by a number of strategic objectives:

- Good Environmental Status Descriptors;
- Achieving a sustainable marine economy;
- Ensuring a strong, healthy, and just society;
- Living within environmental limits;
- Promoting good governance; and
- Using sound science responsibility.

3.5.3 The NMP states that 'This Plan and future regional plans must be taken into account when licensing applications are considered. The marine licensing process will also consider specific aspects of proposed developments and use, reaching a balanced view on whether an individual project should be consented.'

3.5.4 The NMP sets out Scottish Ministers policies to guide the sustainable development of Scotland's seas. These are set out as General Policies (GEN), which apply to all future development, and Sectoral Policies which apply to specific uses. A summary of the key relevant policies is provided below.

3.5.5 **GEN 2** Economic benefit promotes 'Sustainable development and use which provides economic benefit to Scottish communities…'. GEN 3 Social benefit focuses on encouraging social benefits when consistent with the other policies and objectives of the NMP. These will be addressed in the Socio Economics chapter of the EIA Report.

3.5.6 **GEN 4** Co-existence states that the marine and terrestrial planning regimes should seek to ensure that developments and uses co-exist. This will be addressed throughout the EIA Report and inform the design process.

3.5.7 **GEN 5** Climate change states that 'Marine planners and decision makers must act in the way best calculated to mitigate, and adapt to, climate change.' This will explicitly be addressed in the Climate Change chapter, but also throughout the EIA Report.

3.5.8 **GEN 6** Historic environment states that 'Development and use of the marine environment should protect and, where appropriate, enhance heritage assets in a manner proportionate to their significance.' This will be addressed in the Cultural Heritage & Marine Archaeology chapter of the EIA Report.

3.5.9 **GEN 8** Coastal process and flooding states that 'Developments and activities in the marine environment should be resilient to coastal change and flooding, and not have unacceptable adverse impact on coastal processes or contribute to coastal flooding.' This will be addressed in the Flood Risk, Drainage & Coastal Protection chapter of the EIA Report.

3.5.10 **GEN 9** Natural heritage highlights the legal requirements for protected areas and species, the importance of Priority Marine Features and opportunities for development to enhance the health of the marine environment. GEN 10 Invasive non-native species seeks to reduce the introduction of invasive non-native species, which is relevant in the case of new vessel movements to the Site. These will be addressed in the Marine Ecology, Terrestrial Ecology and Ornithology chapters of the EIA Report.

3.5.11 **GEN 11** Marine litter states that 'Developers, users and those accessing the marine environment must take measures to address marine litter where appropriate. Reduction of litter must be taken into account by decision makers.' This will be taken into account in the design process and appropriate management put in place during construction and operation.

3.5.12 **GEN 12** Water quality and resource states that 'Developments and activities should not result in a deterioration of the quality of waters to which the Water Framework Directive, Marine Strategy Framework Directive or other related Directives apply.' This will be addressed in the Water and Sediment Quality Chapter of the EIA Report.

3.5.13 **GEN 13** Noise states that 'Development and use in the marine environment should avoid significant adverse effects of man-made noise and vibration, especially on species sensitive to such effects.' This will be addressed in the Noise Chapter of the EIA Report.

3.5.14 **GEN 14** Air quality states that 'Development and use of the marine environment should not result in the deterioration of air quality and should not breach any statutory air quality limits.' This will be addressed in the Air Quality Chapter of the EIA Report.

3.5.15 **GEN 21** Cumulative impacts states that 'Cumulative impacts affecting the ecosystem of the marine plan area should be addressed in decision making and plan implementation.' This will be addressed throughout the EIA Report where appropriate.

3.5.16 Section 13 sets out the sectoral objectives and policies for Shipping, Ports, Harbours, and Ferries. The objectives seek to promote sustainable economic growth in the sector, while also being adaptable to climate change.

3.5.17 Policy TRANSPORT 1 considers navigational safety and seeks to ensure that negative impacts on existing or planned shipping routes and access to harbours is avoided. This will be addressed in the Commercial & Recreational Navigation chapter of the EIA Report.

3.5.18 TRANSPORT 5 states that 'Port and harbour operators should take into account future climate change and extreme water level projections, and where appropriate take the necessary steps to ensure their ports and harbours remain viable and resilient to a changing climate.' This will explicitly be addressed in the Climate Change chapter, but also throughout the EIA Report.

3.5.19 Policy REC & TOURISM 2, set out in Section 12, is also relevant in that impacts of development on recreation and tourism should also be taken into account. This will be addressed in the Socio Economics chapter of the EIA Report and design.

3.6 Scoping Questions to Consultees

- Q3.1 – Do you agree that the appropriate guidance and legislation has been identified?

4. Air Quality

4.1 Introduction

4.1.1 This chapter defines the proposed methodology for the air quality assessment that will be included within the EIA Report. It also details the methods that will be used to establish the baseline conditions within the Site and its surroundings, and the process used to determine the impacts of the Proposed Development on the local human and ecological receptors present.

4.1.2 During the construction phase, particulate matter (PM10 and PM2.5) emissions may be generated by construction activities and use of plant onsite. Shipping movements in close proximity to the Proposed Development and vehicle movements on the local road network may also cause emissions of Nitrogen Oxides (NOx) and Nitrogen Dioxide (NO2).

4.1.3 During the operational phase, similar emissions may be generated by vessels using the port, ships' engines running whilst in dock, movement of plant around the port area and additional road traffic movements on the local road network.

4.2 Baseline Description

4.2.1 To understand the air quality conditions in the vicinity of the Proposed Development, a desk-based review of available air quality information has been undertaken, including the following:

- A review of the most recent local monitoring data and Air Quality status Report published by THC.
- A review of background air quality data published by The Department of Environment, Food and Rural Affairs (Defra) and the Scottish Air Quality Website.
- A review of mapping data local to the development Site to identify high sensitivity human and ecological receptors that may be experience changes in air quality during the construction and operational phases of the Proposed Development.

Road Traffic Emissions

4.2.2 The Proposed Development is located in a rural area, adjacent to Loch Coray on the Isle of Skye. Air quality in this area is mainly influenced by emissions from road transport with the nearest main road to the Proposed Development being the A863.

Air Quality Management Areas

4.2.3 Air Quality Management Areas (AQMAs) are located where the objectives for NO2, PM10 or PM2.5 have been or are at risk of being exceeded. THC have declared only one AQMA – in Inverness – and, as such, this is not relevant to the Proposed Development.

Background Pollutant Concentrations

4.2.4 The Scottish Air Quality Website provides background pollution concentration estimates for NO2 and PM10 for each 1km x 1km grid square across Scotland from 2018 to 2030. Defra provides estimates for PM2.5 for the whole of the UK for the same years.

4.2.5 The background annual mean concentrations for each grid square containing the location of the Proposed Development within the current year (2023) are provided in **Table 4-1.**

Table 4-1: Summary of Background Pollutant Concentrations (2023)

Grid Square Co-Ordinates (centre on OS Reference)	NO_2 (ug/m^3)	PM_{10} (ug/m^3)	$PM_{2.5}$ (ug/m^3)
130500,842500	1.1	4.8	2.9
130500,841500	1.1	4.8	2.9

4.2.6 The background concentrations taken from the Scottish Air Quality website and Defra are well below their respective air quality objectives for all pollutants in the current year (2023) (see **Section 4.3**) and are expected to decrease further in future years due to changes in traffic fleet composition.

Local Air Quality Monitoring

4.2.7 THC carries out automatic monitoring of NO2, PM10 and PM2.5 alongside passive diffusion tube monitoring within the local authority area. None of these monitoring locations are located in the vicinity of the Proposed Development and as such, are not relevant to air quality conditions at the development Site.

Sensitive Receptors

4.2.8 Sensitive receptors include high sensitivity human or ecological habitats that may be impacted by changes in air quality due to emissions from construction or operational activities associated with the Proposed Development. These include high sensitivity locations such as residential dwellings, educational and healthcare settings as well as designated ecological sites, including but not limited to, Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ancient Woodland (AW).

4.2.9 During the construction phase human and ecological receptors may experience increases in particulate matter in connection with construction activities and increases in NO2 due to increased movements on the road network and of mobile plant on the development Site.

4.2.10 Once operational, sensitive receptors, both human and ecological, may experience changes in the concentration of NO2 and particulate matter emitted from additional movements on the road network and shipping movements associated with the Proposed Development.

Human Receptors

4.2.11 Sensitive human receptors identified in the vicinity of the Proposed Development are:

- Residential receptors on the A863, approximately 70 m from the Proposed Development to the east. This includes a number of private homes, small farms and Achalochan House.
- Residential receptors at Seacliff House, located adjacent to the Proposed Development to the North. Additionally planning permission has been granted for further residential dwellings alongside the northern boundary of the site.
- Residential receptors and holiday residences including Loch Carroy Pods and 12 Ose, to the north of the Site, the nearest of which is approximately 100 m from the Proposed Development.

Ecological Receptors

4.2.12 The primary ecological receptor identified in the vicinity of the Proposed Development is the Inner Hebrides and Minches Special Area of Conservation (SAC).

4.2.1 Option A of the Proposed Development falls within the boundaries of the Inner Hebrides and Minches SAC.

4.2.2 The identified human and ecological receptors would all be considered high sensitivity receptors in line with the criteria outlined in the Institute of Air Quality Management (IAQM) Construction Guidance on the assessment of dust from demolition and construction, 2014.

4.3 Guidance & Legislation

4.3.1 The Air Quality (Scotland) Regulations 2000 were brought in as part of devolved legislation for Scotland.

4.3.2 The Air Quality (Scotland) Amendment Regulations 2002 introduced the PM10 objective of 18 micrograms per cubic metre (ug/m3).

4.3.3 Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe consolidates ambient air quality legislation. It sets out the limit values for selected pollutants and the requirements for action to be taken when the levels of air pollutants consistently exceed limit values.

4.3.4 The Air Quality Standards (Scotland) Regulations 2010 transpose Directive 2008/50/EC into Scottish Law.

4.3.5 The Air Quality Standards (Scotland) Regulations 2016 introduced the objective value of 10 ug/m3 for PM2.5.

4.3.6 The Environment Act 1995 enabled the production of the national Air Quality Strategy which contains standards, objectives, and measures for improving air quality.

4.3.7 The Environment Act 2021 proposed that the target of 10 ug/m3 for PM2.5 be brought in across the whole of the UK and a population exposure target reduction of 35% by 2040. The standards applicable to this study are shown in **Table 4-2**.

Table 4-2: AQS for Scotland Applicable to this Assessment

Pollutant	Concentration	Measured as
Human Receptors		
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate material (PM_{10})	50 µg/m^3, not to be exceeded more than 7 times a year	24-hour mean
	18 µg/m^3	Annual mean
Particulate material ($PM_{2.5}$)	10 µg/m^3	Annual mean

4.3.8 Environmental Protection Act 1990 sets out which fugitive emissions constitute a statutory nuisance. This would include:

- *"Smoke emitted from premises so as to be prejudicial to heath or a nuisance;*
- *Fumes or gases emitted premises so as to be prejudicial to heath or a nuisance;*
- *Any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to heath or a nuisance; and*
- *Any accumulation or deposit which is prejudicial to heath or a nuisance."*

4.3.9 National Planning Framework 4 (NPF4) describes the Scottish Government's overall planning policy for Scotland. The document lays out policies for development which are to be considered by local authorities and developers.

4.3.10 Cleaner Air For Scotland 2 (CAFS2) sets out how the Scottish Government intends to achieve further reductions in air pollution in order to fulfil their legal requirements. The documents set out measures to achieve compliance with objectives.

4.3.11 IAQM Guidance on the Assessment of Dust from Demolition and Construction sets out a methodology for assessing the emissions from the construction phase activities and assigning a risk level to receptors within the recommended study areas.

4.3.12 Environmental Protection UK (EPUK)/IAQM: Land Use Planning and Development Control – Planning For Air Quality ensures that air quality is adequately considered in the land-use planning and development control processes. It provides thresholds for detailed assessment of the operational phase of development.

4.3.13 Defra: Local Air Quality Management Technical Guidance (LAQM.TG (22)) supports local authorities in carrying out their duties under the Environment Act 2021. It provides guidance on the methodologies and thresholds used in assessing developments.

4.3.14 WestPlan was adopted in 2019 and provides polices that support sustainable development in line with the vision for Highland and Island communities.

4.4 Proposed Scope of Assessment

Proposed Study Area

Construction

4.4.1 The IAQM Dust Assessment Guidance recommend the study area for the construction phase assessment be defined as follows:

- *"Human receptors within 350 m of the site boundary; or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s);" and/or*
- *"Ecological receptors within 50m of the site boundary; or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s)."*

The construction phase study area will extend 350 m from the Proposed Development Site boundary. It will also include a 50 m buffer either side of the proposed road used by construction traffic, up to a distance of 500 m from the Site entrance. If construction traffic flows exceed the EPUK/IAQM thresholds for a detailed assessment, the study area will include the road network affected by construction phase traffic.

Operational

4.4.2 The study area for the operational phase assessment of local air quality can be defined in accordance with the EPUK/IAQM Planning Guidance which advises that developments may potentially impact on air quality where generated vehicle movements exceed the following scoping criteria for developments outside of an AQMA:

- A change of Light Duty Vehicles (LDV) flows of more than 500 Annual Average Daily Traffic movements (AADT); and/or
- A change in Heavy Duty Vehicles (HDVs) of more than 100 AADT.

4.4.3 Detailed traffic data is not available for the Proposed Development; however, thresholds will not be exceeded during the operational phase. It is anticipated that a maximum number of 190 abnormal load convoys (three AILs per convoy) would occur during the Wind Farm construction period, which, if compressed into one year would result in 1,140 two-way delivery trips annually with a small additional number of staff trips. It is unlikely that the construction of more than one wind farm would be undertaken at one time. The Proposed Development will not exceed the IAQM thresholds and therefore, a detailed modelling assessment has been scoped out of the assessment.

Assessment Methodology

Construction Phase Assessment

4.4.4 In accordance with IAQM Construction Guidance, the following methodology for the assessment of air quality during the construction phase is proposed:

- Identify the potential risk from dust emitted from construction activities and recommend an appropriate level of mitigation for the scale of the Proposed Development to minimise any impacts on local receptors.
- Receptors within the study area (350 m for human and 50 m for ecological receptors) will be identified and their risk of impacts from the construction phase considered.
- Mitigation measures will be recommended for mitigation of effects and for inclusion in a Construction Environmental Management Plan, taking into account dust risk at each receptor and its level of sensitivity.

Construction Phase Traffic Emissions Assessment

4.4.5 Construction traffic flows will be compared to the traffic scoping criteria detailed in the EPUK/IAQM Planning Guidance. If these are exceeded and meet the requirement for detailed assessment, the potential impacts on NO2, PM10 and PM2.5 concentrations at sensitive receptors will be subject to assessment as per the EPUK/IAQM Planning Guidance.

4.4.6 **Table 4-3** provides a summary of the potential effects on air quality scoped in and scoped out of the EIA.

Table 4-3: Impacts scoped in and out of the EIA Assessment

Features	Scoped In		Justification
	Construction	Operation	
Effects of dust emissions from construction activities on human health and air quality local to the development Site.	Yes	No	The IAQM Construction Guidance requires all sensitive human receptors within 350 m of the Site boundary to be included within a construction dust risk assessment due to potential for significant effects on receptors located within this distance.
Effects of dust emissions from construction activities on designated ecological sites local to the development	Yes	No	The IAQM Construction Guidance recommends that designated sites within 50 m of the Proposed Development should be included in the construction dust assessment. As the Inner Hebrides and the Minches SAC is within the boundary of Site A, this has been scoped into the EIA. Site B and Site C are more than 50m from any designated sites. As such an assessment of dust emissions on ecological sites during the construction phase has been scoped out for these sites.
Effects on human health of vehicle trips increasing	No	No	Indicative trip rates provided show that operational trips will not

Features	Scoped In		Justification
	Construction	Operation	
emissions of nitrogen dioxide (NO_2) and Particulate matter.			exceed the thresholds detailed in the EPUK/IAQM Planning Guidance and therefore a detailed assessment of construction and operational phase vehicle impacts are scoped out.
Effects on local designated conservation sites due to changes in NO_x, NH_3 and Nitrogen/Acid Deposition due to emissions from construction plant and vehicles and increased road vehicle movements on the local road network.	No	No	Indicative trip rates provided show that operational trips will not exceed the thresholds detailed in the EPUK/IAQM Planning Guidance and therefore a detailed assessment of construction vehicle impacts are scoped out.
Effects on sensitive human receptors due to increased emissions of nitrogen dioxide (NO_2) and Particulate matter due to increased road vehicle movements on the local road network during the operational phase of the Proposed Development.	No	No	Indicative trip rates provided show that operational trips will not exceed the thresholds detailed in the EPUK/IAQM Planning Guidance and therefore a detailed assessment of operational vehicle impacts are scoped out.
Effects on sensitive human and ecological receptors due to increased shipping movements into the port, leading to increased emissions of NO_2, Particulate matter and Sulphur Dioxide (SO_2) during the Construction and Operational Phase of the Proposed Development.	No	No	LAQM TG22 only recommends assessment of shipping impacts on local receptors if there are either 5,000 large ship movements a year and exposure within 250 m of the berths or there are 15,000 ship movements are year with exposure within 1 km of the Site. As the Proposed Development is not expected to exceed these thresholds this has been scoped out of the EIA assessment.

4.5 Potential Mitigation

Construction

4.5.1 It is anticipated that a Construction Environment Management Plan (CEMP) would be prepared for the Proposed Development. The air quality input to the CEMP would include mitigation measures identified during assessment of construction phase impacts and commensurate with the size and scale of the development and risk of air quality impacts to local receptors.

Operational

4.5.2 Mitigation measures to be implemented in the design of the Proposed Development would be agreed with the local authority upon consultation. Initial mitigation measures being investigated for their potential use include provision of port electricity connections for ships to connect with to prevent emissions from engines running whilst in dock.

4.6 Potential Impacts

Construction

4.6.1 The impacts associated with the construction phase may include temporary emissions of particulate matter from construction activities affecting high sensitivity human and ecological receptors.

Operational

4.6.2 It is not anticipated that there will be any impacts associated with the operational phase on local sensitive receptors.

4.7 Scoping Questions to Consultees

- Q4.1 – Do you agree that the appropriate guidance and legislation has been identified?
- Q4.2 – Do you agree that all relevant receptors have been identified?
- Q4.3 – Do you agree that the methodology is appropriate and proportionate?

5. Landscape, Seascape and Visual Impact

5.1 Introduction

5.1.1 It is acknowledged from the outset that, in common with almost all larger scale developments, some landscape and visual effects would occur as a result of the proposals, including potentially some significant effects.

5.1.2 A key principle of the European Landscape Convention is that all landscapes matter and should be managed appropriately. It is also acknowledged that landscapes provide the surroundings for people's daily lives and often contribute positively to the quality of life and economic performance of an area.

5.1.3 It is therefore proposed that a Landscape, Seascape and Visual Impact Assessment is undertaken as part of the EIA and an LVIA Chapter be included in the EIA Report. This will be undertaken by Chartered Landscape Architects at Pegasus Group.

5.1.4 It is proposed that the LVIA will consider the potential effects of the Proposed Development upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

5.2 Baseline Description

5.2.1 The Proposed Development Site is located in the north-west of Skye, adjacent to Loch Caroy and close to the A863. Three indicative locations for the Proposed Development are currently identified (Options A, B and C).

Landscape Character

5.2.2 In March 2019, NatureScot published an updated set of Landscape Character Type boundaries and descriptions, which includes mapping and descriptions which supersede earlier documents.

5.2.3 The Proposed Development is located in the Stepped Moorland Landscape Character Type (LCT 360). The key characteristics of the Stepped Moorland LCT are defined as:

- Distinctive stepped landform rising from the coast up to moderate elevation uplands.
- Clearly defined, often sloping, terraces and steps which are sometimes inclined.
- Hills tend to be asymmetrical with a horizontal emphasis and broad base.
- Low stepped inclined shelves or low cliffs at the coast, often forming promontories and seen as repeated, low, horizontal headlands extending into the sea, and receding into the distance.
- Stepped character varies depending on depth of deposits over terraces and height of vertical faces.
- Repetitive pattern of vertical faces and gently sloping or slanting terraces.
- Exposed basalt rock faces separating level or sloping terraces of grass or heather moorland.
- Vertical steps may appear as low outcrops or walls of rock and form steep cliffs along coastlines.
- Isolated large to moderate scale forest blocks, usually found in more elevated areas masking and competing with the stepped profile form.
- Trees and plantations largely absent on coastal lowlands.

- Extensive grazed rough grassland, bog and heather, with more intensively grazed grassland at the coast, which is smoother and greener.
- Mainly un-settled, with a few solitary farms, the type is interspersed with 'Farmed and Settled Lowlands – Skye & Lochalsh' at the coast.
- Main roads and single-track roads traverse lower slopes and passes; occasional forest, farm and windfarm tracks extend up mid-slopes.
- Mainly single-track roads pass through coastal areas, connecting adjacent settlements.
- Abandoned shielings and field patterns.
- Exposed and open, extensive visibility.
- At the coast, high inter-visibility between promontories and rare views of inaccessible coastlines and mountains.

Landscape Designations

5.2.4 The Site lies within the North-West Skye Special Landscape Area (SLA), described within the Assessment of Highland Special Landscape Areas as including "some of the most varied and dynamic scenery to be found within Highland's landscapes".

5.3 Guidance & Legislation

5.3.1 The LVIA will be undertaken in accordance with the principles of best practice, as outlined in published guidance documents, notably the third edition of the Guidelines for Landscape and Visual Assessment (GLVIA3), (Landscape Institute and the Institute for Environmental Management and Assessment, 2013).

5.3.2 The methodology and assessment criteria proposed for the assessment has been developed in accordance with the principles established in this best practice document. It should be acknowledged that GLVIA3 establishes guidelines, not a specific methodology. The preface to GLVIA3 states that "This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand."

5.3.3 The approach has therefore been developed specifically for this assessment to ensure that the methodology is fit for purpose.

5.3.4 As part of the development of the proposed methodology, consideration has also been given to the following documents:

- SNH Guidance Note for Coastal Character Assessment (July 2018);
- Guidelines for Landscape Character Assessment, Countryside Agency and SNH (2002);
- Landscape Institute (LI) Technical Guidance Note 06/19 Visual representation of development proposals (Landscape Institute, September 2017); and
- LI Technical Guidance Note 02/19 Residential Visual Amenity Assessment (RVAA), (Landscape Institute, March 2019).

5.4 Proposed Scope of Assessment

5.4.1 It is proposed that the main objectives of the LVIA will be as follows:

- to identify, evaluate and describe the current landscape / seascape character of the Site and its surroundings, and also any notable individual or groups of landscape features within the Site;
- to determine the sensitivity of the landscape/seascape to the type of development proposed;

- to identify potential visual receptors (i.e., people that would be able to see the Proposed Development) and evaluate their sensitivity to the type of changes proposed;
- to identify and describe any impacts of the Proposed Development in so far as they affect the landscape/seascape and/or views of it and evaluate the magnitude of change due to these impacts;
- to identify and describe any mitigation measures (including mitigation which is inherent in the design and layout of the Proposed Development) that have been adopted to avoid, reduce, and compensate for landscape/seascape and visual effects;
- to identify and assess any cumulative landscape/seascape and visual effects;
- to evaluate the level of residual landscape/seascape and visual effects; and
- to make a professional judgement about which effects, if any, are significant.

Distinction between Landscape/Seascape and Visual Effects

5.4.2 In accordance with the published guidance, landscape and visual effects shall be assessed separately, although the procedure for assessing each of these is closely linked. A clear distinction has been drawn between landscape and visual effects as described below:

- Landscape/seascape effects relate to the effects of the Proposed Development on the physical and perceptual characteristics of the landscape/seascape and its resulting character and quality; and
- Visual effects relate to the effects on specific views experienced by visual receptors and on visual amenity more generally.

Proposed Study Area

5.4.3 In order to assist with defining the study area, a digital Zone of Theoretical Visibility (ZTV) model has been produced as a starting point to illustrate the geographical area within which views of the different components of the Proposed Development on the Site are theoretically possible. This was based on a 'bare-earth' scenario, whereby the screening effect of areas of existing vegetation or built features in the landscape are not taken into account. The ZTV plans were modelled using the currently proposed maximum height for the proposed crane of 50 m, and the maximum height of 8 m for the areas where turbine blades are to be stored and are presented at **Figures 5.1** and **5.2.**

5.4.4 The ZTVs are a useful tool used to provide a focus on the area and receptors that are most likely to be affected by a Proposed Development but should always be subject to verification in the field. In this regard, Site visits shall always form the primary basis in understanding the actual likely visibility of development at the Site.

5.4.5 Having reviewed the ZTVs and with regard to best practice guidance, it is proposed that the LVIA will consider an initial 10 km radius study area. Detailed assessment will then be provided for a 5 km section of this study area, which it is considered represents a proportionate extent of the study area and the limit within which any potential significant effects might occur.

Visual Receptors

5.4.6 A detailed consideration of the potential for effects to the visual amenity of receptors in the landscape surrounding the Site will be set out in the LVIA. This visual assessment will be informed by a selection of representative assessment viewpoints, which are listed below, each of which will be illustrated with annotated viewpoint photography (LI Type 1 visualisations). In turn for one of the viewpoints a photomontage will be prepared in line with both NatureScot and Highland Council best practice guidance for visualisations.

5.4.7 The LVIA will focus on the potential effects of the Proposed Development on different receptor groups, comprising settlements, footpath users, recognised tourist routes, long distance walking routes, cycle routes and centres for tourism.

Proposed LVIA Viewpoint Locations

5.4.8 It is proposed that the 5 locations set out in **Table 5.1** are included as viewpoints in the LVIA. The locations which are illustrated on **Figure 5.1** represent visual receptors and character types at a range of distances and directions from the Site. Some of the viewpoints are intended to be representative of the visual experience in a general location whereas other viewpoints illustrate the view from a specific or important vantage point.

Table 5-1 Proposed LVIA Viewpoints

Viewpoint Number	Location	OS Grid Reference
1	Minor Road on western shore of Loch Caroy	129809, 842209
2	A683, bridge over Caroy River	130277, 843872
3	A683, Caroy	130657, 843174
4	Minor Road, near Feorlig	129862, 843053
5	Caroy Jetty	130609, 842551

5.4.9 Each of the representative viewpoints will be visited to evaluate the sensitivity of views. In addition, the study area will also be extensively visited to consider the visibility of the Proposed Development as receptors move through the landscape.

5.4.10 The viewpoints will be used as the basis for determining the effects on visual receptors within the Study Area. The level of effect experienced by different visual receptor groups will be determined by considering in tandem the sensitivity and view with the magnitude of impact.

Visualisations

5.4.11 For each of the above viewpoints, annotated daytime photography (LI Type 1 visualisations) will be prepared. In turn for one of the viewpoints a photomontage will be prepared in line with both NatureScot and the Highland Council best practice guidance for visualisations. It is proposed that a photomontage be prepared for Viewpoint 1, to illustrate the view looking back to the development from the opposite side of the Loch.

5.5 Potential Mitigation

5.5.1 Best practice guidance for EIA states that mitigation measures may include:

- avoidance of effects;
- reduction in magnitude of effects; and
- compensation for effects (which may include enhancements to offset any adverse effects).

5.5.2 The primary mitigation to be adopted in relation to the Proposed Development will be embedded within the design of the Proposed Development and will relate to the consideration that will be given to avoiding and minimising landscape/seascape and visual effects during the evolution of the Proposed Development layout. This is sometimes referred to as 'mitigation by design'.

5.5.3 In addition, where appropriate new planting will be proposed to seek to reduce effects through screening or filtering of views.

5.6 Potential Impacts

5.6.1 The LVIA will consider the potential effects of the Proposed Development upon:

- individual landscape features and elements;
- landscape/seascape character;
- visual amenity and the people who view the landscape; and
- Landscape designations as appropriate.

The LVIA will consider the effects at different stages in the lifetime of the Proposed Development:

- during construction of the Proposed Development; and
- during the operational lifetime of the Proposed Development.

5.6.2 Effects during the first and third of these phases are considered to be temporary and would have a short duration. Effects associated with the operational phase of the Proposed Development are considered to be long term, reversible effects.

5.6.3 Following the judgement of the sensitivity of the landscape/seascape or visual receptor, the LVIA will provide a judgement as to the magnitude of change and the level of the effect experienced by each receptor, along with a statement to clarify whether the effect resulting from the Proposed Development is significant or not.

5.7 Scoping Questions to Consultees

- Q5.1 Do you agree with the proposed study areas?
- Q5.2 Do you agree with the proposed viewpoint locations? Do they cover all elements of the Proposed Development?
- Q5.3 Do you agree with the proposed daytime photomontage location and that night-time visualisations are not required?
- Q5.4 Do you agree with the matters to be scoped out (e.g. detailed assessment beyond 5 km; night time visualisations)?
- Q5.5 Do you agree that the proposed scope of the assessment is appropriate?

6. Cultural Heritage & Marine Archaeology

6.1 Introduction

6.1.1 This section provides an overview of the Cultural Heritage and Marine Archaeology context for the Proposed Development. It will outline the relevant legislative and policy framework and appropriate guidance to be used for the EIA, and the proposed methodology that this will inform. An initial description of the cultural heritage baseline of the Site is also set out.

6.1.2 This section of the Scoping Report has been produced by AOC Archaeology Group, a Registered Organisation of the Chartered Institute for Archaeologists (CIfA).

6.2 Baseline Description

Site Context

6.2.1 This assessment has reviewed Historic Environment Scotland's (HES) PastMap for National Record of the Historic Environment (NRHE) data, and the Highland Historic Environment Record (HER) online website for HER data in preparation for the Scoping baseline. An up to date HER extract will be obtained from the Highland Historic Environment Team (HET) as part of the preparation of the EIA Report Chapter. A preliminary review of historical mapping and satellite imagery of the Site has also been undertaken. Study areas, as defined in paragraph 6.4.2, have been used in the formation of the baseline.

6.2.2 The Site is located on the east side of Loch Caroy and generally comprises rough pasture and moorland set across somewhat undulating ground, with the Site Boundary extending west into the sea loch itself. The bedrock across the Site comprises a variety of basalts of the Skye lava groups formed during the Palaeocene, 66 to 56 million years ago, with peat recorded as superficial geology across portions of the Site, formed in the interim between the recession of the glacial ice sheets some 11,800 years ago and the present day (British Geological Survey 2023). The National soil map of Scotland describes the superficial deposits as comprising peaty gleys with dystrophic blanket peat (Soil Survey of Scotland Staff 1981).

6.2.3 Skye has a rich archaeological and historic landscape which, owing to the relative lack of modern development across the island, remains fairly well-preserved and with good potential for as-yet unknown archaeological remains to survive. The coastal setting for the Site is no exception; within 1 km of the Site, on opposing sides of the loch, are two Scheduled Iron Age brochs (Designation Numbers SM3494 and SM13664), as well as non-designated prehistoric and post-medieval assets, and within the wider surrounds there is evidence for prehistoric settlement and funerary activity and post-medieval ecclesiastical, settlement and agricultural remains.

6.2.4 Mackenzie's 1775 and 1776 maps of Skye illustrate Loch Caroy, though not named as such, with Balmenoch [Balmeanach] identified as a named place at the head of the loch. Thomsons's 1820 map illustrates the road to Dunvegan, the early iteration of the modern A863 which passes to the east of the Site. The first map to show the Site in detail is that produced by the Ordnance Survey (OS) in 1878, wherein the Site is shown to comprise unimproved ground and a coastline of crag and beach, with no structural remains depicted. The 1903 OS map depicts a single field boundary within the south portion of the Site, and two sub-rectangular building footings are identified within the Site on the 1967 OS map. These are visible in satellite imagery of the Site, which also shows areas of peat cuttings along the eastern extent, and areas of rig and furrow cultivation across the Site.

6.2.5 Loch Caroy is recorded as having been a safe anchorage by the Gazetteer for Scotland (2022), likely affording a more secure harbour than the more exposed Loch Bracadale, into which Loch Caroy opens to the south-west.

Designated Heritage Assets

6.2.6 Designation is the legal and or/policy recognition of some of Scotland's most important cultural heritage assets and places. It aims to ensure that the cultural, social, environmental, and economic value of such assets and places are recognised by law and through the planning system and other regulatory processes.

6.2.7 There are no designated assets recorded within the Site. Within the 1 km Study Area are recorded two Scheduled Monuments, Dun Feorlig broch (SM3494) c. 400 m to the north-west of the Site, and Abhainn Bhaile Mheadhonaich broch and standing stone (SM13664), c. 270 m north-east of the Site (Figure 6.1).

6.2.8 Within the 5 km Study Area there are a further eleven Scheduled Monuments comprising prehistoric chambered cairns, forts and settlement remains, and a medieval church (SM893, SM903, SM918, SM930, SM2139, SM3884, SM3885, SM7929, SM7930, SM90325 and SM13662; Figure 6.2).

6.2.9 Two Category B Listed Buildings (LB476 and LB1784) and one Category C Listed Building (LB1785) are also recorded within the 5 km Study Area (Figure 6.2). Orbost House (Category B Listed LB476) comprises a 19th century house situated 4.6 km north-west of the Site. Both LB1784 (Category B Listed Free Church) and LB1785 (Category C Listed former school) are situated in Struan, 5 km to the south-east of the Site and are of 19th century date.

Non-designated Heritage Assets

6.2.10 There are no non-designated heritage assets recorded within the Site.

Terrestrial Assets

6.2.11 Within the 1km Study Area, a total of ten non-designated terrestrial heritage assets have been recorded by the NRHE and Highland HER (**Figure 6.1**). These comprise: the Site of a possible prehistoric stone circle (NRHE Site Number NG34SW 25), north of Balmeanach and the Site; fish traps of unknown date recorded near the mouth of the river Abhainn Bhaile Mheadhonaich north of the Site (Highland HER Number MHG55814) and the river Ose to the south of the Site (MHG55815); and post-medieval settlement and cultivation remains to the north and south-east of the Site (MHG27653, MHG27656, MHG3153, MHG17613, MHG20522, NG34SW 20 and NG34SW 26).

Marine Assets

6.2.12 There are no recorded marine assets within the Site or 1 km Study Area according to the Canmore Maritime and United Kingdom Hydrographic Office (UKHO) wreck databases. There are 27 recorded marine assets within the wider 10 km Study Area.

6.2.13 The nature of the wrecking process means that the position of wrecking of a marine craft or ship is often an approximate position. This is especially true in periods prior to the 20th century and the development of modern navigational systems that allow for more accurate positions of ships and craft to be charted. Ships or marine craft that have been wrecked may also not sink straight away; they may shift with the tides and weather conditions before finally coming to rest on the seabed; elements of the wreck may be scattered over several locations on the seabed with wreckage coming ashore in the inter-tidal zone. Therefore, there is a degree of uncertainty as to whether wrecks with unknown or approximate positions of wrecking may have their final wreck sites within a specific area, in this case the Site. Furthermore, where wrecks have tentative locations the NRHE tends to assign the record of their loss to the lower left corner of a 1 km significant Ordnance Survey grid square.

6.2.14 The nearest recorded marine asset, wreckage (NG34SW 8001), comprises a single nameboard from the 19th century ship the Chevalier, found near Ose to the south-east of the Site. The 4-figure grid reference for this asset illustrates the broad 1 km general area that the wreckage was discovered in, illustrating the point above with regard to locations and wreck sites. The remaining 26 recorded marine assets comprise predominantly 19th and 20th maritime vessels, with earlier vessels

including a potential 16th century galleon (NG23NE 8005.00) and 18th century vessel (NG23NW 8003.00) also recorded. No prehistoric marine assets are recorded within the 10 km Study Area.

6.3 Guidance & Legislation

6.3.1 Legislation and Policy regarding the protection and conservation of cultural heritage assets, both terrestrial and marine, includes:

- Ancient Monuments and Archaeological Areas Act 1979 (as amended);
- Planning (Listed Buildings and Conservation Area) (Scotland) Act 1997 (as amended);
- Historic Environment (Amendment) (Scotland) Act 2011;
- Historic Environment (Scotland) Act 2014;
- National Planning Framework for Scotland 4 (2023);
- Historic Environment Policy for Scotland (HES 2019a), including Designation Policy and Selection Guidance (HES 2019b; updated 2020);
- The Marine (Scotland) Act 2010;
- The Protection of Military Remains Act 1986;
- The Merchant Shipping Act 1995;
- Scotland's National Marine Plan (2015);
- Highland-wide Local Development Plan (HwLDP; 2012); and
- West Highland and Islands Local Development Plan (WestPlan; 2019).

6.3.2 The following guidance documents will be consulted during the assessment to assist in the determination of potential effects on cultural heritage:

- The Charted Institute for Archaeologists (CIfA) Commissioning Work or Providing Consultancy Advice on Archaeology and the Historic Environment (2014a, updated 2020), Standard and Guidance for Historic Environment Desk Based Assessments (2014b, updated 2020), CIfA Code of Conduct: Professional Ethics in Archaeology (2014c, updated 2022), and Regulations for Professional Conduct (2019, updated 2021);
- Managing Change in the Historic Environment: Setting (HES 2016; updated 2020);
- NatureScot and HES's published guidance contained within 'Environmental Impact Assessment Handbook v5' (SNH & HES 2018);
- Our Past, Our Future: The Strategy for Scotland's Historic Environment (HES 2023);
- Planning Advice Note 2/2011: Planning and Archaeology (Scottish Government 2011); and
- The Highland Council's Highland Historic Environment Strategy- Supplementary Planning Guidance (2013).

6.4 Proposed Scope of Assessment

6.4.1 The Cultural Heritage and Marine Archaeology Chapter will identify the archaeological and cultural heritage value of the Site, including terrestrial and marine heritage assets, and will also identify any likely significant direct and setting effects which may result from the construction and operation of the Proposed Development to heritage assets within the defined study areas. Mitigation measures to offset any likely significant adverse effects will also be proposed.

Proposed Study Area

6.4.2 In order to assess the potential for direct and setting effects on archaeological and cultural heritage assets resulting from the Proposed Development, the following study areas are proposed:

- A core Study Area (the Site), which includes all land within the Site, will be subject to assessment for potential direct effects. An archaeological walkover survey of the terrestrial portion of the Site will be undertaken in order to identify any cultural heritage assets which may be directly impacted by the Proposed Development.
- A 1 km Study Area for the identification of all known cultural heritage assets and known previous archaeological interventions in order to help predict whether any similar hitherto unknown archaeological remains are likely to survive within the Site and thus could be directly upon by the Proposed Development.
- A 5 km Study Area for the assessment of potential effects on the settings of all designated cultural heritage assets including Scheduled Monuments, Listed Buildings, Inventoried Gardens and Designed Landscapes and Battlefields, and Conservation Areas. It is considered that designated assets beyond 5 km of the Site are unlikely to be affected by the Proposed Development due to the intervening distance, however consideration will be given to such assets if required by HES or the Highland Historic Environment Team (HET).
- A 10 km Study Area for the identification of all marine heritage assets. This is due to the nature of the wrecking process and the standard protocol for recording wrecks which means that the position of wrecking of a marine craft or ship is often an approximate position.

Assessment Methodology

6.4.3 The assessment will establish the historic baseline for the Proposed Development. Baseline data will be collated from the following sources:

- HES Designations portal for designated heritage asset data;
- National Record for the Historic Environment (NRHE) as held by HES for designated and non-designated terrestrial and marine heritage asset data;
- HER data, as held by the Highland HET, for non-designated terrestrial and marine heritage asset data;
- UKHO Marine Data Portal for UKHO Register of Wrecks;
- National Library of Scotland for published pre-OS maps, OS maps and pre-Hydrographic Office (HO)/UKHO and Ordnance Survey maps;
- National Collection of Aerial Photography (NCAP) as held by HES for vertical and oblique aerial photographs;
- Jim Bone Collection of Aerial Photography for oblique aerial photographs;
- Scottish Palaeoecological Archive Database (SPAD) and the Scottish Wetlands Archaeological Database (SWAD) for information regarding the palaeoecological and paleoenvironmental potential of the Site and surrounding landscape;
- Historic Land-Use Assessment Data for Scotland (HLAMap);
- Available client supplied data about the Proposed Development;
- Published archival sources;
- An archaeological walkover survey of the Proposed Development Site;
- Setting assessment visits to designated cultural heritage assets with theoretical visibility of the Proposed Development (as defined by Zone of Theoretical Visibility (ZTV) mapping); and
- Visualisations, where relevant, to support the setting assessment.

6.4.4 There is no LiDAR data for the area as provided by the Scottish Remote Sensing Portal.

6.4.5 The historic baseline will provide the framework upon which to base the assessment of potential effects. The assessment will distinguish between the term 'impact' and 'effect'. An impact is defined as a physical change to a heritage asset or its setting, whereas an effect refers to the consequences of this impact.

6.4.6 The first stage of the assessment will involve establishing the significance and importance of the heritage assets or their settings and assessing the sensitivity of the asset to change (impact). Using the proposed design for the Proposed Development, ZTV, and appropriate visualisations, an assessment of the impact magnitude will be made and a judgement regarding the level and significance of effect will be arrived at.

6.4.7 The EIA Handbook notes that "In the context of cultural heritage impact assessment, the receptors are the heritage assets and impacts will be considered in terms of the change in their cultural significance" (SNH & HES 2018, 181). Direct changes to assets during the construction phase will relate to the physical removal or damage (in part or whole) to a heritage asset.

6.4.8 NPF4 defines setting as "more than the immediate surroundings of a site or building and may be related to the function or use of a place, or how it was intended to fit into the landscape or townscape, the view from it or how it is seen from areas round about, or areas that are important to the protection of the place, site or building. 'Setting' is the way the surroundings of a historic asset or place contribute to how it is understood, appreciated and experienced." (HES, 2023, 156).

6.4.9 The setting assessment will be undertaken with reference to HES' Managing Change Guidance (2016) on setting and will aim to establish the current setting of the identified heritage assets, how that setting contributes to the understanding, appreciation, and experience of those assets and how the Proposed Development could impact upon this. The EIA Handbook states that *"When considering setting impacts, visual change should not be equated directly with adverse impact. Rather the impact should be assessed with reference to the degree that the proposal affects those aspects of setting that contribute to the asset's cultural significance"* (SNH & HES 2018, 181).

6.4.10 Assessment of the potential impacts upon setting will be informed by ZTVs, and, where necessary, visualisations (a combination of wireframes or photomontages). Any cultural heritage visualisations required will be agreed in consultation with HES and the Highland HET.

6.4.11 In terms of effects upon the setting of heritage assets, it is considered that only those effects identified as 'significant' by EIA standards in the assessment will have the potential to significantly, and adversely, impact integrity of setting. Where no significant effect is found it is considered that the integrity of an asset's setting will remain intact.

6.4.12 Where significant effects are found, a detailed assessment of adverse impact upon integrity of setting will be undertaken. The assessment of adverse impact upon the integrity of an asset's setting, where required, will be a qualitative one.

6.4.13 NPF4 indicates that development proposals affecting Scheduled Monuments will only be supported where "significant adverse impacts on the integrity of setting of a scheduled monument are avoided" (Scottish Government 2023, Policy 7h(ii), 46). Significant adverse impacts on integrity of setting are judged here to relate to whether a change would adversely affect the asset's key attributes or elements of setting which contribute to an asset's significance. It is considered that a significant impact upon the integrity of the setting of an asset will only occur where the degree of change that will be represented by the Proposed Development would adversely alter those factors of the monument's setting that contribute to cultural significance such that the understanding, appreciation, and experience of an asset are not adequately retained. In terms of effects upon the setting of heritage assets, it is considered that only those effects identified as 'significant' in EIA terms will have the potential to significantly adversely impact upon integrity of setting.

Receptors and Impacts Scoped Out of Assessment

6.4.14 It is proposed that the following are scoped out of the assessment:

- There are no anticipated direct effects on cultural heritage assets outwith the Site and further consideration of such effects will be scoped out of the assessment.
- Impacts on the settings of designated heritage assets outwith the 5 km Study Area will be scoped out as, given the relatively small scale of the Proposed Development and the large intervening distance, there are unlikely to be significant adverse effects.
- Impacts on the settings of designated heritage assets outwith the ZTV will also be scoped out of further assessment unless significant views towards the Site that feature said assets are identified. The justification for this is that assets outwith the ZTV and not within key views towards the Site will not be adversely impacted by the Proposed Development.
- Impacts on the settings of non-designated cultural heritage assets and features will be scoped out of the assessment as these assets are generally considered less sensitive to changes in their settings and are judged to be unlikely to be subject to significant settings effects. This will be confirmed with Consultees.

6.5 Potential Mitigation

6.5.1 Mitigation measures, which may include avoidance or minimisation of negative impacts, will be put forward within the EIA to address potential adverse impacts upon both known and as-yet-unknown heritage assets, both terrestrial and marine.

6.5.2 Compensatory mitigation in the form of public benefit initiatives will also be proposed where relevant, in line with NPF4's Historic Assets and Places Policy 7o (Scottish Government 2023, 46).

6.6 Potential Impacts

Construction Impacts

6.6.1 While no heritage assets, designated or non-designated, are recorded within the Site, there is considered to be potential for both terrestrial and marine archaeological remains to exist. During construction, the Proposed Development has the potential to result in direct impacts to any such as-yet-unknown heritage assets within the Site boundary, and such impacts could result in adverse effects.

6.6.2 Whilst there is some limited potential for impacts upon the setting of designated heritage assets to occur during the construction phase, any such effects would be temporary, and it is considered that setting effects resulting from construction would not exceed the predicted operational effects upon the setting of heritage assets.

Operational Impacts

6.6.3 The Proposed Development has the potential to result in impacts upon the settings of designated heritage assets in the surrounding landscape. A 5 km Study Area extending from the Site boundary will be employed to identify assets which may be subject to impacts upon their settings. Further consultation with HES and the Highland HET to identify assets to be assessed in the EIA Report will also be undertaken.

6.6.4 Based on a review of the ZTV data, a preliminary list of proposed visualisations is set out below. It is envisioned that these visualisations would be a combination of wireframe and photomontage visualisations, although this will need to be agreed with Consultees, and these visualisations will be used to aid in the assessment of potential settings effects:

- Abhainn Bhaile Mheadhonaich, broch and standing stone 145m SE of An Cairidh (SM13664);
- Dun Feorlig, broch 230m NNE of Feorlig Farm (SM3494); and

- Barpannan, two chambered cairns, Vatten Duirinish (SM893).

6.6.5 Visualisation requirements are the same for the three potential site options. There is also potential for LVIA VP1 (see Chapter 5) to be used as a proxy for the Dun Feorlig visualisation. The other visualisations will require separate wireframe and photomontage work to be produced, subject to the visualisation locations being approved by HES and THC.

6.7 Scoping Questions to Consultees

- Q6.1 Is the proposed assessment methodology, including proposed study areas, accepted?
- Q6.2 Are the receptors and impacts scoped out of the assessment accepted?
- Q6.4 Is the proposed list of visualisations sufficient?
- Q6.5 Are there any additional specific assets (including any assets beyond the 5 km Study Area) for which consultees would request inclusion within the assessment and visualisations to inform assessment of impact and level of effect?

7. Terrestrial Ecology

7.1 Introduction

7.1.1 This chapter defines the proposed methodology for the onshore ecological assessment that will be included within the EIA Report. It also details the methods that will be used to establish the baseline conditions within the Site and its surroundings, and the process used to determine the sensitivity of the habitats and species' populations present.

7.1.2 The ways in which habitats or species might be affected (directly or indirectly) by the construction and operation of the Proposed Development will be assessed prior to and after any mitigation measures are considered. In addition, relevant cumulative effects will be considered, taking together effects of other projects in the area, whether operational, consented or at application stage, along with the significance of any predicted effects associated with the Proposed Development.

7.2 Baseline Description

7.2.1 Baseline ecological conditions will be established from the following sources:

7.2.2 Information from the National Biodiversity Network (NBN) Atlas (National Biodiversity Network Atlas Scotland, 2022) and Highland Biological Recording Group (HBRG) on ecological records within 5 km of the Site within the last 15 years (since 2008);

- Information from the Carbon and Peatland Map 2016 (Scottish Government, 2016);
- A desk study to confirm the location and qualifying features of designated Sites within potential zones of influence of the Proposed Development (NatureScot, 2023); and
- Baseline ecology surveys, including an Extended Habitat Survey, National Vegetation Classification survey and protected species surveys for otter and badger.

7.2.3 There are two sites designated for ecological features within 10 km of the Proposed Development (**Figure 7.1**). None of these are within the Site boundary. The designated ecological sites within 10 km are as follows:

- Inner Hebrides and Miches Special Area of Conservation (SAC), within 0.1 km south of the site – Annex II species that are a primary reason for selection of this site: Harbour porpoise *Phocoena phocoena*; and
- Ascrib, Isay and Dunvegand SAC, approximately 7.5km north-west - Annex II species that are a primary reason for selection of this site: Harbour seal *Phoca vitulina.* The complex of skerries, islets, undisturbed mainland shores and offshore islands in north-west Skye consistently support a breeding colony of the Harbour seal. The site represents one of the larger discrete colonies of common seals in the UK, holding around 2% of the UK population.

7.2.4 There are no areas listed on the ancient woodland inventory within 4.9 km of the Site boundary.

7.2.5 An Extended Habitat Survey of the Site (including each option area) following the UK Habitat Classification system (UKHab) was completed on 28th September 2023. An otter (Lutra lutra) survey of the Site and within a 250 m buffer (where access was possible) was also carried out at the time of survey.

7.2.6 The key habitat types on the Site itself include lowland acid grassland, willow scrub, gorse scrub, bracken, an area of rush-dominated acid grassland, and maritime cliff and slopes.

7.2.7 Regarding protected species, evidence of otter feeding remains were identified. Survey limitations were presented due to poor weather and unsafe terrain adjacent to sea cliffs, so a full otter survey was not completed. Evidence of red deer was also recorded on site.

7.2.8 Further baseline information will be obtained from a suite of surveys to be completed in Spring 2024. The surveys to be conducted are summarised as follows:

- National Vegetation Classification (NVC) surveys, incorporating potential Ground Water Dependent Terrestrial Ecosystem (GWDTE) habitats within a 250 m buffer of the Site; and
- Protected species walkover surveys, including an update otter survey and badger survey in line with guidance.

7.3 Guidance & Legislation

7.3.1 The assessment will be undertaken in line with the following European and National Legislation:

- Environmental Impact Assessment Directive 85/337/EEC, as amended ("EIA Directive"), (as subsequently codified by Directive 2011/92/EU, and as amended by Directive 2014/52/EU);
- European Union Council Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (Habitats Directive);
- European Union Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy ("Water Framework Directive");
- Nature Conservation (Scotland) Act 2004 (as amended);
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) 'The Habitats Regulations');
- The Protection of Badgers Act 1992;
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011;
- The Wildlife and Countryside Act 1981 (as amended); and
- The Wildlife and Natural Environment (Scotland) Act 2011 (WANE).

7.3.2 The assessment will be carried out in accordance with the principles contained within the following guidance and policy documents:

- Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (version 1.1). Chartered Institute of Ecology and Environmental Management, Winchester;
- European Commission (2020) Guidance document on wind energy developments and EU nature legislation;
- JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) (2012) UK Post-2010 Biodiversity Framework. July 2012;
- Joint Nature Conservation Committee (JNCC) (2013) Guidelines for selection of biological Sites of Special Scientific Interest (SSSI);
- Skye & Lochalsh Biodiversity Group (2003). The Skye & Lochalsh Biodiversity Action 2003 –2014;
- Scottish Badgers (2018) Surveying for Badgers: Good Practice Guidelines. Version 1;
- Scottish Executive (2000) Nature conservation: implementation in Scotland of EC Directives on the conservation of natural habitats and of wild flora and fauna and the conservation of wild

birds ('The Habitats and Birds Directives'). Revised guidance updating Scottish Office Circular no. 6/1995;

- Scottish Environment Protection Agency (SEPA) (2017) Land Use Planning System Guidance Note 4 - Planning guidance on on-shore windfarm developments;
- SEPA (2017) Land Use Planning System Guidance Note 31 - Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems;
- Scottish Government (2001). European Protected Species, Development Sites and the Planning Systems: Interim guidance for local authorities on licensing arrangements;
- Scottish Government (2006). European Protected Species – terms of guidance: Chief Planner letter;
- Scottish Government (2013) Scottish Biodiversity Strategy: It's in Your Hands (2004)/2020 Challenge for Scotland's Biodiversity (2013);
- Scottish Government (2016) Draft Peatland and Energy Policy Statement;
- Scottish Government (2017) Planning Advice Note 1/2013 - Environmental Impact Assessment, Revision 1.0;
- Scottish Government (2017) Planning Circular 1/2017: Guidance on The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Scottish Government (2018) Climate Change Plan: Third Report on Policies and Proposals 2018-2032;
- Scottish Government (2020) Scottish biodiversity strategy post-2020: statement of intent;
- Scottish Government (2021) Freshwater and Diadromous fish and fisheries associated with onshore wind farm and transmission line developments: generic scoping guidelines;
- Scottish Government (2023) National Planning Framework 4;
- SNH (2015) Scotland's National Peatland Plan;
- SNH (2016a) Planning for Development: What to consider and include in deer assessments and management at development sites (Version 2);
- SNH (2016b) Planning for Development: What to consider and include in Habitat Management Plans. Version 2;
- SNH (2018a). Advising on carbon-rich soils, deep peat, and priority peatland habitat in development management;
- SNH (2018b) Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland; and
- Scottish Renewables, SNH, SEPA, Forestry Commission (Scotland), HES, AEECoW (2019) Good Practice During Windfarm Construction (4th Edition).

7.4 Proposed Scope of Assessment

Proposed Study Area

7.4.1 The EIA Report will incorporate the following study areas which will all be buffered from the finalised Site layout (and access tracks if relevant/required) in accordance with relevant guidance:

- designated sites: the Proposed Development and a 10 km Study area for international designations and 5 km Study Area for national and non-statutory designations;
- protected species: the Proposed Development and a 250 m Study Area;

- habitats and potential GWDTE: the Site and a 250 m Study Area; and
- cumulative assessment (if required): the Proposed Development and a 5 km Study Area.

Assessment Methodology

7.4.2 The EIA Report will include an Ecological Impact Assessment (EcIA). This will consider the potential direct, indirect, and cumulative effects that the construction and operation of the Proposed Development could have on Important Ecological Features (IEFs), as per CIEEM (2018) guidance. The assessment will be supported by appendices that will include details of survey methodologies and all survey data.

The assessment will include the following elements:

- baseline conditions;
- scoping in/out of ecological features and impacts;
- assessment of potential impacts and effects on IEFs during the construction and operational phases;
- cumulative effects;
- mitigation; and
- summary of significant residual effects.

7.4.3 Effects on IEFs will be assessed in relation to the species' reference population or habitat extent, conservation status, range, and distribution. The assessment of potential effects will be informed by guidelines published by CIEEM (2018) and NatureScot (see Section 7.3: Guidance and Legislation).

7.4.4 The assessment involves the following process:

- identifying potential impacts of the Proposed Development;
- considering the likelihood of occurrence of potential impacts;
- defining the nature conservation value (NCV) and conservation status of relevant populations for each IEF to determine overall sensitivity;
- establishing the magnitude of the likely impact (both spatial and temporal) on each IEF;
- based on the above information, making a judgement as to whether or not the consequent potential effect would be significant with respect to the EIA Regulations;
- if a potential effect is determined to be significant, measures to avoid or reduce the significance of effects are considered;
- considering opportunities for enhancement where appropriate; and
- concluding residual potential effects after considering mitigation, compensation, and enhancement.

7.4.5 An assessment of relevant cumulative effects will be undertaken following published guidance. Cumulative effects will be assessed with other similar projects subject to the EIA process within a relevant search area, and their effects on a relevant reference population; for example, at a watercourse, watershed, or Natural Heritage Zone (NHZ) level.

7.4.6 The Inner Hebrides and Minches SAC lies within 0.1 km of the Site boundary and so there is direct connectivity between this designation and the Site. As a result, likely significant effects from the Proposed Development are possible and so the project will be subject to a Habitats Regulations Appraisal (HRA) under The Habitats Regulations. This will however be covered under the Marine Ecology chapter.

Receptors and Impacts Scoped In or Out of Assessment

7.4.7 A summary of the features and effects to be considered, and the phases for which they are likely to be Scoped In or Scoped Out for, are presented in **Table 7-1.**

Table 7-1: Summary of Features and Impacts for Ecology

Features	Scoped In		Justification
	Construction	Operation	
Protected species (including otter)	Yes	Yes	Protected species cannot be Scoped Out until the ecological baseline surveys are complete and the presence and distribution of ecological features in relation to the planned infrastructure and activities associated with the Proposed Development are fully understood.
Habitats including those listed on Annex I of the Habitats Directive and Priority Habitats	Yes	Yes	Habitats on Annex I of the Habitats Directive and Priority Habitats cannot be Scoped Out until the ecological baseline surveys are complete and the presence and distribution of such habitats in relation to the planned infrastructure and activities associated with the Proposed Development are fully understood.
Wild deer population	Yes	No	The desk-based study will collate relevant information on the deer populations in the locality to inform whether this should be Scoped Out or assessed further in the EIA Report.
Designated sites	Yes	Yes	Connectivity exists between the Proposed Development and the Inner Hebrides and Minches SAC and so this will be assessed through HRA and scoped into the assessment. This will be covered within the marine ecology chapter.

7.5 Potential Mitigation

7.5.1 Significant adverse effects on ecological features will be avoided or minimised where possible within the design process. Good practice during construction and operation of the Proposed Development will be implemented as standard (and the assessment undertaken on this basis). This would include the following:

- A Species Protection Plan (SPP) would be implemented as part of a Construction Environmental Management Plan (CEMP) or similar during the construction phase to ensure that all reasonable precautions are taken to adhere to the relevant wildlife legislation;
- Pre- and during-construction surveys carried out by an Ecological Clerk of Works (ECoW), or suitably qualified ecologist would take place as part of the SPP, and an ECoW would be present during all key stages of the construction period; and
- A Biodiversity Management and Enhancement Plan (BMEP) would be developed for the operational phase and agreed with consultees, to mitigate or enhance habitat for IEFs, promote ecological connectivity and to provide wider significant biodiversity benefits.

7.5.2 Where unmitigated significant adverse effects on IEFs are identified, additional measures to prevent and reduce these impacts would be proposed, in order to conclude a non-significant residual impact.

7.6 Potential Impacts

7.6.1 The assessment will consider the potential effects associated with construction and operation of the Proposed Development.

7.6.2 Construction effects that will be considered include:

- Temporary and permanent habitat loss/alteration/fragmentation/drainage associated with the Proposed Development infrastructure;
- Pollution effects on watercourses within the Site;
- Loss of shelter, breeding, or foraging habitat for protected species;
- Displacement of deer;
- Risk of injury or death to protected species from collisions with increased construction traffic; and
- Visual and noise disturbance to protected species associated with construction activities.

Operational effects that will be considered include:

- Displacement of protected species from shelter, breeding or foraging habitats around operational port access and other permanent infrastructure, including barrier effects.

7.6.3 Where appropriate, these construction and operational effects will also be considered in a cumulative assessment.

7.7 Scoping Questions to Consultees

- Q7.1 - Do consultees agree that, subject to further information coming to light from the field surveys and desk study, the scope of IEFs to be included in the assessment is appropriate?
- Q7.2 - Do consultees agree that the suite of field surveys undertaken in 2023 and planned for 2024 in addition to a desk study are sufficient to inform a robust impact assessment?
- Q7.3 - Do consultees agree that the methodology and scope of assessment is appropriate?

8. Marine Ecology

8.1 Introduction

8.1.1 This chapter considers the potential effects of the construction and operation phases of the Proposed Development on Marine Ecology. Potential for effects on Marine Ecology receptors are identified, and the proposed methodologies for further assessment within the EIA Report are outlined.

8.1.2 For the purposes of this chapter, the following Marine Ecology receptor groups have been considered:

- Benthic Subtidal and Intertidal Habitats and Species.
- Fish and Shellfish.
- Marine Mammals.

The remainder of this chapter is structured to include:

- A list of legislation, policy, and guidance specific to the assessment of Marine Ecology effects.
- A definition of the Marine Ecology Scoping Study areas.
- The EIA methodology proposed to assess potential Marine Ecology effects, including proposed data sets and baseline surveys to be used to inform the topic-specific EIA Report chapter.
- A preliminary review of the baseline environment relevant to Marine Ecology receptors.
- A summary of impact receptor pathways that are proposed to be scoped out of the assessment.
- A summary of potential mitigation measures to be proposed to reduce the potential for effects relating to Marine Ecology.
- A summary of potential effects on Marine Ecology receptors that are proposed to be assessed in the EIA Report.
- Questions for stakeholders to consider in providing feedback on this chapter.

8.2 Guidance & Legislation

8.2.1 Legislation, policy, and guidance relevant to Marine Ecology are listed in **Table 8-1** with brief summaries of relevance to the assessment provided.

Table 8-1: Technical Guidance and Legislation Relevant to Marine Ecology

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
Policy and Legislation			
The Convention on the Conservation of Migratory Species of Wild Animals (the 'Bonn Convention')	Aims to conserve migratory species and their habitats by providing strict protection for endangered migratory species (Appendix I of the Convention) and lists migratory species which	United Nations, 1983. [Online]. Available at: https://www.cms.int/en/convention-text	International

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	benefit from multilateral agreements for conservation and management (Appendix II of the Convention). Potential effects on marine mammals and fish protected by the Convention will be considered in the EIA Report.		
The Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention')	Aims to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I, II and III of the Convention). Potential effects on marine mammals and fish protected by the Convention will be considered in the EIA Report.	Council of Europe, 1979. [Online]. Available at: https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treatynum=104	International
The OSPAR Convention	The Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention) will be implemented through OSPAR's North-East Atlantic Environment Strategy 2030. Annex V indicates a list of threatened and/or declining species and habitats which will be considered in the EIA Report, where required.	OSPAR, 1992. [Online]. Available at: https://www.ospar.org/site/assets/files/1290/ospar_convention.pdf	International
European Commission Directive 2009/147/EC (codified version of 79/409/EC) on the Conservation of Wild Birds (the 'Birds Directive') (2009)	The HRA Regulations list Annex I habitats and Annex II species. These habitats and species can be designated features of SACs. All cetaceans in Northern European waters are listed under Annex IV of the	European Commission, 2009 (BD); 1992 (HD)[Online]. Birds Directive available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147	Europe

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (known as the 'Habitats Directive') (1992)	Habitats Directive as European Protected Species (EPS) of community interest and in need of strict protection.	Habitats Directive available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01992L0043-20130701	
The Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations (the 'Habitat Regulations') 2019 which transpose the requirements of retained EU law (i.e. the 'Habitats Directive' and the 'Birds Directive') into UK law. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2017 implement the species protection requirements of the Habitats and Birds Directives offshore (more than 12 nautical miles from the coast).	Transpose the requirements of retained EU law (i.e. the 'Habitats Directive' and the 'Birds Directive') into Scottish law.	UK Government, 2019. [Online]. Available at: https://www.legislation.gov.uk/sdsi/2019/9780111041062	National (Scotland) National (UK) – Offshore Marine Conservation Regulations
EU Directive 2008/56/EC – Marine Strategy Framework Directive	Paragraph 3.7.10 in **Chapter 3** sets out the legislative framework for the MSFD. The MSFD sets out measures for Good Environmental Status (GES) in the marine environment.	European Union, 2008. [Online]. Available at: https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32008L0056	Europe
Council Regulation (EC) No 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel. (Amendment) (EU Exit) Regulations 2018	Establishes a framework for the protection and sustainable use of the stock of European eel.	Council Regulation (EC) No 1100/2007. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32007R1100	Europe

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
The European Biodiversity Strategy to 2030	Contains specific actions and commitments, such as a network of protected areas covering at least 30% of Europe's land and sea. The actions include restoring marine ecosystems and international ocean governance along with strict protection on existing Natura 2000 areas.	European Commission, 2020. [Online]. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52020DC0380	Europe
Marine and Coastal Access Act (2009)	Establishes provisions for the management and protection of the marine environment.	The Marine and Coastal Access Act 2009 (C. 23). [Online]. Available at: https://www.legislation.gov.uk/ukpga/2009/23/data.pdf	National (UK)
Wildlife and Countryside Act 1981 (as amended)	The act makes it an offence to intentionally (or recklessly) kill, injure or take any wild animal listed on Schedule 5 of the Act, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. All cetacean species are protected within the 12 nm territorial waters under Schedule 5 of the Wildlife and Countryside Act.	UK Government, 1981. [Online]. Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents	National (UK)
The UK Post-2010 Biodiversity Framework; the Biodiversity Strategy: Revised Implementation Plan (2018-2020) 2020 Challenge for Scotland's Biodiversity	The UK Post-2010 Biodiversity Framework and Biodiversity Strategy sets out priorities for the UK to meet the Convention on Biological Diversity's (CBD's) Strategic Plan for Biodiversity 2011-2020 and Aichi Biodiversity Targets. This has been	Joint Nature Conservation Committee (JNCC), 2018. [Online]. Available at: https://data.jncc.gov.uk/data/587024ff-864f-4d1d-a669-f38cb448abdc/UKBioFwk-RevisedImpPlan-Jun2018.pdf	National (UK)

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	superseded by the indicated strategies.	2020 Challenge for Scotland's Biodiversity available at: https://www.gov.scot/publications/2020-challenge-scotlands-biodiversity-strategy-conservation-enhancement-biodiversity-scotland/	
Nature Conservation (Scotland) Act 2004	Sets out a series of measures which are designed to conserve biodiversity and to protect and enhance the biological and geological natural heritage of Scotland.	Nature Conservation (Scotland) Act 2004. [Online]. Available at: https://www.legislation.gov.uk/asp/2004/6/data.pdf	National (Scotland)
Marine (Scotland) Act 2010	Provides a framework to balance competing demands on Scotland's marine environment. While protecting Scotland's seas, it also promotes economic investment and growth in sectors such as marine renewable energy. Introduces a duty to protect and enhance the marine environment.	The Marine (Scotland) Act 2010. [Online]. Available at: https://www.legislation.gov.uk/asp/2010/5/data.pdf	National (Scotland)
The Marine Works (Environmental Impact Assessment) (Scotland) Regulations (2017)	Establishes the requirement for EIA in relation to marine licensing in Scotland.	Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017. [Online]. Available at: https://www.legislation.gov.uk/ssi/2017/115/regulation/1/made	National (Scotland)
Scotland's National Marine Plan	Scotland's first national marine plan managing both inshore (out to 12 nm) and offshore (12 to 200 nm) waters that aims to promote the sustainable development of marine areas and sustainable use of marine	Marine Scotland, 2015. [Online]. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2015/03/scotlands-national-marine-plan/documents/004754	National (Scotland)

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	resources. This policy builds on implementing the Marine (Scotland) Act 2010. This policy does not specifically mention Marine Mammals; it does include a pledge to comply with legal requirements for protected areas and species (e.g. Marine Mammals).	66-pdf/00475466-pdf/govscot%3Adocument/00475466.pdf	
Scottish Biodiversity Strategy	This policy outlines Scottish Government's plans for conserving current and future biodiversity.	Scottish Government, 2023. [Online]. Available at: https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland-2/pages/2/	National (Scotland)
Scottish Priority Marine Features	The term Priority Marine Features relates to habitats and species in Scotland deemed to be conservation priorities.	Tyler-Walters *et al.*, 2016	National (Scotland)
Guidance			
UK Marine Policy Statement	Provides high-level policy context for the development of marine plans across the UK in order to achieve clean, health, safe, productive, and biologically diverse oceans, and seas.	UK Government, 2011. UK Marine Policy Statement. [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf.	National (UK)
Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects	This peer-reviewed publication provides information on functional hearing groups of marine mammals. Auditory thresholds are presented at which underwater noise levels can cause a temporary threshold shift (TTS) in hearing, meaning	Southall *et al.*, 2019	International

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	hearing is temporarily affected, or a permanent threshold shift (PTS), where hearing is permanently affected. These values are typically used in conjunction with underwater noise modelling to assess the effect on species at the individual and population level.		
JNCC guidelines for minimising the risk of injury to marine mammals from piling noise	This set of mitigation measures offers guidance on reducing risk of injury to marine mammals during pile driving. If followed, risk of injury is likely to be greatly reduced.	JNCC, 2017. [Online]. Available at: https://data.jncc.gov.uk/data/e2a46de5-43d4-43f0-b296-c62134397ce4/jncc-guidelines-seismicsurvey-aug2017-web.pdf	National (UK)
The protection of Marine European Protected Species from injury and disturbance: Guidance for Inshore Waters (July 2020 Version)	This advice and guidance relates to regulations prohibiting the deliberate and reckless capture, injury, killing, and disturbance of marine EPS, which include all cetacean species. Although seals are not EPS, the mitigation measures outlined can also be applied to reduce the risk of impacts to seals (and other marine species).	Marine Scotland, 2020. [Online]. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2020/07/marine-european-protected-species-protection-from-injury-and-disturbance/documents/marine-european-protected-species-guidance-july-2020/marine-european-protected-species-guidance-july-2020/govscot%3Adocument/EPS%2Bguidance%2BJuly%2B2020.pdf	National (Scotland)
Guidance on the Offence of Harassment at Seal Haul-out Sites	Section 117 of Marine Scotland Act 2010 makes it an offence to intentionally harass seals at haul-out sites in Scotland. The document provides guidance as to	Marine Scotland, 2014. [Online]. Available at: https://consult.gov.scot/marine-environment/possible-designation-of-a-seal-haul-out-	National (Scotland)

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	what this may entail and advises on what appropriate actions should be taken if harassment is reported. This guidance assists with the licensing process in relation to harassment and provides advice on how to behave responsibly around haul-out sites.	site/user_uploads/guidance-on-the-offence-of-harassment-at-seal-haul-out-sites.pdf-1#:~:text=In%20order%20to%20behave%20responsibly,the%20location%20and%20the%20time	
Scottish Marine Wildlife Watching Code	These guidelines provide advice for leisure and commercial activities associated with wildlife watching. They include information detailing activities likely to disturb wildlife, how to safely approach them and how to view with minimum disturbance. This code provides guidance for marine users to reduce the disturbance on marine life, including marine mammals.	SNH, 2017. [Online]. Available at: https://www.nature.scot/sites/default/files/2017-06/Publication%202017%20-%20The%20Scottish%20Marine%20Wildlife%20Watching%20Code%20SMWWC%20-%20Part%201%20-%20April%202017%20%28A2263518%29.pdf	National (Scotland)

8.3 Proposed Scope of Assessment

Proposed Study Area

Benthic Subtidal and Intertidal Habitats and Species

8.3.1 For the purposes of the Marine Ecology EIA Scoping Report chapter, the Benthic Subtidal and Intertidal Ecology study area is defined as the area encompassing the intertidal and subtidal elements of the Proposed Development in addition to a precautionary 15 km buffer (**Figure 8.1**). For the purposes of the EIA Report, the Benthic Subtidal and Intertidal Ecology study area will be informed following results of coastal processes modelling (and will be delineated as one tidal excursion from the Proposed Development which is considered to be the maximum extent to which sediment transport impacts could occur).

Fish and Shellfish

8.3.2 The Fish and Shellfish Ecology EIA Scoping Study Area comprises ICES Statistical Rectangle 43E3 (the ICES Rectangle which contains the Proposed Development) (**Figure 8.1**). This ICES Rectangle encompasses an 'Isle of Skye to Rum Study Area' (for the purposes of characterising highly mobile and migratory fish species) and is anticipated to cover areas potentially affected by changes in coastal processes (to be informed by coastal processes modelling) and increases in levels of underwater noise and vibration (to be informed by underwater noise modelling).

Marine Mammals

8.3.3 The EIA Scoping Study Area for the marine mammal assessment has been determined based on appropriate Management Units (MUs) for marine mammals and ecology, behaviour, abundance and distribution of species will be considered (**Figure 8.2**). For cetacean species, the EIA Scoping Study Area is determined by MUs presented in IAMMWG (2023). For grey and harbour seals, the EIA Scoping Study Area is defined by Seal Management Areas (SMAs) presented in SCOS (2021).

Assessment Methodology

Site Specific Surveys

8.3.4 To provide data to supplement the Site characterisation data provided above, site-specific surveys have been conducted.

8.3.5 The requirements and approach to site-specific surveys conducted to inform the EIA Report are detailed in **Table 8-2.**

Table 8-2: Summary of Site-Specific Baseline Surveys to Inform Marine Ecology

Data Required	Survey Method	Approach Summary
Site-specific subtidal benthic data	Drop Down Video (DDV) surveys	A subtidal benthic survey was conducted between 3 October 2023 and 5 October 2023 using a DDV camera system to provide habitat/biotope extent data and species data. An approach deploying underwater video was required due the hard substrates present across the subtidal zone.
Site-specific intertidal benthic data	Intertidal Phase I and Phase II surveys	Intertidal Phase I and Phase II surveys were conducted between 1 October 2023 and 2 October 2023. Phase I surveying was conducted to map the distribution and extent of intertidal habitats at a broad scale. For the Phase II survey, quantitative quadrats were deployed at selected sites to quantify species present.

8.3.6 No site-specific surveys for fish and shellfish, and marine mammals have been proposed. It is considered that a desk-based assessment is sufficient to provide a robust baseline characterisation of the Fish and Shellfish Study Area, due to the presence of pre-existing fish and shellfish data for the area (e.g. Lynam and Ribeiro, 2022; MMO, 2023). The highly mobile and seasonal nature of many fish species (which have already been identified as present) reduces the value of any additional localised survey. The site-specific benthic surveys will however provide useful information on the habitats within the area of the Proposed Development and will therefore further inform fish and shellfish species data sets.

8.3.7 Similarly, it is considered that a desk-based assessment is sufficient for providing a robust baseline characterisation of the Marine Mammal Study Area due to the existence of marine mammal survey datasets covering the region, which is adequate to effectively inform the assessment (HWDT, 2018; Gilles et al., 2023).

Ecological Impact Assessment

8.3.8 The Marine Ecology assessment will be based on consideration of the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines for Environmental Impact Assessment (EIA) (CIEEM, 2018).

8.3.9 The assessment approach will be based on the conceptual 'source-pathway-receptor' model. This model identifies likely environmental effects resulting from the proposed construction and operation of the Proposed Development. This process provides an easy-to-follow assessment route between effect sources and potentially sensitive receptors ensuring a transparent impact assessment. The parameters of this model are defined as follows:

- Source: the origin of a potential effect (noting that one source may have several impact pathways and associated receptors); e.g. a construction activity;
- Pathway: the link or interaction 'pathway' by which the effect of the activity could influence a receptor; and
- Receptor: the element of the receiving environment that is affected.

8.3.10 Iterative steps involved in the assessment approach will include:

- Determination of potential interactions between the Proposed Development and ecological receptors (for construction and operational phases);
- Definition of aquatic environment within the influence of the Proposed Development;
- Assessment of the value and sensitivity of ecological receptors;
- Assessment of the magnitude of impact;
- Assessment of the significance of effects;
- Proposal of mitigation measures to reduce, prevent or where these are not possible, to offset, any adverse significant effects; and
- Assessment of the residual effects after any mitigation measures have been considered; and
- Assessment of cumulative effects.

8.3.11 In some instances the Proposed Development will retain flexibility in terms of the options for methods and approaches to be applied during the construction phase. Where this is the case, for each combination of effect and receptor, the assessment will be based on the worst-case scenario and where this approach has been taken it will be clearly indicated in the EIA Chapter together with a definition of the worst-case scenario for the specific assessment.

Assessment Criteria

8.3.12 Terminology used in this assessment, will be based on consideration of activities with associated impacts (and impact pathways). It will then assess whether these impacts could have potential effects on habitats/species. A number of aspects will be considered when assessing potential impacts/effects including:

- Nature of effect on habitat/species i.e. beneficial / adverse; direct / indirect.
- Extent of the impact (geographical area e.g. site-wide, local, district, regional, and the size of the population affected).
- Likelihood of effect occurring.
- Value of receptor.
- Sensitivity of receptor.
- Magnitude of impact.
- Duration - temporary or permanent effect. If the effect occurs on all of, or a proportion of, a community/population on a continual basis, or the effect has the potential to always occur due to the Proposed Development even if it is not continual, it can be considered to be permanent (e.g. a continual or intermittent discharge). If it is not on a continual basis or it is known the effect will cease at some point when considering the community / assemblage / population or habitat level it can be described as temporary (e.g. piling during construction).

- Timing and frequency of impacts in relation to key potential periods of increased sensitivity e.g. migration periods for diadromous fish species.

8.3.13 The value and sensitivity of each receptor will be determined based on consideration of factors outlined in **Table 8-4** and **Table 8-5** and the magnitude of the potential impact will be based on the criteria set out in **Table 8-6**. Based on the value/sensitivity of the receptor and the predicted magnitude of the potential impact, the significance of effect will then be determined as indicated in **Table 8-7**. Further details are provided below.

Likelihood

8.3.14 Likelihood will be considered based on criteria in **Table 8-3.**

Table 8-3: Likelihood of Effect Occurring and Confidence in Assessment

Likelihood	Probability	Definition
Certain	Probability estimated at 95% chance or higher.	Based on consideration of same pressures arising from similar activities, acting on the same type of receptor in comparable areas (i.e. UK). Previous studies indicate consistent magnitude of impact. Scientific evidence and/or construction information is detailed/ extensive.
Likely	Probability estimated above 50% but below 95%	Based on consideration of same pressures arising from similar activities, acting on the same type of receptor in comparable areas (i.e. UK) or similar pressures on receptor/similar receptor in other areas (i.e. outside UK). Previous studies indicate a possible range of magnitude of impact. There may be some limitations to scientific evidence base and/or construction information partially reducing certainty of assessment.
Unlikely	Probability estimated above 5% but less than 50%	Based on consideration of same pressures arising from similar activities, acting on the same type of receptor in comparable areas (i.e. UK) or similar pressures on the receptor / similar receptor in other areas (i.e. outside UK). Previous studies do not indicate consistent effect or range of magnitude.
Extremely unlikely	Probability estimated at less than 5%	Based on consideration of same pressures arising from similar activities, acting on the same type of receptor in comparable areas (i.e. UK) or based on similar pressures on the receptor /similar receptor in other areas (i.e. outside UK). There may be few if any previous studies to indicate any effect on the sensitive receptor.

Value and Sensitivity

8.3.15 It should be noted that high value and high sensitivity are not necessarily linked within a particular impact. A receptor could be of high value (e.g. an interest feature of a Special Area of Conservation (SAC)) but have a low or negligible physical/ecological sensitivity to an impact and vice versa.

8.3.16 Sensitivity will be considered as required when assessing effects and information relating to sensitivity of receptors to impacts will be clearly indicated in the assessment narrative where appropriate. Value will be considered based on criteria**Error! Reference source not found.** and sensitivity in **Table 8-5.**

Table 8-4: Value Criteria for Marine Ecology Assessment

Value	Definition
Very High	➢ An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site etc.) or an area which the country agency has determined meets the published selection criteria for such designation, irrespective of whether or not it has yet been notified. ➢ Internationally significant and viable areas of a habitat type listed in Annex I of the Habitats Directive or species on Annex II of the Habitats Directive. ➢ Globally threatened species (i.e. Critically endangered or endangered on IUCN Red list) or species listed on Annex 1 of the Berne Convention. ➢ Regularly occurring populations of internationally important species that are rare or threatened in the UK or of uncertain conservation status. ➢ A regularly occurring, nationally significant population/number of any internationally important species. ➢ Habitat/species highly regarded for their important biodiversity, social/community value and / or economic value.
High	➢ A nationally designated site (Marine Protected Area, MPA) or a discrete area, which the country conservation agency has determined meets the published selection criteria for national designation (e.g. SSSI selection guidelines) irrespective of whether or not it has yet been notified. ➢ Regularly occurring, globally threatened species (i.e. Vulnerable or lower on IUCN Red list) or species listed on Annex 1 of the Berne Convention. ➢ Scottish Priority Marine Features. ➢ Habitat/species which have important biodiversity, social/community value and / or economic value.
Medium	➢ Significant populations of a regionally/county important species. ➢ Habitat/species possess moderate biodiversity, social / community value and / or economic value.
Low	➢ Species are abundant, common, or widely distributed. ➢ Habitat/species have low biodiversity, social/community value and / or economic value.

Table 8-5: Sensitivity Criteria for Marine Ecology Assessment

Sensitivity	Definition
Very High	➢ Species/habitats are highly sensitive to changing environments. ➢ Species/habitats are not able to recover or adapt.
High	➢ Species/habitats are highly sensitive to changing environments. ➢ Species/habitats may have a very low capacity to tolerate the impact with little or slow recovery.
Medium	➢ Species/habitats are sensitive to changing environments.

Sensitivity	Definition
	➢ Species/habitats may have good capacity to tolerate or recover from the impact.
Low	➢ Species/habitats are generally adaptable to changing environments. ➢ Species/habitats indicate tolerance of the impact or recover quickly from the impact.
Negligible	➢ Species are highly tolerant of the effect.

Magnitude

8.3.17 Magnitude of impact will be assessed taking into account aspects/features designed into the Proposed Development to avoid or minimise environmental effects (i.e., embedded mitigation). Guidelines to assign the magnitude of impact are provided in **Table 8-6**.

Table 8-6: Magnitude Criteria for Marine Ecology Assessment

Magnitude	Definition
Major	Effect due to an impact causes extensive changes to all or a large proportion of the habitat at a regional level or greater resulting in loss of function of the habitat. Effects extend beyond the Proposed Development and are not reversible through natural processes (permanent effect) or are not reversible for several generations (long-term effect). Effect causes a change to all or a large proportion of the population at a regional level or greater resulting in a decline in the abundance of the population, or other trophic levels, that will not be reversed through natural recruitment for several generations.
Moderate	Effect causes a change to all or part of the habitat within the local area, but does not result in long term effects on the function of the habitat. Effect causes a substantial change in abundance of a species, affecting a population or portion of a population that may last for two to ten generations (medium term), but does not result in long term effects on the population itself or other trophic levels.
Minor	Effect causes a change to a small, localised section of habitat within the local area, which is outside the range of natural variation, resulting in no loss of function of the habitat. Effect can be short-term to long-term. Effect causes a change to a small group of localised individuals of a population outside the range of natural variation but does not affect the viability of the population or other trophic levels. Effect can be either for a short period of time (up to two generations) or medium to long term (>two generations).
Negligible	Effects on the habitat/population are undetectable or within the range of natural variation.
No Change	The activity will have no interaction with the receptor.

Effect Significance

8.3.18 For the purposes of assessment and in line with common practice, only effects that are of moderate or major significance will be considered to represent those with the potential to be 'significant' in EIA terms. The overall significance of an effect will be determined using the matrix below (**Table 8-7**).

Table 8-7: Matrix to Guide Determination of Effect Significance

Sensitivity / Value	Magnitude of Impact				
	Major	Moderate	Minor	Negligible	No Change
Very High	Major	Major	Moderate or Major	Negligible or Minor	No effect
High	Major	Moderate or Major	Minor or Moderate	Negligible or Minor	No effect
Medium	Moderate or Major	Minor or Moderate	Minor	Negligible or Minor	No effect
Low	Minor or Moderate	Minor	Negligible or Minor	Negligible	No effect
Negligible	Minor	Negligible or Minor	Negligible	Negligible	No effect

Mitigation Measures

8.3.19 The significance of effect will be determined after consideration of embedded mitigation. For any effects considered to be of moderate or higher significance, further mitigation/enhancement measures (beyond embedded measures) are proposed to reduce the significance of effect to minor or lower.

Residual Effects

8.3.20 Residual effects on marine ecological receptors (i.e. effects following implementation of specific mitigation measures) will then be identified and their significance determined.

8.4 Baseline Description

8.4.1 To inform this EIA Scoping Report chapter, a high-level desk-based assessment has been conducted for Marine Ecology receptors using a range of existing ecological data (**Table 8-8**).

Table 8-8: Key Sources of Marine Ecology Data

Source	Summary	Receptors	Coverage of Study Area
European Marine Observation and Data Network (EMODnet)	Benthic habitat classification map.	Benthic Subtidal and Intertidal Habitats and Species	Full
National Biodiversity Network (NBN) Atlas	Occurrence data for benthic species (excluding entries not licensed for commercial use).	Benthic Subtidal and Intertidal Habitats and Species	Full
Cefas Open Science OneBenthic Portal	Modelled assemblages of benthic species – faunal clusters.	Benthic Subtidal and Intertidal Habitats and Species	Full
Marine Scotland National Marine Plan interactive (NMPi)	Interactive map showing various habitat and species layers around Scotland.	Benthic Subtidal and Intertidal Habitats and Species	Full

Source	Summary	Receptors	Coverage of Study Area
Dipper and Johnston, 2005	Marine nature conservation review of sea lochs in north-west Scotland.	Benthic Subtidal and Intertidal Habitats and Species	Full
Marine Management Organisation (MMO), 2023	Landings from UK registered fishing vessels by International Council for the Exploration of the Sea (ICES) statical rectangle.	Fish and Shellfish	Full
Marine Scotland Scottish Sea Fisheries Statistics	Landings (quantity and value) by UK vessels into the UK and abroad, and foreign vessels into the UK by ICES rectangle and species.	Fish and Shellfish	Full
Lynam and Ribeiro, 2022	Collated data set for scientific beam and otter trawls conducted across the UK and selected European countries.	Fish and Shellfish	Full
The national electrofishing programme for Scotland (NEPS) Malcolm *et al*., 2020, 2023	Results from NEPS.	Fish and Shellfish (freshwater data set but provides information for migratory species including Atlantic salmon and sea trout)	Full
Ellis *et al*., 2012	Maps of Spawning and nursery grounds for selected fish species in the UK.	Fish	Full
Southall *et al*., 2005	Distribution of basking shark derived from satellite tag locations, surveys, and public sightings.	Fish (Basking shark)	Full
Coull *et al*., 1998	Maps of Spawning and nursery grounds for selected fish species in the UK.	Fish	Full

Source	Summary	Receptors	Coverage of Study Area
Gilles *et al.*, 2023	Estimates of cetacean abundance in European Atlantic waters in summer 2022 from the Small Cetaceans in European Atlantic Waters and the North Sea (SCANS)-IV aerial and shipboard surveys. Aerial- and boat-based surveys were conducted in 2022 to provide large-scale estimates of small cetacean abundance in European Atlantic waters.	Marine Mammals	Full
Inter-Agency Marine Mammal Working Group (IAMMWG), 2023	Marine Mammal Management Units (MUs) in UK waters. This report details abundance estimates for species and their MUs for the seven most common cetacean species in UK waters.	Marine Mammals	Full
Hebridean Whale and Dolphin Trust, 2023	Hebridean Whale and Dolphin Trust Whale Track Sightings Map. Collation and presentation of cetacean sightings from citizen scientists across the west coast of Scotland.	Marine Mammals	Full
Lacey *et al.,* 2022	Modelled density surfaces of cetaceans in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys.	Marine Mammals	Full
Carter *et al.,* 2020; 2022	Habitat-based predictions of at sea distribution for grey and harbour seals in the British Isles.	Marine Mammals	Full

Source	Summary	Receptors	Coverage of Study Area
Hammond *et al.,* 2021	Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys.	Marine Mammals	Full
Special Committee on Seals (SCOS), 2021	Scientific Advice on Matters Related to the Management of Seal Populations.	Marine Mammals	Full
Hague *et al.,* 2020	Regional baselines for marine mammal knowledge across the North Sea and Atlantic areas of Scottish waters.	Marine Mammals	Full
Hebridean Whale and Dolphin Trust, 2018	Hebridean Marine Mammal Atlas.	Marine Mammals	Full
Russell *et al.,* 2017	Estimated at-sea distribution of grey and harbour seals.	Marine Mammals	Full
Paxton *et al.,* 2016	Revised Phase III data analysis of joint cetacean protocol data resources.	Marine Mammals	Full
Reid *et al.,* 2003	Atlas of cetacean distribution on north-west European waters.	Marine Mammals	Full

8.4.2 Where access to available data for Marine Ecology receptors is limited, data requests have been identified for inclusion in the EIA Report. The key proposed Marine Ecology data requests are focussed on benthic ecology and are indicated in **Table 8-9**.

Table 8-9: Key Sources of Marine Ecology Data Requests

Source	Summary	Receptors	Coverage
Marine Directorate	Benthic data from intertidal and subtidal surveys	Benthic Subtidal and Intertidal Habitats and Species	Benthic subtidal and intertidal Study Area.
NatureScot			
SEPA			

Benthic Subtidal and Intertidal Habitats and Species

Intertidal Benthic Ecology

8.4.3 The shoreline of Loch Bracadale is composed primarily of igneous rock with characteristic features such as crevices, platforms, and gullies. The wave-exposed upper shore is dominated by yellow and grey lichens with rockpools, and gullies characterised by molluscs such as small periwinkle Melarhaphe neritoides. The mid to low shore is dominated by channel wrack Pelvetia canaliculata, spiral wrack Fucus spiralis and the acorn barnacle Semibalanus balanoides with patches of blue mussel Mytilus edulis and common limpet Patella vulgata. Toward the lower, littoral edge, kelp species such as oarweed Laminaria digitata are found, often with encrusting coralline algae creating an algal turf beneath (Dipper and Johnston, 2005).

8.4.4 Littoral sediments are associated with sparse biota. Green algae such as Ulva sp. often dominate and infaunal assemblages mainly consist of common species such as the common cockle Cerastoderma edule and lugworm Arenicola marina. Mud snails such as Peringia ulvae and other Littorinidae spp. are also present (Dipper and Johnston, 2005).

Subtidal Benthic Ecology

8.4.5 As described in in EUSeaMap 2021 (EMODnet, 2019), the broad-scale subtidal benthic habitats predominately consist of either moderate energy Atlantic infralittoral seabed and Atlantic infralittoral rock, with patches of Atlantic circalittoral rock throughout the wider extent of Loch Bracadale.

8.4.6 Boulders and bedrock extend from the nearshore down into the sublittoral, often to depths of 20 m. Kelp can be found in the more sheltered areas of the infralittoral, with species including L. digitata and sugar kelp Saccharina latissima. Further to the south of Loch Bracadale, in the inner lochs of Harport and Vatten, S. latissima is associated with foliose algal species (Dipper and Johnston, 2005).

8.4.7 Exposed areas of Loch Bracadale and surrounding lochs support sparser kelp communities typically dominated by tangle Laminaria hyperborea and commonly associated with the edible sea urchin Echinus esculentus. In the outer areas of Loch Bracadale, vertical rocks support dead man's fingers Alcyonium digitatum and anemones such as the dahlia anemone Urticina felina. Below kelp canopies, down to roughly 18 m, the rock is dominated mainly by the black brittlestar Ophiocomina nigra. Maerl beds can be found on shell-gravel around the base of bedrock pinnacles as well as in the east of Loch Bracadale, to the north and to the west of Skula Skerry (Dipper and Johnston, 2005).

8.4.8 At the mouth of Loch Caroy, the sea gherkin *Pawsonia saxicola* as well as crustaceans including edible crab *Cancer pagurus* and squat lobster *Munida rugosa* are abundant beneath boulders and on upper rock surfaces. Rocky areas give way to areas of muddy sediment as you move into deeper water which support the slender sea pen *Virgularia mirabilis* (Dipper and Johnston, 2005).

8.4.9 Below 20 m and in the much more sheltered regions of Loch Bracadale, muddy sand dominates with infaunal communities comprised mainly of polychaetes such as the parchment worm *Chaetopterus variopedatus* and sand mason worm *Lanice conchilega* (Dipper and Johnston, 2005).

8.4.10 Records from the NBN Atlas from within the study area collected between 2013 and 2023 indicated a total of 742 individuals across 223 taxa within the benthic subtidal and intertidal study area (NBN Trust, 2023). Records indicated an epifaunal community rich in echinoderms and cnidarians, with four species from each of these two taxonomic groups within the top 10 recorded species (**Table 8-10**).

Table 8-10: Top 10 Benthic Species from NBN Atlas Species Occurrence Data

Taxa	Common Name	Taxonomic Group	Count
Asterias rubens	Common starfish	Echinodermata	26
Cirripedia	Barnacles	Crustacea	24

Taxa	Common Name	Taxonomic Group	Count
Echinus esculentus	Edible sea urchin	Echinodermata	19
Alcyonium digitatum	Dead man's fingers	Cnidaria	16
Urticina felina	Dahlia anemone	Cnidaria	16
Actinia equina	Beadlet anemone	Cnidaria	15
Marthasterias glacialis	Spiny starfish	Echinodermata	14
Antedon bifida	Rosy feather star	Echinodermata	13
Cancer pagurus	Edible crab	Crustacea	12
Necora puber	Velvet swimming crab	Crustacea	12
Cylista elegans	Elegant sea anemone	Cnidaria	10
Limacia clavigera	Orange-clubbed sea slug	Mollusca	9
Total			**186**

8.4.11 OneBenthic indicated that faunal cluster groups (biotopes) were characterised by cluster group D2c within Loch Caroy, whilst the central area of Loch Bracadale was more commonly characterised by the C1b faunal cluster (**Table** 8-11**)**. Towards the mouth of the Loch Bracadale benthic communities were characterised by cluster group D2c and the beyond the mouth of Loch Bracadale communities were characterised by cluster groups D2a and D2b (OneBenthic, 2020), (**Table** 8-11).

Table 8-11: Characterising Taxa for Faunal Cluster Groups Identified Within the Benthic Subtidal and Intertidal Study Area and Surrounding area (Cooper and Barry, 2017).

Faunal Cluster	Characterising Taxa
D2c	Nephytidae (P), Spionidae (P), Opheliidae (P)
C1b	Spionidae (P), Capitellidae (P), Terebellidae (P), Nemertea (N), Lumbrineridae (P), Cirratulidae (P), Glyceridae (P), Ampeliscidae (A), Phyllodocidae (P), Polynoidae (P), Scalibregmatidae (P), Pholoidae (P), Serpulidae (P)
D2a	Spionidae (P), Glyceridae (P), Nemertea (N), Terebellidae (P), Capitellidae (P), Phyllodocidae (P)
D2b	Spionidae (P), Amphiuridae (E), Nephtyidae (P), Lumbrineridae (P), Oweniidae (P), Cirratulidae (P), Capitellidae (P), Nemertea (N), Semelidae (BM), Ampharetidae (P)
(A) = Amphipod crustacean, (BM) = Bivalve Mollusc, (E) = Echinoderm, (P) = Polychaete, (N) = Nemertean	

Priority Marine Features

8.4.12 Priority Marine Features (PMFs) are features considered to be of conservation importance in the Scottish marine environment. A list of 81 PMFs was compiled by Scottish Natural Heritage (SNH) (now NatureScot), Marine Scotland and the Joint Nature Conservation Committee (JNCC) in 2014 with the aim of helping the successful delivery of Scotland's marine nature conservation goals.

8.4.13 'Blue mussel beds' is a PMF, and beds are present to the south-east of Loch Caroy. The PMF ocean quahog Arctica islandica can be found throughout Loch Bracadale and up into Loch Caroy. The PMF Spiny lobster Palinurus elephas can be found to the south of Loch Bracadale, with multiple records present around the northern edge at the mouth of the loch (NatureScot, 2023).

8.4.14 In Loch Vatten, adjacent to Loch Caroy beyond Harlosh, small patches of the PMF seagrass beds have been recorded. The PMFs 'Maerl' as well as 'Maerl or coarse shell gravel with burrowing sea cucumbers' have been recorded in Loch Bracadale but have not been recorded in Loch Caroy (NatureScot, 2023). Maerl is also an OSPAR threatened or declining habitat and is present on the Scottish Biodiversity List which lists animals, plants, and habitats of primary importance for biodiversity conservation in Scotland.

8.4.15 A total of 11 MPAs in Scotland are designated to protect maerl, and the closest of these to the Benthic Subtidal and Intertidal Study Area is Loch nam Madadh SAC which is approximately 28 km from the Study Area (NatureScot, 2023).

Annex I Habitat

8.4.16 Several areas of Annex I habitat under the Habitats Directive have been recorded throughout Loch Bracadale and into Loch Caroy. The most extensively recorded are 'Kelp beds' and 'Kelp and seaweed communities on sublittoral sediment' (Marine Scotland, 2023a). Areas of 'Mudflats and sandflats not covered by seawater all the time' are also present, primarily in Loch Vatten to the west of Loch Caroy (Marine Scotland, 2023a).

Designated Sites

8.4.17 The Proposed Development overlaps with the Inner Hebrides and the Minches Special Area of Conservation (SAC). However, the SAC is not designated for benthic features. The closest designated sites for benthic features are the Sound of Arisaig (Loch Ailort to Loch Ceann Traigh) SAC and East Mingulay SAC which are located approximately 71 and 77 km from the Proposed Development, respectively.

Fish and Shellfish

Marine Finfish

8.4.18 North-east Atlantic groundfish data (Lynam and Ribeiro, 2022) from scientific trawl surveys provide catch information from otter trawls conducted within the Fish and Shellfish Ecology EIA Scoping Study Area (Section 0) from 1988 to 2020. Within the Study Area, herring Clupea harengus, hake Merluccius merluccius, whiting Merlangius merlangus, haddock Melanogrammus aeglefinus and sprat Sprattus sprattus were identified as being particularly abundant during otter trawls in 2020. Other species noted included Norway pout Trisopterus esmarkii, anglerfish Lophius piscatorius, mackerel Scomber scombrus, blue whiting Micromesistius poutassou and Atlantic cod Gadus morhua. The species Atlantic cod, blue whiting, mackerel, anglerfish, Norway pout, whiting and herring are all listed as PMFs by the Scottish Government. Other PMF fish species identified within the Fish and Shellfish Ecology EIA Scoping Study Area include ling Molva molva, saithe Pollachius virens and horse mackerel Trachurus trachurus (Lynam and Ribeiro, 2022).

8.4.19 Fish species of commercial importance landed from within the Fish and Shellfish Ecology EIA Scoping Study Area from 2014 to 2020 included anglerfish, haddock, witch Glyptocephalus cynoglossus, cod and whiting (MMO, 2023; Marine Scotland, 2023b). Additionally, wrasse are commercially important within the study area (likely for use as cleaner wrasse in the aquaculture industry), with

species caught including ballan wrasse Labrus bergylta, goldsinny wrasse Ctenolabrus rupestris, rock cook Centrolabrus exoletus and corkwing wrasse Symphodus melops (MMO, 2023; Marine Scotland, 2023b).

Elasmobranchs

8.4.20 Elasmobranchs include sharks, rays and skates and many species are included on the OSPAR List of Threatened and/or Declining Species and Habitats and the International Union for the Conservation of Nature (IUCN) Red List. Skates and rays present in the study area include thornback ray Raja clavata, spotted ray Raja montagui, blonde ray Raja brachyura, common skate Dipturus sp. and cuckoo ray Leucoraja naevus, with otter trawls conducted in 2020 being dominated by thornback ray (Lynam and Ribeiro, 2022).

8.4.21 Several shark species are also known to be present within the Fish and Shellfish Ecology EIA Scoping Study Area (Section 0) including spurdog Squalus acanthias, tope shark Galeorhinus galeus, basking shark Cetorhinus maximus, sawtail catsharks Galeus sp. and small-spotted catshark Scyliorhinus canicula (Southall et al., 2005; Bloomfield & Solandt, 2006; Witt et al., 2014; Lynam & Ribeiro, 2022).

8.4.22 The common skate complex, including flapper *Dipturus intermedius* and/or blue skate *Dipturus batis*, has been recorded within the Fish and Shellfish Ecology EIA Scoping Study Area during otter trawls conducted between 2011 and 2020 (Lynam and Ribeiro, 2022). Common and flapper skate are both currently listed as Critically Endangered on the IUCN Red List and are listed as PMF species. Spurdog are listed as Vulnerable on the IUCN red list and are listed as a PMF species.

8.4.23 Basking sharks are highly mobile species and undertake extensive migrations of up to 3,400 km to exploit areas of high productivity, with basking sharks in the UK either exploiting areas of the UK throughout the whole year or migrating to other coastlines, such as north Africa and continental Europe (Sims et al., 2003; Doherty et al., 2017). Satellite tagging and public sightings have identified basking sharks within and around the Fish and Shellfish Ecology EIA Scoping Study Area (Southall et al., 2005; Bloomfield & Solandt, 2006; Witt et al., 2014). Basking shark is listed on the OSPAR list of threatened/declining species (OSPAR Commission, 2021), on the IUCN Red List as globally endangered (Rigby et al., 2021), protected under the Wildlife Act 1976 (as amended in 2022) and listed as a PMF species. In addition, as a highly migratory species, basking shark is protected under various international conventions including the Convention on the Conservation of Migratory Species (CMS) (Bonn Convention) and the United Nations Convention of the Law of the Sea (UNCLOS).

Diadromous Fish

8.4.24 Diadromous fish species are those that migrate between marine and riverine environments throughout their life cycles and include species such as Atlantic salmon Salmo salar, sea trout Salmo trutta and European eel Anguilla anguilla. Salmon and sea trout are present within the Fish and Shellfish Ecology EIA Scoping Study Area, with records of salmon occurring 1.5 km away from the Proposed Development at the mouth of the River Ose (Malcolm et al., 2010; 2020; 2023). European eel are widespread across the mainland and islands of west Scotland and are likely to occur within the Fish and Shellfish Ecology EIA Scoping Study Area. The marine life stages of salmon, sea trout and European eel are all listed as PMFs. Additionally, European eel is listed as Critically Endangered on the IUCN red list. Salmon, sea trout and eel are unlikely to be permanent residents within the Fish and Shellfish Ecology EIA Scoping Study Area, however, they may transition through the area as part of migratory pathways.

Shellfish

8.4.25 Commercially valuable shellfish species within the study area that will be considered are squid (various species), razor clam (Ensis sp.), velvet swimming crabs Necora puber, lobster Homarus gammurus, scallops Pecten maximus, brown crab Cancer pagurus and Norway lobster Nephrops norvegicus (MMO, 2023; Marine Scotland, 2023b). Otter trawls conducted within the Fish and Shellfish Ecology EIA Scoping Study Area between 2011 and 2020 identified brown crab, squid (Alloteuthis subulata and Loligo forbesii) and Nephrops (Lynam and Ribeiro, 2022).

8.4.26 The Proposed Development overlaps with Loch Caroy Designated Shellfish Water Protected Area (SWPA) (see **Figure 13-2**) and the Fish and Shellfish Ecology EIA Scoping Study Area overlaps with Loch Harport SWPA (SEPA, 2023c). Loch Harport is designated as a production area for Pacific oysters Crassostrea gigas (Cefas, 2011; SEPA, 2023c).

Spawning and Nursery Grounds

8.4.27 The Proposed Development overlaps with spawning and nursery grounds for sand eel, Nephrops and sprat (Coull et al., 1998; Ellis et al., 2012). Additionally, the Proposed Development overlaps with nursery grounds for anglerfish, Atlantic cod, common skate, hake, herring, mackerel, spotted ray, spurdog, whiting and saithe. Spawning grounds for Norway pouting and whiting and nursery grounds for blue whiting, ling, Norway pout, and plaice do not overlap with the Proposed Development footprint but are within the Fish and Shellfish Ecology EIA Scoping Study Area.

Designated Sites

8.4.28 The SACs within the Fish and Shellfish Ecology EIA Scoping Study Area are: Inner Hebrides and the Minches SAC; Ascrib, Isay and Dunvegan SAC; Rigg-Bile SAC; Sligachan Peatlands SAC; Strath SAC; and Rum SAC, with the Inner Hebrides and the Minches SAC directly overlapping with the Proposed Development. None of these SACs are designated for fish or shellfish species.

Marine Mammals

8.4.29 Marine mammals that have been considered in this EIA Scoping Report include cetaceans (whales, dolphins, and porpoises) and pinnipeds (seals).

Cetaceans

8.4.30 Within Scotland, 23 species of cetacean have been recorded, and all of these species have recorded on the west coast of Scotland (HWDT, 2018). The most abundant cetacean species include harbour porpoise Phocoena phocoena, bottlenose dolphin Tursiops truncatus, minke whale Balaenoptera acutorostrata, short-beaked common dolphin Delphinus delphis and Risso's dolphin Grampus griseus (**Table** 8-12**;** Error! Reference source not found.). As these are the more abundant cetacean species in the region, they are all considered key receptors and are scoped into the EIA assessment (Hague et al., 2020; HWDT, 2018; Giles et al., 2023).

8.4.31 Other cetaceans recorded in the region include striped dolphin Stenella coeruleoalba, Atlantic white-sided dolphin Lagenorhynchus acutus, white-beaked dolphin Lagenorhynchus albirostris, killer whale Orcinus orca, long-finned pilot whale Globicephala melas, fin whale Balenoptera physalus, sperm whale Physeter macrocephalus, northern bottlenose whale Hyperoodon ampullatus, humpback whale Megaptera novaeangliae, and sei whale Balaenoptera borealis (Hague et al., 2020; HWDT, 2018; Giles et al., 2023).

Table 8-12: Cetacean Abundance Within SCANS-IV and Management Unit (MU) Blocks. Source: Gilles et.al (2021) and IAMMWG (2023)

Species	SCANS-IV block CS-H	Management Units (MUs)
Harbour porpoise	5,470 (95% CI=2,354 - 9,880)	West Scotland MU: 24,305 (CV=0.18; 95% CI=17,121 – 34,505)
Bottlenose dolphin	4,784 (95% CI=1,177 - 9,294)	Coastal West Scotland and Hebrides MU: 45 (95% CI=33-66)
Minke whale	493 (95% CI=4 - 1,915)	Celtic and Greater North Seas MU: 10,288 (CV=0.26; 95% CI= 6,210 – 17,042)
Short-beaked common dolphin	12,958 (95% CI=161 - 41,272)	Celtic and Greater North Seas MU: 57,417 (CV=0.32; 95% CI=30,850 – 106,863)

Species	SCANS-IV block CS-H	Management Units (MUs)
Risso's dolphin	341 (95%v CI=7 - 1,155)	Celtic and Greater North Seas MU: 8,687 (CV=0.63; 95% CI= 2,810 – 26,852)

Pinnipeds

8.4.32 Two seal species, grey seal Halichoerus grypus and harbour seal Phoca vitulina, are present along the west coast of Scotland. Harbour seal is the more common of the two species in the region (Error! Reference source not found.). As both species commonly occur in the area, they are considered as key receptors and are scoped into the EIA assessment (Morris et al., 2021; SCOS, 2021).

Table 8-13: Pinniped Count Data[2] within Seal Management Areas (SMAs) and Special Areas of Conservation (SACs). Source: Morris et al. (2021) and SCOS (2021)

Species	Seal Management Area (SMA)	Special Area of Conservation (SAC) counts
Grey seal	West Scotland: 4,174 (2016-2019 census) Loch Bracadale (Central Scotland sub-unit 8): 40 (year of count: 2017)	Treshnish Isles SAC: 160 (year of count: 2018) Monach Islands SAC: 2701 (year of count: 2017) North Rona SAC: 175 (year of count: 2014)
Harbour seal	West Scotland: 15,600 (2016-2021 census) Loch Bracadale (Central Scotland sub-unit 8): 290 (year of count: 2017)	Ascrib, Isay and Dunvegan SAC: 712 (year of count: 2017) Eileanan agus Sgeiran Lios mor SAC: 238 (year of count: 2018) South-East Islay Skerries SAC: 706 (year of count: 2018)

Designated Sites

8.4.33 Protected sites on the west coast of Scotland where cetaceans are designated features include the Inner Hebrides and Minches SAC, the Sea of the Hebrides Marine Protected Area (MPA) and the north-east Lewis MPA (**Figure 8-3Error! Reference source not found.**).

8.4.34 There are six SACs designed for seals on the west coast of Scotland and within the central west Scotland Seal Management Area there are eleven designated haul-out sites (Morris *et al*., 2014; SCOS, 2021), (**Figure 8-3**Error! Reference source not found.).

8.5 Effects Scoped Out of Assessment

8.5.1 Based on available information is it considered that effects associated with some impact / receptor pathways can be scoped out of further assessment. These pathways, the phase of works, the associated receptor for which it is scoped out, and the associated reasoning are provided in **Table 8-14**.

Table 8-14: Potential Impacts and Effects to be Scoped out of Assessment

[2] *Count data refers to the August count for adult seals which are hauled out during the harbour seal moult period.*

Activity / Potential Effect	Phase Construction (C) Operation (O)	Receptors	Scoping Assessment Summary
Direct damage and disturbance to mobile fish and shellfish from construction activities (e.g. crushing)	C,	Fish and Shellfish	Fish and shellfish which are highly mobile can move away from the Proposed Development area to avoid direct disturbance.
Injury and/or disturbance to fish (other than basking shark) due to collision risk from vessel activities	C, O	Fish and Shellfish	Mobile fish would be able to easily evade vessels to avoid collisions. This impact has been scoped out of the assessment for all fish species, other than basking shark for which collision risk has been scoped in due to the large size of this species and the fact that they often feed near the water surface.
Disturbance from activities above the sea surface	C	Marine Mammals (seals)	Construction of a land-based structure could disturb seals when hauled out at sites within the Loch and nearby area, for example due to airborne noise, or artificial lighting. However, the nearest haul-out site to the Proposed Development is approximately 35 km and the nearest SAC designated for seals is approximately 43.5 km away – consequently it has been scoped out for seals.

8.6 Potential Mitigation

8.6.1 Mitigation measures anticipated to be applied to the Proposed Development and relevant to Marine Ecology are described in

8.6.2 **Table** 8-15. Mitigation measures are subject to further environmental assessment, scheme development and stakeholder engagement/consultation. The requirement for embedded environmental measures and additional mitigation methods will be considered as the EIA progresses.

Table 8-15: Potential Mitigation Measures Relevant to Marine Ecology

Potential Effect	Approach to Mitigation Measures
Introduction of non-native invasive species	The likelihood of the introduction of Marine Invasive Non-Native Species (MINNS) will be reduced through the development of, and adherence to, a Biosecurity Plan incorporating a Biosecurity Risk Assessment. To further minimise the risk of introducing non-native species, particularly contained in ballast water, all ships subject to the Ballast Water Management Convention (2017) requirements will be obliged to conduct ballast water management in accordance with the contractual provisions and those within the Convention.
Accidental spillage of hazardous materials	All hazardous materials will be required to be stored and managed in accordance with best practice guidance. The likelihood of accidental pollution events occurring will be reduced through the implementation of a Construction Environment Management Plan (CEMP), (embedded mitigation). To further minimise the risk of accidental spillage of hazardous materials, regulations that implement the International Convention for the Prevention of Pollution from Ships (MARPOL) and its various annexes and protocols will be followed.
Mortality, injury, behavioural impacts and auditory masking for fish and marine mammals arising from noise and vibration	Application of a soft-start approach to piling and consideration of use of vibropiling or rotary drilling where possible. Development of and adherence to an agreed Marine Mammal Mitigation Protocol (MMMP), including a piling strategy, if necessary, based on Scope of Works and installation methods. The MMMP will be designed to reduce potential impacts from underwater noise on marine mammals (and fish) through good or standard practices/guidance. The MMMP will evolve during the development phase, as the EIA progresses, and in response to consultation.
Indirect effects of underwater noise or barrier effect on prey species for marine mammals	
Vessel collision	A vessel management plan, which could form part of the MMMP should be developed and adhered to. Adherence to Scottish Marine Wildlife Watching Code would also minimise risk of vessel collision with marine mammals.

8.7 Potential Impacts

8.7.1 A range of potential impacts on Marine Ecology have been identified which may occur during the construction and operational phases of the Proposed Development. Potential impacts which will be assessed within the EIA are presented in **Table 8-16.**

Table 8-16: Scoping Assessment – Marine Ecology

Activity / Potential Effect	Phase Construction (C) Operation (O)	Receptors	Scoping Assessment Summary
Direct habitat loss	C, O	Benthic Subtidal and Intertidal Habitats and Species Fish and shellfish	Potential effects may arise due to the physical presence of infrastructure (i.e. piles) and removal of rock associated with the construction and operational phases of the Proposed Development. This will result in direct habitat loss and may result in adverse effects on benthic, and fish and shellfish communities.
Mortality, injury and/or disturbance from underwater noise and vibration including impact piling and blasting	C	Benthic Subtidal and Intertidal Habitats and Species Fish and Shellfish Marine Mammals	Potential effects may arise due to increased noise and vibration due to pile-driving during construction phase of the Proposed Development. Additionally, rock removal, dredging and vessel movements also have the potential to result in underwater noise and vibration.
Sediment disturbance effects – affecting turbidity, soft sediment redistribution, and potential smothering of habitats	C	Benthic Subtidal and and Intertidal Habitats and Species Fish and Shellfish	Potential effects may arise due to sediment disturbance from a range of construction activities such as piling, rock removal and localised dredging. This may result in adverse effects on marine ecology receptors. This can be a result of e.g. a temporary increase in Suspended Sediment Concentrations (SSC) and associated sediment deposition.
Remobilisation of contaminated sediments	C	Benthic Subtidal and and Intertidal Habitats and Species Fish and Shellfish	Potential effects may arise due to sediment disturbance from a range of construction activities such as piling, rock removal and localised dredging. This could potentially lead to the mobilisation of sediment contaminants, harmful to marine ecology receptors.
Alteration of seabed habitats arising from permanent changes in physical processes	O	Benthic Subtidal and Intertidal Habitats and Species Fish and Shellfish	The presence of infrastructure (operational phase) may introduce localised changes to the tidal flow and wave climate. Where soft sediments are present this could influence areas of sediment erosion and deposition.

Activity / Potential Effect	Phase Construction (C) Operation (O)	Receptors	Scoping Assessment Summary
Increase in local biodiversity through colonisation of introduced man-made structures	O	Benthic Subtidal and Intertidal Habitats and Species	Potential effects during the operational lifetime of the Proposed Development may arise due to the physical presence of man-made substructures, which are expected to be colonised by a variety of benthic species. This could potentially result in an increase in local biodiversity which could be a beneficial effect.
Introduction of Marine Invasive Non-Native Species (MINNS)	C, O	Benthic Subtidal and Intertidal Habitats and Species Fish and Shellfish	Potential effects may arise from the introduction or spread of MINNS due to the increased presence and movement of vessels (e.g. ballast water, colonisation of vessel hulls) or introduction of materials to the marine environment, which may be colonised and facilitate the spread of non-native species (NNS). Invasive NNS may subsequently impact marine ecology receptors.
Artificial lighting	C, O	Benthic Subtidal and Intertidal Habitats and Species Fish and Shellfish	Safety or navigational lighting has the potential to cause behavioural changes to receptor groups due to changes in the ambient underwater illumination.
Accidental pollution	C, O	Benthic Subtidal and Intertidal Habitats and Species Fish and Shellfish Marine Mammals	Potential effects may arise from accidental pollution events due to the increased presence of vessels, which could result in adverse impacts to marine ecology receptors.
Indirect effects on marine mammals via direct impacts to prey species	C, O	Marine Mammals	The addition of a fixed structure can alter the marine environment and create habitat changes, which may affect prey species for marine mammals. This includes the impact of direct habitat loss, piling noise and vibration, sediment disturbance, remobilisation of contaminated sediments, artificial lighting, introduction of MINNS and accidental pollution on prey species.
Vessel collision	C, O	Fish and shellfish (basking shark) Marine Mammals	Increased vessel presence presents an increased collision risk for basking shark and marine mammals, which can result in injury or death.

Activity / Potential Effect	Phase Construction (C) Operation (O)	Receptors	Scoping Assessment Summary
Vessel disturbance	C, O	Marine Mammals	Marine mammals may be disturbed by increased vessel presence in the area, which could result in behavioural disturbance which may cause long-term displacement of marine mammals. Increased vessel traffic throughout operation may also result in disturbance and/or displacement.

8.8 Scoping Questions to Consultees

- Q8.1. Are you satisfied with the scope proposed for the Marine Ecology Chapter of the EIA Report for the Proposed Development?
- Q8.2. Are you satisfied that the proposed Marine Ecology topic-specific study areas are suitable for the purpose of the EIA Report for the Proposed Development?
- Q8.3. What other data sources or surveys, if any, should be used or referred to in the preparation of the Marine Ecology chapter of the EIA Report for the Proposed Development?
- Q8.4. What additional guidance and policy should be used to inform the preparation of the Marine Ecology chapter of the EIA Report for the Proposed Development?
- Q8.5. Are there any other potential effects that you believe could be significant and which you wish to see assessed in the EIA Report for the Proposed Development?

9. Intertidal and Terrestrial Ornithology

9.1 Introduction

9.1.1 The intertidal and terrestrial ornithology chapter will cover the potential effects on bird species that may arise from the construction and operation (including maintenance) of the Proposed Development, and proposed methodologies for further assessment during the EIA Report are outlined. It is important to outline that the intertidal element of the chapter also includes nearshore ornithology. Therefore, this chapter covers nearshore, intertidal, and terrestrial birds.

9.1.2 This chapter of the Scoping Report is structured to include:

- A preliminary review of the baseline environment relevant to the intertidal and terrestrial ornithology receptors including site-specific surveys and a desk-based assessment;
- A list of legislation, policy, and guidance specific to the assessment of intertidal and terrestrial ornithology effects;
- A definition of the intertidal and terrestrial ornithology scoping study areas;
- The EIA methodology proposed to assess potential intertidal and terrestrial ornithology effects identified, including proposed data sets and baseline surveys to be used to inform the topic-specific EIA Report chapter;
- A summary of activities that are proposed to be scoped out of the assessment;
- A summary of potential mitigation measures to be proposed to reduce the potential for effects relating to intertidal and terrestrial ornithology;
- A summary of potential effects on intertidal and terrestrial ornithology receptors that are proposed to be assessed during the EIA Scoping Report process; and
- Questions for stakeholders to consider in providing feedback on this chapter.

9.1.3 Intertidal and terrestrial ornithology interfaces with other aspects as birds rely on and interact with other habitats and species, therefore this Section should be considered alongside other sections; namely:

- **Section 7: Terrestrial Ecology:** Intertidal and terrestrial ornithology will include some species that are sensitive to possible changes on prey resource and habitats. Therefore, the terrestrial ecology section will inform the intertidal and terrestrial ornithology assessment due to the presence of bird species that use these habitats.
- **Section 8: Marine Ecology:** Intertidal and terrestrial ornithology will include some species that are sensitive to possible changes on prey resource and habitats. Therefore, the marine ecology section will inform the terrestrial and intertidal ornithology assessment as this section covers benthic and epibenthic species which intertidal and terrestrial ornithology receptors rely on as part of their diet.
- **Section 12: Coastal Processes and Geomorphology:** There are potential pathways of effect from marine processed physical parameters on potentially sensitive intertidal ornithology receptors species, therefore information from the coastal processes and geomorphology section will inform the intertidal and terrestrial ornithology assessment.
- This Section of the Scoping Report considers the three indicative locations for the Proposed Development outlined in **Section 2** (Options A, B and C shown within **Figure 2.4**). It is important to note that only one of these sites will be taken forward beyond scoping.

9.2 Guidance & Legislation

9.2.1 This Section identifies the relevant legislation and policy context which has informed the scope of the intertidal and terrestrial ornithology assessment. Further information on policies relevant to the EIA and their status is set out in Section 3**Error! Reference source not found.** which provides a detailed summary of individual international, national, marine, and local planning policies of relevance to this EIA. Therefore, Section 3**Error! Reference source not found.** should be read in conjunction with this Section.

9.2.2 In order to provide a robust evidence base, Table 9-1 below presents a summary of legislation and policies relevant for the intertidal and terrestrial ornithology assessment for which this Section takes account of specific requirements to assess and address likely impacts on receptors and relevant environmental issues. This table does not quote the policies in full but rather states the relevance to this Section.

Table 9-1: Relevant Legislation and Policy

Relevant Legislation & Policy	Relevance to the Assessment
Legislation	
International: European Commission Directive 2009/147/EC (codified version of 79/409/EC) on the Conservation of Wild Birds (the 'Birds Directive') (2009)	The Birds Directive aims to protect all of the 500 wild bird species naturally occurring in the European Union and stipulates that Member States must designate Special Protection Areas (SPAs) for the survival of species listed under Annex 1 of the Directive and all migratory bird species. The Directive is implemented in Scotland by the Nature Conservation (Scotland) Act (2004) and the Offshore Regulations (2017). The potential for effects on birds protected under the Birds Directive will be considered throughout the assessments in the EIA Report.
International: EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (known as the 'Habitats Directive') (1992)	The Habitats Directive ensures the conservation of a wide range of rare, threatened, or endemic animal and plant species within Europe. Among other things, the Directive stipulates the procedures for the protection of SPAs and sets out the steps which must be taken in order to assess the impact of any proposed development. The Directive is implemented in Scotland by The Habitats Regulations (2019) and the Offshore Regulations (2017). The potential for effects on bird habitats protected under the Habitats Directive will be considered throughout the assessments in the EIA Report.
National: The Conservation (Natural Habitats, &C.) (EU Exit) (Scotland) (Amendment) Regulations (the 'Habitat Regulations') (2019)	The Habitat Regulations cover the requirements for protecting sites that are internationally important for threatened habitats and species. The Regulations also provide a legal framework for species requiring strict protection. The potential for effects on bird habitats protected under the Habitat Regulations will be considered throughout the assessments in the EIA Report.
National: The Conservation of Offshore Marine Habitats and Species Regulations (2017)	The Regulations implement the species protection requirements of the Habitats and Birds Directives offshore (more than 12 nautical miles from the coast). The potential for effects on offshore bird habitats protected under the Offshore Regulations will be considered throughout the assessments in the EIA Report.

Relevant Legislation & Policy	Relevance to the Assessment
International: Ramsar Convention on Wetlands of International Importance (1971)	The Ramsar Convention commits Contracting Parties to "wise use of all wetlands through local and national actions and international cooperation". Parties agree to work towards wise use of wetlands, designate suitable wetlands for the Wetlands of International Importance and ensure their effective management, and cooperate internationally on transboundary wetlands. The potential for effects on wetland birds and their habitats protected under the Ramsar Convention will be considered throughout the assessments in the EIA Report.
International: The Convention on the Conservation of Migratory Species of Wild Animals (the 'Bonn Convention') (1979)	The Convention stipulates that Contracting Parties collaborate to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral Agreements for the conservation and management of migratory species which require or would benefit from international co-operation (listed in Appendix II), and by undertaking co-operative research activities. The potential for effects on migratory bird species protected under the Bonn Convention will be considered throughout the assessments in the EIA Report.
International: The Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') (1979)	The principal aims of the Convention are to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase co-operation between contracting parties, and to regulate the exploitation of migratory species listed in Appendix III. The potential for effects on birds and their habitats protected under the Bern Convention will be considered throughout the assessments in the EIA Report.
National: The Wildlife and Countryside Act (as amended) (1981)	The Wildlife and Countryside Act 1981 was enacted to implement the Birds Directive and Bern Convention in Britain, supplemented by the Nature Conservation (Scotland) Act (2004). Among other things, the Wildlife and Countryside Act 1981 provides protection to all birds, with increased protection afforded to those listed under Schedule 1 of the Act. All Birds Directive Annex 1 species are listed under Schedule 1 of the Act. The potential for effects on birds protected under the Act will be considered throughout the assessments in the EIA Report.
National: Nature Conservation (Scotland) Act (2004)	The Act introduces a requirement that public bodies in Scotland have a duty to further the conservation of biodiversity and sets out a series of measures that are designed to conserve biodiversity and to protect and enhance the biological and geological natural heritage of Scotland. The potential for effects on birds and their habitats protected under the Act will be considered throughout the assessments in the EIA Report, with the scope influenced by elements of the Act contained within Parts 1-3. Part 1 stipulates that the presence of biodiversity is understood and assessed appropriately, which is provided via the

Relevant Legislation & Policy	Relevance to the Assessment
	EIA baseline. Part 2 stipulates the designation and conservation of Sites of Special Scientific Interest (SSSIs) within Scotland. Part 3 addresses the protection of wildlife and the assessment required under the Habitat Regulations (2019). These are considered within the scope of the assessments.
National: Marine (Scotland) Act (2010)	Creates a new legislative and management framework for the marine environment in Scotland. Amongst other things, the Act introduces a duty to protect and enhance the marine environment and includes measures to improve marine nature and historic conservation with new powers to protect and manage areas of importance for marine wildlife and habitats. The potential for effects on birds and their habitats protected under the Act will be considered throughout the assessments in the EIA Report.
National: UK Post-2010 Biodiversity Framework (2012)	The Framework demonstrates how the work of the four countries (England, Northern Ireland, Scotland, and Wales) and the UK contributes to achieving the Aichi Targets, and identifies the activities required to complement the country biodiversity strategies in achieving the Targets.
National Policy	
National Planning Framework 4 (NPF4) (2023)	This framework supports renewable electricity generation and expansion of the electricity grid which is fundamental to achieving a net zero economy and support improved network resilience. The policy (ND12) supports substantial reinforcement including the addition of new infrastructure to connect and transmit the output from new on and offshore capacity to consumers in Scotland.
National Policy Statement (NPS) for Ports (2012)	The NPS for ports refers to marine and coastal birds at paragraphs 5.1.1 to 5.1.25 on biodiversity and geological conservation.
Marine Policy	
UK Marine Policy Statement (2011)	Sets out high-level objectives for the marine space, including achieving a sustainable marine economy and identifies a wide range of relevant marine uses. Requires use of the marine environment and its resources to maximise sustainable activity, prosperity, and opportunities for all. Requirements for biodiversity to be protected, conserved and where appropriate recovered and loss halted; Requirements for healthy marine and coastal habitats can occur across their natural range and are able to support strong, biodiverse biological communities and the functioning of healthy, resilient, and adaptable marine ecosystems; and the oceans to

Relevant Legislation & Policy	Relevance to the Assessment
	have viable populations of representative, rare, vulnerable, and valued species. Refers to marine and coastal birds through reference to the Birds Directive and SPAs, and at paragraph 3.4.9 on the potential impacts of port developments on birds.
Scottish National Marine Plan 2015 ➢ GEN 1 General planning principle ➢ GEN 4 Co-existence ➢ GEN 9 Natural heritage ➢ REC & TOURISM 5	GEN 1 supports sustainable developments which provide economic benefit to Scottish communities and social benefits will be favoured. GEN 4 emphasises the need for co-existence between development sectors and activities and requires cumulative impacts to be addressed. GEN 9 sets a requirement for development to comply with the legal requirements for protected areas and protected species; not to result in significant impact on the national status of Priority Marine Features; and protect and, where appropriate, enhance the health of the marine area. REC & TOURISM 5 sets a requirement to support enhancement to the aesthetic qualities, coastal character, and wildlife experience.
Local Planning Policy	
West Highland and Islands Local Development Plan (WestPlan) (2019)	Policies of relevance to this area of technical assessment are: ➢ Policy 2: Delivering Development which supports the provision of infrastructure to enable the delivery of development and to create communities served by an appropriate level of services and facilities. ➢ Policy 3: Growing Settlements which takes into account the issues and placemaking priorities identified for the individual Growing Settlements.

Technical Guidance

Technical guidance that has been used to define the assessment is set out in **Table 9-2** below.

Table 9-2: Relevant Technical Guidance

Guidance Reference	Relevance to the Assessment
CIEEM (2018)	Guidelines on the approach to EIA recommending that the conservation values of receptors are considered. This guidance will be considered when assessing potential impacts at the EIA scale.

Guidance Reference	Relevance to the Assessment
Furness 2015; Mitchell et al. 2004; seabird monitoring programme database (BTO, 2023); designated site citations / departmental briefs / conservation advice from the websites of SNCBs.	Bird population estimates.
Cleasby et al., 2020, 2018; Waggit et al., 2019; Woodward et al. 2019; Wakefield et al., 2017, 2013; Kober et al., 2010; Stone et al. 1995, MacArthur Green., 2018, 2019, Waggit et al. 2020, Scottish Natural Heritage, 2016.	Bird foraging ranges and distribution at sea. This guidance will be considered to define species with connectivity to the Project during the breeding season.
Waterbird Disturbance Mitigation Toolkit (Cutts et al. 2013).	Contains information on the responses of a range of waterbird species to human activity derived primarily from studies at coastal sites in the UK.

9.3 Proposed Scope of Assessment

Proposed Study Area

9.3.1 The study area for the intertidal and terrestrial ornithology assessment is defined as the three indicative locations for the Proposed Development (Site A, B and C shown within Figure 2.4) plus a 500 m buffer. These study areas (Intertidal and Terrestrial Survey Areas; outlined in 7.2: Baseline Description) were designed to cover nearshore, intertidal, and terrestrial environments surrounding the Proposed Development to characterise the avian assemblage that may be affected by the Proposed Development.

9.3.2 The study area will be reviewed and amended in response to refinement of the indicative locations for the Proposed Development, the identification of additional impact pathways, and in response, where appropriate, to feedback from consultation.

Assessment Methodology

Introduction

9.3.3 The Project-wide approach to the assessment methodology is set out in Section 1.4. However, whilst this has informed the approach that has been used in this intertidal and terrestrial ornithology chapter, it is necessary to set out how this methodology will be applied, and adapted as appropriate, to address the specific needs of the intertidal and terrestrial ornithology assessment.

9.3.4 The assessment has been undertaken using the Chartered Institute of Ecology and Environmental management (CIEEM) Guidelines for ecological impact assessment in the UK and Ireland: terrestrial, freshwater, coastal and marine (CIEEM, 2018). This is a standard approach for UK environmental impact assessments.

9.3.5 A 'source-pathway-receptor' model is proposed to identify any likely impacts on intertidal and terrestrial ornithology receptors resulting from the proposed construction and operation (including maintenance) of the Proposed Development. The parameters of this model are defined as follows:

- **Source** – the origin of a potential impact (noting that one source may have several pathways and receptors) e.g., an activity such as piling and a resultant effect such as increased noise.
- **Pathway** – the means by which the effect of the activity could impact the receptor e.g., for the example above, piling has the potential to generate sudden, loud 'percussive' noises that can disturb birds.

- **Receptor** – the element of the receiving environment that is impacted e.g., for the above example, disturbed birds may cease to feed / become alert and, if it is above a threshold level, flying away either a short distance or in the worst case leaving the area altogether.

Evaluating Potential Receptors

9.3.6 The proposed assessment process will involve identifying Valued Ornithological Receptors (VORs). These receptors and their conservation value will be determined by the criteria defined in **Table** 9-3. These criteria are intended as a guide and are not definitive.

Table 9-3: Definition of Conservation Value Levels for Intertidal and Terrestrial Ornithology Receptors

Value	Definition
High	A species for which individuals at risk can be clearly connected to a particular SPA or is found in numbers of international importance within the study area during a particular season.
Medium	A species for which individuals at risk are probably drawn from particular SPA populations or found in numbers of national importance within the study area during a particular season, although other colonies (both SPA and non-SPA) may also contribute to individuals observed in the intertidal and terrestrial ornithology study area.
Low	A species for which it is not possible to attribute to particular SPAs and may be found in regionally or locally important numbers during specific seasons within the intertidal and terrestrial ornithology study area.
Negligible	All other species that are widespread and common and which are not present in locally important (or greater) numbers, and which are of low conservation concern (e.g., UK BoCC5 Green List species; Stanbury et al., 2021).

9.3.7 The assessment of potential receptors will consider the importance of the Proposed Development study area for the bird species under consideration. In accordance with CIEEM (2018) guidelines the focus of assessments will be on "*significant effects rather than all ecological effects*". To illustrate the rationale of this approach, whilst a VOR could be considered of high conservation importance using the criteria in Table 9-3, the importance of the study area to this species may be considered limited if only a low number of sightings are recorded within the study area in the baseline surveys. As such, while the conservation value of the species is considered, the number of individuals of that species using the study area, and the nature and level of this use, is also considered. An assessment is then made of the importance of the study area to the species in question.

9.3.8 Forecasting of the potential for certain effects to disturb birds is based on published literature and guidance. For coastal waterbirds, the key source of information is the Waterbird Disturbance Mitigation Toolkit3. This holds information on the responses of a range of waterbird species to human activity derived primarily from studies at coastal sites in the UK. The Toolkit incorporates information from two studies that are specific to measuring the response of coastal birds to the noise of piling works carried out at, or near, the high-water mark (Cutts and Allen, 1999; Postlewaite and Stephenson, 2012) and an extensive literature review (Cutts, et al., 2009) that includes the response of birds to visual stimuli such as people and machinery.

[3] available online at: https://www.tide-toolbox.eu/tidetools/waterbird_disturbance_mitigation_toolkit/ [Accessed 11 October 2023]

Characterising Potential Impacts

9.3.9 The sensitivity of the intertidal and terrestrial ornithology receptors to potential impacts will be determined subjectively based on species' ecology and behaviour, using the criteria set out in **Table** 9-4. Judgement will take account of information available on the responses of VORs to various stimuli (e.g. predators, noise, and visual disturbance) and whether a VOR's ecology makes it vulnerable to potential impacts (e.g. species that are more sensitive to noise and visual disturbance, this is discussed below in **paragraph 9.3.15** below). A description is provided in **Table** 9-4 of how sensitivity is intended to be assessed for the impact of disturbance by human activities, but the general approach can be applied to any impact.

Table 9-4: Definition of level of sensitivity for intertidal and terrestrial ornithology receptors

Value	Definition
High	VOR has very limited tolerance to sources of disturbance such as noise, light, and the sight of people/machinery/structures.
Medium	VOR has limited tolerance to sources of disturbance such as noise, light, and the sight of people/machinery/structures.
Low	VOR has some tolerance to sources of disturbance such as noise, light, and the sight of people/machinery/structures.
Negligible	VOR is generally tolerant to sources of disturbance such as noise, light, and the sight of people/machinery/structures.

9.3.10 Sensitivity can differ between similar species, between different populations of the same species, between different individuals within a population and also differ in the same individual during different times. Thus, the behavioural responses of intertidal and terrestrial VORs are likely to vary with both the nature and context of the stimulus and the experience of the individual bird. Sensitivity also depends on the activity of the bird.

9.3.11 In addition, individual birds of the same species will differ in their tolerance depending on the level of human disturbance that they regularly experience in a particular area and have become habituated to (e.g., individuals that forage within close proximity to an area with high human activity levels are likely to have a greater tolerance than those that occupy remote locations with little or no human presence).

9.3.12 Consideration of the level of sensitivity with regards to individual VORs will be one of the core components of the assessment of potential impacts and their effects.

9.3.13 In addition, each receptor's conservation value will also be considered using reasoned judgement when determining their overall sensitivity to any potential impact or effect. For example, herring gull could be listed as a qualifying feature of an SPA and is a red listed species of conservation concern across the UK in BoCC5 (Stanbury et al., 2021), but not judged to be sensitive to anthropogenic disturbance given its propensity to forage successfully on active landfill sites, utilise development structures to perch on and to breed within urban environments on industrial and residential buildings roof tops. Such reasoned judgement is an important part of the overall narrative used to determine potential impact significance and will be used, where relevant, as a mechanism for modifying the sensitivity of an effect assigned to a specific VOR.

9.3.14 The use of expert judgement (CIEEM, 2018), alongside the conservation value (Table 9-3) and sensitivity (Table 9-4) of a VOR will be used to determine their overall sensitivity in the assessment.

9.3.15 The Waterbird Disturbance Mitigation Toolkit, described above in relation to evaluating potential receptors, also provides information on the response of waterbirds to certain effects that are drawn from published literature and guidance. For this impact assessment, the information in the

Waterbird Disturbance Mitigation Toolkit has been used to identify sensitivity criteria in relation to noise and visual disturbance across the range of bird species that are being assessed:

9.3.16 For above water noise the Toolkit identifies a threshold for a no effect level on waterbirds of 55 dB (i.e., no effects were recorded below 55 dB but can occur above this) and the potential for a significant effect over 70 dB, over which it is possible that waterbirds may cease to feed or roost.

9.3.17 For visual disturbance, the Toolkit identifies a distance at which even for the most sensitive waterbird species (the 'Red' species listed below), there is a minimal response to the presence of humans or machinery of 300 m.

9.3.18 The sensitivity of waterbird species to human activity is categorised in the Toolkit under a Red-Amber-Green system. The most sensitive 'Red' species are brent goose, shelduck, knot and redshank; the moderately sensitive 'Amber' species are mallard, oystercatcher, golden plover, grey plover, lapwing, black-tailed godwit, bar-tailed godwit and curlew and the least sensitive 'Green' species are ringed plover, sanderling, dunlin, and turnstone.

Magnitude

9.3.19 Impacts on VORs will be judged in terms of their magnitude. Magnitude refers to the scale of an impact and will be determined on a quantitative basis where possible. This may relate to the area of habitat lost to the development footprint in the case of a habitat feature or predicted loss of individuals in the case of a population of a species of bird. Magnitude is assessed within four levels, as detailed in **Table** 9-5**.**

Table 9-5: Definition of Impacts for Intertidal and Terrestrial Ornithology Receptors

Magnitude	Definition
High	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is predicted to irreversibly alter the population in the short to long-term and to alter the long-term viability of the population and/ or the integrity of the protected site. Recovery to baseline levels from that change predicted to be achieved in the long-term (i.e., more than five years) following cessation of the development activity.
Medium	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that occurs in the short and long-term, but which is not predicted to alter the long-term viability of the population and/ or the integrity of the protected site. Recovery to baseline levels from that change predicted to be achieved in the medium-term (i.e., no more than five years) following cessation of the development activity.
Low	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is sufficiently small-scale or of short duration to cause no long-term harm to the feature/ population. Recovery to baseline levels from that change predicted to be achieved in the short-term (i.e., no more than one year) following cessation of the development activity.
Negligible	Very slight change from the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site. Recovery to baseline levels from that change predicted to be rapid (i.e., no more than circa six months) following cessation of the development activity.

Knowledge of how rapidly the population or performance of a species is likely to recover following loss or disturbance (e.g., by individuals being recruited from other populations elsewhere) will also be used to assess impact magnitude, where such information is available.

Impact Significance

9.3.20 The CIEEM guidelines (2018) use only two categories to classify effects: "significant" or "not significant". The significance of an effect is determined by considering the overall importance (defined here as the overall sensitivity) of the receptor and the magnitude of the impact using a matrix-based approach provided in **Table 9-6** below. Where possible, assessment of the magnitude of the impact on intertidal and terrestrial ornithology is based upon quantitative criteria, together with applying professional judgement as to whether the integrity of the feature will be affected.

9.3.21 Effects are more likely to be considered significant where they affect ornithological features of higher overall sensitivity or where the magnitude of the impact is high. Effects not considered to be significant would be those where the integrity of the feature is not threatened, effects on features of lower overall sensitivity, or where the magnitude of the impact is low.

Table 9-6: Impact Assessment Matrix for Significance

Receptor sensitivity / value	Effect magnitude			
	High	Moderate	Low	Negligible
Very high	Major	Major	Moderate	Minor
High	Major	Moderate	Moderate	Minor
Medium	Moderate	Moderate	Minor	Negligible
Low	Minor	Minor	Negligible	Negligible

Cumulative Effects

9.3.22 Cumulative effects on intertidal and terrestrial ornithology resulting from the effects of the Proposed Development and other developments will be assessed, taking into account the ecology of ornithology receptors and the potential for connectivity using species-specific connectivity distances (Scottish Natural Heritage, 2016).

9.3.23 Cumulative impacts during the construction and operational phases are anticipated to be screened out as the contribution from the Proposed Development is likely to be small and is dependent on a temporal and spatial co-incidence of potential effects from other plans or projects. Significant additive effects associated with simultaneous construction phases are considered unlikely based on currently available project information for other developments.

Transboundary Effects

9.3.24 The Proposed Development alone and cumulative impact assessments may affect intertidal and terrestrial bird populations located outside UK territorial water, giving the potential for transboundary impacts.

9.3.25 Transboundary impacts during the construction and operation phases are anticipated to be screened out as the potential routes of impact from the Proposed Development are limited. Potential transboundary effects will be assessed, taking into account species recorded within the study area and refined based on their ecology. Species of importance for the Proposed Development are likely to be migratory waterfowl.

9.4 Baseline Description

Site Specific Surveys

9.4.1 The Proposed Development is situated on the eastern shore of Loch Caroy, which is a sea loch located approximately 5.5km north-west of Struan and 7km south-east of Dunvegan in the north-west of Skye, Scotland.

9.4.2 To document the avian assemblage present, APEM have been commissioned by the Applicant to carry out one year of bird surveys which began in April 2023 and are due to complete in March 2024.

9.4.3 Intertidal surveys are being undertaken from four Vantage Points (VPs) covering the three indicative locations for the Proposed Development using the development footprint plus 500 m survey buffer (hereafter referred to as the Intertidal Survey Area) as shown in **Figure 9.1**. In line with the above, intertidal surveys started in April 2023 and will continue until March 2024 to capture breeding, non-breeding, and passage migration periods. Due to the limited size of the Site, the simple habitats present and lack of potential for connectivity, two years of data collection would be overly precautionary in APEM's expert opinion.

9.4.4 Intertidal bird surveys are being undertaken at the Proposed Development site using the 'Through the Tidal Cycle Count' (TTTCC) method, which is based upon 'look-see' methods (Gilbert et al. 1998). Surveys are being undertaken monthly, with alternate visits capturing the rising and falling tides as there are differences in food availability and energy budgets on the rising and ebbing tides. This also allows for the capture of both high tide and low tide roosts during each visit as well as foraging activities and results in a more robust assessment of the potential impacts of the Proposed Development upon ornithological receptors within the intertidal and nearshore areas. The surveys census and map the waterbirds and other species of interest present within the intertidal zone between the mean low-water and mean high-water marks and any significant roosts above the high-water mark, as well as those present in the nearshore waters within 500 m of the development footprint.

9.4.5 Breeding bird surveys were undertaken covering the terrestrial development footprint plus 500 m survey buffer (hereafter referred to as the Terrestrial Survey Area; **Figure 9.1**) and followed an adapted version of the Common Bird Census (CBC) as detailed by the Bird Survey Steering Group (2022). A four-visit method was employed (April to early July 2023), with three diurnal surveys and a single dusk visit to document nocturnal and crepuscular species. This approach is considered appropriate due to the small size and uniform habitats found within the Terrestrial Survey Area. Diurnal surveys began half an hour prior to sunrise and were completed by 11:00 on each survey day. The dusk survey began in the evening and concluded one hour after sunset. Surveyors approached all suitable habitat within the Terrestrial Survey Area to within a distance of 50 m, where possible. The identity and activity of all bird species was recorded using standard British Trust for Ornithology (BTO) notation. Territory Analysis will be undertaken4 to determine the breeding bird assemblages present within the Terrestrial Survey Area.

9.4.6 The current extent of the Intertidal and Terrestrial Survey Areas outlined above is considered precautionary; however, the survey areas would be reviewed and amended in response to consultation with the stakeholders and considering any feedback received on this EIA Scoping Report.

Desk Based Assessment

9.4.7 To inform this scoping chapter, a high-level desk-based assessment has been conducted for the ornithology receptors using a range of existing ecological data (**Table 9-7**).

[4] For species listed on Schedule 1, Annex I, or Birds of Conservation Concern.

Table 9-7: Key Sources of Intertidal and Terrestrial Ornithology Data

Source	Summary	Coverage
Bird records from the BTO Wetland Bird Survey (WeBS), BTO Non-Estuarine Waterbird Survey (NEWS), BTO BirdTrack, National Biodiversity Network (NBN), Highlands Biological Records Group (HBRG), Highland Raptor Study Group, Scottish Ornithologist Clubs (SOC) Highland Branch as well as any other relevant bodies identified.	Terrestrial, intertidal, and nearshore bird records to inform on abundance and distribution of species within the intertidal zone of influence.	Full coverage of study area.
BTO Bird Atlas (Balmer et al., 2013), Birds of Scotland (Forrester et al., 2007), The Highland Bird Report 2021 (SOC, 2021), Skye Birds (McMillan, 2019) as well as any other relevant bodies identified.	Terrestrial, intertidal, and nearshore bird records and ecology to inform on abundance and distribution of species within the intertidal zone of influence.	Full coverage of study area.
NatureScot Site Link	Designated site citations, including designated features and population estimates	Full coverage of study area

9.4.8 Where access to available data for ornithology receptors is limited, data requests have been identified for inclusion in the EIA Report. **Table 9-8** summarises some of the key ornithology data requests to be used.

Table 9-8: Key sources of ornithology requests

Source	Summary	Coverage
BTO WeBS	Core Count data for the Loch of Caroy WeBS sector. Includes peak counts across a 5-year period.	Loch of Caroy WeBS sector
BTO NEWS	Low Tide Count data for sites that overlap with the Study Area. The most recent NEWS counts were undertaken in 2015/2016, further highlighting the importance of the site specific TTTCC surveys outlined in **paragraph 9.4.4** above.	Loch of Caroy WeBS sector
BTO BirdTrack	Intertidal and nearshore bird records throughout the Study Area.	Currently unknown as data has not yet been requested

9.4.9 This section presents an overview of the existing environment and key bird species likely to be present within the survey areas. This is based on species recorded to date during baseline surveys.

9.4.10 At the time of writing, results from the first six months (April - September 2023) of ornithology surveys are available. A further six months of surveys are planned, ending in March 2024. To date, 14 species have been recorded during breeding bird surveys of which four are BoCC5 red-listed (Stanbury et al., 2021) and four are included in the Scottish Biodiversity List (SBL). 20 species have

been recorded during VP surveys, of these, four are included on Annex I of the Birds Directive, four are listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), five are BoCC5 red-listed (Stanbury et al., 2021) and six are included in the SBL.

9.4.11 The Proposed Development overlaps with Loch Caroy which encompasses rocky shores with low cliffs and the terrestrial environment consists of predominately improved grassland with areas of damp pasture.

9.4.12 As the Proposed Development is not located within 20 km of any SPAs or Ramsar sites, there is limited potential for connectivity between the Proposed Development and designated ornithological features. Therefore, for the purposes of this report, species of conservation concern (target species) for intertidal and terrestrial ornithology are defined as follows:

- Species for which Special Protection Areas (SPA) are designated and those listed under Annex I of the Directive 2009/147/EC on the conservation of wild birds (commonly referred to as the Birds Directive);
- Species listed under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended);
- Red-listed birds of conservation concern (BoCC5) (Stanbury et al., 2021); and
- Species included in the Scottish Biodiversity List (SBL).

9.5 Receptors and Impacts Scoped Out of Assessment

9.5.1 The intertidal and terrestrial ornithology assessment highlights the potential effects associated with the Proposed Development and identifies those to be scoped in or out of the EIA process. The assessment will consider value, sensitivity, and likelihood of effect on birds (**Table 9-9).** Effects resulting from the Proposed Development may have an adverse, positive or no effect on intertidal and terrestrial ornithology.

Table 9-9: Potential effects to be scoped out of assessment

Activity / Potential Effect	Phase	Activity / Potential Effect
Accidental pollution (including indirect effects)	C, O, D	Negligible potential direct and indirect impacts. See paragraph 9.4.3.
Introduction of light	C, O, D	Negligible potential direct and indirect impacts. See paragraph 9.4.4.

9.5.2 Two potential effects have been scoped out from further assessment, resulting from a conclusion of negligible chance of a potentially significant adverse effect. These conclusions have been made based on the knowledge of the baseline environment, the nature of planned works and the evidence available on the potential for impact from projects more widely. The conclusions follow (in a site-based context) existing best practice. Each scoped out effect is considered in turn below.

Accidental Pollution during Construction (including indirect effects)

9.5.3 The impact of pollution including accidental spills and contaminant releases associated with the construction of infrastructure and use of supply / service vessels may lead to direct mortality of birds or indirectly via causing a deterioration in habitat quality or a reduction in prey availability either of which may affect species' survival rates. In terms of putting this potential impact into context, it has previously been predicted for offshore wind farms that any impact would be of a local spatial extent, short term in duration, and not significant in EIA terms. As this Proposed Development is considered to be smaller in scale and operation, it is intended to scope this impact out of further consideration within the EIA Report for intertidal and terrestrial ornithological

receptors subject to consultation with the stakeholders and feedback received on this EIA Scoping Report.

Introduction of Light

9.5.4 Potential impacts of the introduction of light would be highly localised given the limited size of the Proposed Development. As potential impacts are localised, potential effects from the introduction of light will not be significant. Therefore, it is proposed that this impact should be scoped out from further consideration within the EIA Report for intertidal and terrestrial ornithological receptors subject to consultation with the stakeholders and feedback received on this EIA Scoping Report.

9.6 Potential Mitigation

9.6.1 Mitigation measures relevant to intertidal and terrestrial ornithology are described in **Table 9-10** below. Mitigation measures are subject to further environmental assessment, evolution of the Proposed Development and stakeholder engagement/consultation. The requirement for other embedded environmental measures and additional mitigation methods will be considered as the EIA progresses.

Table 9-10: Potential mitigation measures relevant to intertidal and terrestrial ornithology

Potential Effect	Approach to Mitigation Measures
Loss of habitat	Habitat creation. The development of compensation sites could be considered to ensure that any potential impacts are sufficiently addressed. Monitoring of compensation sites would be required to show that sites are ecologically functional and provide a range of bird food resource for impacted species or designated bird features.
Operational disturbance and displacement (i.e., potential disturbance to protected species of conservation concern)	Sensitive timing of operations; for example, not during the breeding, migration or over wintering season of a particular species.
	Conduct operations with a construction buffer zone in place. In addition to this, employment of an ornithologist or Ecological Clerk of Works (ECoW) could be considered to supervise operations including vegetation clearance and piling to ensure that no breeding / nesting, foraging or roosting birds are disturbed.

9.7 Potential Impacts

9.7.1 A range of potential impacts on intertidal and terrestrial ornithology have been identified which may occur during construction and operation phases of the Proposed Development. These are presented in Table 9-11.

Table 9-11: Scoping Assessment - Intertidal and Terrestrial Ornithology

Activity / Potential Effect	Phase Construction (C) Operation (O)	Scoping Assessment Summary
Barrier to species movement	C, O	Construction and operation activities such as increased vessel activity and above water noise may result in barrier effects on resident VORs. In the case of the Proposed Development, resident red-throated diver are a specific consideration as there is the potential for this species to be impacted as it is possible that the Proposed Development may lie on foraging routes between the sea Loch and important inland breeding areas.
Direct temporary habitat loss / disturbance due to construction	C	Construction activities such as increased vessel activity and above water noise may result in temporary direct disturbance or displacement of birds from important breeding, feeding, and roosting areas, including due to direct habitat loss.
Indirect impacts due to effects on prey species and habitats	C, O	Impacts may result from underwater noise or the generation of suspended sediments that may alter the distribution, physiology or behaviour of bird prey species and thereby have an indirect effect. These mechanisms could potentially result in less prey being available in the area adjacent to active construction works to foraging birds.
Operational disturbance and displacement (i.e., Vessel disturbance)	C, O	Increased vessel presence has the potential to disturb and displace birds from within and around the Proposed Development study area. This will have the potential to reduce the area available to birds for breeding, feeding, or loafing. Vessel activity could also attract (or repel) certain species of birds and affect migrating birds. In the case of the Proposed Development, breeding Schedule 1 raptors such as white-tailed eagle and hen harrier may be of particular importance. This assessment will also cover the potential for permanent habitat loss as construction activities such as the development of the Quay structure and an access track for the Proposed Development may result in permanent habitat loss within the nearshore and terrestrial environments.
Impact of piling [noise causing disturbance] on marine and coastal birds	C	Potential effects may arise due to increased noise and vibration due to pile-driving during the construction phase of the Proposed Development. Additionally, rock removal and dredging also have the potential to result in above water noise.
Visual disturbance	C, O	Visual disturbance to marine and coastal birds may occur due to construction of the Proposed Development and activities associated with capital dredging and maintenance dredging.

Activity / Potential Effect	Phase Construction (C) Operation (O)	Scoping Assessment Summary
Emergence regime changes	C, O	Emergence regime changes relates to the installation of structures that could change the form / profile of an area of seabed or in this case sea loch, resulting in localised hydrodynamic changes. For birds, this could mean a reduction in available intertidal habitat. Potential effects may also arise due to sediment disturbance from a range of construction activities such as piling, rock removal and localised dredging. This can result in a temporary increase in suspended sediment concentrations and associated sediment deposition and has the potential to result in adverse effects on ornithology receptors due to changes to water quality influencing foraging efficiency.

9.8 Proposed Approach to the EIA Report

9.8.1 The intertidal and terrestrial ornithology EIA Chapter will be supported by the following technical annex:

- Intertidal and Terrestrial Ornithology Baseline Technical Report.

9.8.2 Consultation will be held with relevant statutory and non-statutory organisations prior to drafting the Chapter and associated annexes in order to agree upon the approach to assessment.

9.8.3 Baseline Characterisation

9.8.4 The ornithology baseline technical report will present the following information:

- The results of data used to support or characterise the baseline for terrestrial, offshore and intertidal ornithology including site-specific survey data;
- An outline of survey methods and limitations; and
- Species accounts for the most abundant / key species which will include graphical presentation of the distribution within both the intertidal and terrestrial survey areas by season and consideration of likely connectivity and site usage using available data such as flight direction.

9.9 Scoping Questions to Consultees

9.9.1 In relation to the above proposed approach responses to the following questions would be welcomed:

- Q9.1. Are you satisfied with the scope proposed for the intertidal and terrestrial ornithology Chapter of the EIA Report for the Proposed Development? Specifically:
    - Do you agree that the methodology is appropriate to assess the ornithological baseline?
    - Do you agree with the approach to selecting target species?
    - Do you agree that one year of surveys is sufficient to inform the Environmental Impact Assessment?
- Q9.2. Are you satisfied that the proposed intertidal and terrestrial ornithology topic-specific study areas are suitable for the purpose of the EIA Report for the Proposed Development?
- Q9.3. What other data sources or surveys, if any, should be used or referred to in the preparation of the intertidal and terrestrial ornithology chapter of the EIA Report for the Proposed Development?
- Q9.4. What additional guidance and policy should be used to inform the preparation of the intertidal and terrestrial ornithology chapter of the EIA Report for the Proposed Development?
- Q9.5. Are there any other potential effects that you believe could be significant and which you wish to see assessed in the EIA Report for the Proposed Development?

10. Airborne Noise & Vibration

10.1 Introduction

10.1.1 This chapter considers the potential impacts associated with airborne noise and ground-borne vibration arising the Proposed Development at noise sensitive receptors (NSRs). The NSRs considered will comprise residential properties; noise levels at the closest NSRs will be higher than at NSRs more distant, therefore impacts may be evaluated at the closest NSRs only.

10.1.2 Noise and vibration will be generated by construction activities and use of plant during the construction phase of the project. Piling is expected and this is likely to be the primary source of vibration.

10.1.3 During operation, noise will be generated by vessels using the port, loading/unloading of vessels, loading/unloading of materials onto heavy goods vehicles (HGVs), movement of mobile plant around the port and additional road traffic movements. No significant sources of vibration are expected during the operational phase.

10.2 Baseline Description

10.2.1 From a review of maps and aerial imagery, the baseline noise environment is expected to be dominated by noise from natural sources, comprising waves, wind, and bird calls. Road traffic on the A863 is expected to be a lesser contributor to overall noise levels, except at times of high traffic flow or during still weather conditions.

10.2.2 The baseline environment is not expected to comprise any significant source of vibration, and human response to vibration is independent of baseline levels.

10.3 Guidance & Legislation

10.3.2 The following guidance and legislation will inform the noise and vibration assessment:

- **Environmental Protection Act, 1990** - Section 80 of the EPA 1990 provides Local Planning Authorities with powers to serve an abatement notice requiring the abatement of a nuisance or requiring works to be executed to prevent their occurrence.
- **Control of Pollution Act, 1974** – Section 60 of the Control of Pollution Act 1974 provides powers to Local Planning Authority officers to serve an abatement notice in respect of noise nuisance from construction works.
- **National Planning Framework 4 ('NPF4')** - NPF4 is a long-term plan looking to 2045 that guides spatial development, sets out national planning policies, designate national developments and highlight regional spatial priorities and was adopted by the Scottish Ministers on 13 February 2023.
- **Planning Advice Note PAN1/2011: Planning and Noise ('PAN1/2011')** - PAN1/2011 and its accompanying Technical Advice Note (TAN) set out a series of noise issues for planning authorities to consider when making decisions on planning applications.
- **The Highland Council Guidance Note Construction Environmental Management Process for Large Scale Projects** – This guidance requires that a Construction Environmental Management Document is submitted to and approved in writing before development commences.
- **British Standard BS5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites, parts 1 and 2 ('BS5228')** - BS5228 provides a procedure for the

estimation of construction noise and vibration levels and criteria for the assessment of the significance of the predicted effects at sensitive receptors.

- **BS4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound ('BS4142')** - BS4142 describes methods for rating and assessing sound from industrial or commercial premises. The methods detailed in the standard use outdoor sound levels to assess the likely effects on people inside or outside a residential dwelling upon which sound is incident.
- **Design Manual for Roads and Bridges ('DMRB')** - DMRB provides standards and advice regarding the assessment, design, and operation of roads in the UK. DMRB provides screening criteria, by which percentage changes in traffic flow can be related to a predicted change in road traffic noise and vibration. The guidance also provides significance criteria, by which the percentage of people adversely affected by traffic noise can be related to the total noise or vibration level due to road traffic, or the increase over an existing level.

10.4 Proposed Scope of Assessment

Proposed Study Area

10.4.1 The closest NSRs to the Proposed Development lie within approximately 1 km in each direction from the northern and southern-most extents of the three options (A, B and C) currently under consideration. A study area comprising a 1 km buffer around the Proposed Development will therefore be considered for the evaluation of potential noise and vibration impacts.

10.4.2 The closest identified NSRs comprise a single house immediately to the south-east. Approximately 500 m to the north is a cluster of dwellings, and an adjacent planning consent for new houses, which have yet to be constructed. Beyond these closest NSRs are houses to the south-east at Ose and on the western shore of Loch Caroy. The study area and identified NSRs are shown in **Figure 10.1.**

Assessment Methodology

10.4.3 The baseline noise environment will be characterised by undertaking a noise survey. A long-term measurement will be undertaken at a location representative of the closest NSR, with supplementary short-duration measurements at more distant NSRs, if the noise environment is determined to be notably different.

10.4.4 Given the coastal nature of the site and the likely variable levels of wind and wave noise, the long-term measurement will be undertaken for a period of several days to one week and a weather station would be used to identify periods of wet/windy weather. Monitoring will be undertaken in accordance with the requirements of BS4142. The exact scope and approach to the survey would be agreed through direct communication with the Environmental Health Department at The Highland Council.

10.4.5 Noise levels during the construction phase will be predicted for the noisiest 'worst case' stages of works; should details of the actual construction plant and activities not be available, the assessment will consider a likely assemblage of plant/activities. Noise predictions will be undertaken in accordance with BS5228. Evaluation criteria will be derived in accordance with BS5228, with reference to measured baseline noise levels.

10.4.6 Vibration during the construction phase is expected to be associated with piling activities only; BS5228 provides prediction methods for vibration from different piling methods, as well as historical measured data from piling sites. Vibration from piling will be evaluated against BS5228 criteria, making appropriate worstcase assumptions where required.

10.4.7 Blasting may be required for rock removal at locations on land. Blast vibration can be mitigated by appropriate design of charges by a blasting engineer. Should blasting be required, blasts would be designed such that appropriate criteria, as provided in BS5228, are met. This would be formalised within the CEMP.

10.4.8 Noise from operational activities at the Proposed Development will be evaluated in accordance with BS4142. Noise levels associated with the Proposed Development will be predicted, making appropriate worst-case assumptions as appropriate. Evaluation criteria will be derived from measured background noise levels, whereby a rating level of up to 5 dB above the representative background is likely to be indicative of a low impact, depending on the context.

10.4.9 Projected additional road traffic movements will be evaluated against screening criteria provided in DMRB. If these criteria are exceeded a detailed road traffic noise assessment will be undertaken; if the criteria are not exceeded, no further evaluation will be undertaken.

10.4.10 The assessment will consider that all NSRs are of high sensitivity. Where predicted levels meet the derived evaluation criteria (noise and vibration limits), noise and vibration effects will be considered to be not significant. Where predicted levels exceed the evaluation criteria, effects will be considered significant, and mitigation will be specified.

Receptors and Impacts Scoped Out of Assessment

10.4.11 No NSRs have been scoped out of the assessment; all existing residential properties within the study area will be considered. Consented planning applications for residential properties will also be considered.

10.4.12 No significant sources of vibration are expected during the operational phase; therefore, vibration impacts during the operational phase will be scoped out.

10.5 Potential Mitigation

10.5.1 Construction phase noise impacts will be controlled by implementation of a construction environmental management plan (CEMP). The CEMP will specify hours of working during the construction phase, identify the noisiest activities and provide control measures conforming to best practice which will be used to minimise unnecessary noise. The CEMP will also provide methods by which vibration will be controlled.

10.5.2 Where unacceptable noise and vibration impacts are identified in the course of the assessment, alternative methods will be proposed.

10.5.3 Road traffic noise impacts will be controlled through the CEMP, which will provide a traffic management plan, seeking to constrain deliveries outside of the most sensitive times.

10.5.4 During the operational phase, noise will be minimised by a combination of the following methods:

- substituting noisy plant for quieter items;
- enclosing or attenuating noisy items which cannot be substituted;
- limiting the on-times (utilisation) of plant which cannot be substituted or attenuated;
- screening noise, making use of existing topography and constructing barriers and berms; and
- implementing a noise management plan.

10.6 Potential Impacts

10.6.1 Potential noise and vibration impacts are expected to arise during the construction phase, primarily associated with piling works.

10.6.2 During the operational phase, potential noise impacts are expected associated with engine noise from vessels and use of fixed and mobile plant, including reversing alarms.

10.7 Scoping Questions to Consultees

- Q10.1 – Do you agree that the appropriate guidance and legislation has been identified?

- Q10.2 – Do you agree that the study area is appropriate and all NSRs have been identified?
- Q10.3 – Do you agree with the proposed method of baseline characterisation?
- Q10.4 – Do you agree with the proposed method of determining effect significance?

11. Ground Conditions and Land Quality

11.1 Introduction

11.1.1 This chapter describes the proposed approach within the EIA Report to evaluate the potential construction and operational effects on geology, hydrogeology, and soils, as well as those associated with contamination. It provides an overview of the baseline conditions for each of these aspects as relevant to the Proposed Development and presents an assessment of whether these aspects should be scoped into the EIA. It has been prepared by experts from Gavin and Doherty Geosolutions, a specialist geotechnical and geoenvironmental consultancy with offices across the UK and Ireland.

11.1.2 The assessment has been undertaken in accordance with DMRB LA1135 and DMRB LA1046 and following guidance on EIA by NatureScot [7]. The assessment also incorporates aspects of contamination risk assessment best practice as given in BS101758 and CIRIA C5529.

11.1.3 Potential effects are identified by predicting the changes that would be caused by the Proposed Development in relation to the baseline situation. The significance of the effect has been defined using professional judgment to consider the sensitivity of the receiving environment, the potential likelihood or probability of the effect occurring and the magnitude of the potential effect.

11.2 Baseline Description

11.2.1 The appraisal of existing (baseline) conditions for the Proposed Development has involved the collection and interpretation of desk based geotechnical and geoenvironmental information, supplemented by observations from a site walkover undertaken on 25th August 2023.

Geology

11.2.2 Anticipated geological and hydrogeological conditions across the Site were determined from 1:50,000 scale mapping available online from the British Geological Survey (BGS) GeoIndex.

11.2.3 The BGS mapping records show that generally there are no superficial deposits across the Site, although there is localised peat shown in the north. The presence of localised peat, particularly over the north of the Site, was confirmed during the site walkover.

11.2.4 The majority of the Site is underlain by igneous strata of the Skye Lava Group, comprising basalt and microgabbro, with hawaiite and mugearite in localised areas in the north and west of the Site. A northwest to southeast trending dolerite, basalt and tholeiitic basalt dyke from the North Britain Palaeogene Dyke Suite is noted to cross the northwest of the Site.

11.2.5 The review did not identify any geological Sites of Special Scientific Interest (SSSI) or Geological Conservation Review Sites within the Site, with the nearest being An Cleireach, located approximately 3 km to the northeast and designated for its igneous petrology. There are no records of underground or surface mining, or other designated sites of geological value, in the vicinity of the Site.

[5] Design Manual for Roads and Bridges LA113, Road drainage and the water environment, March 2020
[6] Design Manual for Roads and Bridges LA104, Environmental assessment and monitoring,
[7] A Handbook on Environmental Impact Assessment, Scottish Natural Heritage, 5th Edition, 2018
[8] BS 10175:2011+A2:2017 Investigation of potentially contaminated sites
[9] Contaminated land risk assessment - a guide to good practice, CIRIA 2001

Soils

11.2.6 The following details of soils within the Site have been taken from the Scotland's Soils online mapping and the BGS GeoIndex.

11.2.7 The mapping records peaty gleys with dystrophic blanket peat across the majority of the Site, with an area of brown earths derived from basaltic rocks in the south of the Site. This correlates with the BGS data that shows localised areas of peat shown on the BGS mapping in the north of the Site, which was confirmed by observations from the Site walkover.

11.2.8 The Land Capability for Agriculture mapping shows the majority of the Site to comprise Class 6.3 (land capable of use as rough grazings with low quality plants), with a small part of the north of the Site recorded as Class 5.2 (land capable of use as improved grassland, few problems with pasture establishment but may be difficult to maintain).

Peat

11.2.9 BGS published mapping indicates potential peat deposits across the centre of the site, with NatureScot's (formerly SNH) Carbon and Peatland Map (2016) indicating the presence of Class 1 peatland on the edge of the eastern site boundary, with Class 5 peatland widespread across much of the site.

11.2.10 Given the potential for peat deposits across the site, an enhanced phase 1 peat depth survey was undertaken in December 2023. Probing was completed across a 50 m grid within the wider site boundary, and detailed probing across a 25 m grid, within the development infrastructure option areas. The results of which are shown in **Figure 11.1**.

11.2.11 In order to gain additional information on the condition of the underlying peat deposits, peat cores were extracted at two representative locations, and logged in line with the von Post scale of humification.

11.2.12 The results of the survey show that although peat deposits (>0.5 m) are not present across the majority of the Site, there are localised sections of deep peat (>1 m). These deep peat deposits, locally up to 3.6 m thick are generally present within the eastern part of the Site, corresponding with areas of Class 1 peatland, as well as in the centre of the Site, around Camus Mor.

11.2.13 Peat cores show the peat to be generally highly fibrous in the near surface, acrotelmic zone (H1/H2) increasing in decomposition and water content with depth, logged as H3 at 1-2m, with H4 below 2.5m.

Hydrogeology

11.2.14 The superficial deposits across the Site are not granular in nature and therefore are not expected to contain a significant groundwater body.

11.2.15 Groundwater is potentially present in near-surface weathered zones and fractures throughout the igneous bedrock. However, the igneous bedrock that underlies the Site is generally of very low permeability and therefore a significant groundwater body is not considered likely to be present beneath the Site.

11.2.16 THC online mapping data records that no public or private groundwater supplies are present within a 500 m radius of the study area, with the nearest being a spring fed supply at Ose approximately 600 m to the north-east ('PWS 12 Ose', grid reference 131114,842611). There may be unrecorded private water supplies associated with residential properties, however, no private water supplies were observed during the Site walkover, and the owner of Camus Mor confirmed that their property is on the mains supply.

Contamination

11.2.17 Historical maps from the National Library of Scotland online map viewer have been reviewed to assess the available historical information on the former Site use, with supplementary information from the Site walkover.

11.2.18 This has confirmed that the Site has been agricultural in use since the earliest available map from the 1840s through to the 1940s. Although the map records do not cover every intervening time period, considering the location of the Site and the observations from the site walkover, it is unlikely that there have been any potential sources of contamination present on or in the vicinity of the Site that would present a significant risk to human health or the water environment.

11.3 Guidance & Legislation

11.3.2 The relevant legislation and planning guidance considered in the preparation of this chapter are as follows:

- Part 2a of the Environmental Protection Act 1990;
- Planning Advice Note (PAN) 33: Development of Contaminated Land;
- Water Environment and Water Services (Scotland) Act 2003; and
- Nature Conservation (Scotland) Act 2004.

11.4 Proposed Scope of Assessment

Soils

11.4.1 The two main considerations in the assessment of the potential impacts on soils are their sensitivity with respect to agricultural value and their carbon content.

11.4.2 Considering the low agricultural value of the soils, significant impacts on soils with respect to agricultural value are unlikely and will not be considered further.

11.4.3 Peat deposits have been recorded at the Site, consistent with available geological mapping. The construction of the Proposed Development, which will include cutting and other earthworks, has the potential to significantly affect the peat soils and therefore further assessment is proposed. Although peat deposits will be avoided so far as possible through design, should peat soils be affected, an outline Peat Management Plan (PMP) would be prepared.

11.4.4 As a result of the identified potentially significant effects on peat deposits, it is proposed that Soils is 'scoped in' to the assessment.

Geology

11.4.5 SSSIs and GCRs provide statutory protection for the best examples of geological features within the UK and have been reviewed within this Scoping Report. The closest designated SSSI/GCR is approximately 3 km to the north-east of the study area, so potential effects on statutory geological receptors are not considered to be significant.

11.4.6 No underground or surface mines or quarries have been identified in the vicinity of the study area. Additionally, no occurrences of mineral, rock or superficial soil reserves were identified that were deemed to be of high value. Thus, the potential effects on these resources are not considered to be significant.

11.4.7 In the absence of any identified potentially significant effects, it is proposed that Geology is 'scoped out' of the assessment.

Hydrogeology

11.4.8 Groundwater fed private or public water supplies have not been identified in the vicinity of the Site, and a substantial groundwater body is not expected to be present beneath the Site, considering the superficial and solid geology. Thus, the potential effects on groundwater are not considered to be significant.

11.4.9 On this basis, is proposed that Hydrogeology is 'scoped out' of the assessment.

Contamination

11.4.10 Considering the desk-based information available and the observations from the site walkover, the risk of potentially significant contamination within the Site is considered to be low. On this basis, it is proposed that Contamination is 'scoped out' of the assessment.

Assessment Methodology

11.4.11 The impacts associated with Soils (peat) will be undertaken in accordance with DMRB LA104 and following guidance on EIA by NatureScot. This will consider the results of the surveys undertaken to provide further information on the extent, thickness, and nature of the peat soils, and inform the development of a PMP and Peat Slide Risk Assessment (PSRA), as necessary. These technical assessments will include specific details of the proposed mitigations required for potential effects on peat soils.

Receptors and Impacts Scoped Out of Assessment

11.4.12 No significant impacts on geology, hydrogeology and contamination are expected; therefore, it is proposed that these impacts will be scoped out of the assessment.

11.5 Potential Mitigation

11.5.2 The design of mitigations to minimise the effects on peat soils is likely to include intrusive surveys to provide further information on the extent, thickness, and nature of the peat soils, and inform the development of a PMP and PSRA. The surveys will be undertaken in accordance with the following guidance documents:

- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments, Second Edition (Scottish Government, 2017b).
- Guidance on Developments on Peatland, Peatland Survey (Scottish Government, 2017c).
- Development on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Scottish Renewables and SEPA, 2012).

11.5.3 The design and assessment will use the following hierarchy of design principles for prevention and reduction of peat waste:

- Prevent the excavation of peat wherever possible.
- Reduce the volumes of peat that are excavated.
- Reuse excavated peat in a manner to which it is suited.
- Treat the peat to improve its structural integrity for reuse purposes.

11.5.4 Informed by the results of the peat survey work, where the Proposed Development will potentially affect peat soils, a PMP will be developed that will include details on the likely volumes of surplus peat generated and its re-use and preventative mitigation measures to avoid significant drying or oxidation of peat during the construction phase. A draft PMP will be included within the EIAR. Additionally, a PSRA will be undertaken which will provide details on mitigation and consider the risks of landslide to the Proposed Development and provide detail of any necessary specific geotechnical mitigations.

11.5.5 As required, mitigation measures relevant to the excavation, storage and reuse of peat will be detailed in the EIA Report and in the Construction Environmental Management Plan (CEMP), which will be prepared as part of a Construction Licence application to SEPA. The method for the excavation, storage and reuse of peat will be based on the following best practice principles:

- Temporary storage must be safe in so far as it protects the structure and integrity of the excavated peat.
- Peat should be stockpiled in large volumes to protect it from exposure to the elements, with due regard for peat stability considerations.
- Temporary storage locations must be in suitably wet conditions or be irrigated in order to prevent the peat from desiccating.
- Temporary storage areas will be located as close as possible to the sites of excavation and located in areas with lower ecological value and low stability risk.
- All materials utilised for dressing will be imported material excavated in the local area, where such material is available. Care should be taken to ensure that sufficient thickness of material is utilised to prevent desiccation.
- It is possible that surplus peat deposits may be utilised to reinstate other excavations, such as borrow pits, but there are likely to be limits on the maximum depth of peat that are acceptable to place. This would be subject to assessment as part of the PMP.

11.6 Potential Impacts

11.6.1 Given peat deposits have been delineated, and will be avoided so far as is possible, following mitigation there are not expected to be any significant residual impacts, although this will be subject to full assessment as part of the EIA Report in accordance with the methodology described above.

11.7 Scoping Questions to Consultees

- Q11.1 - Do the consultees agree that, subject to further information coming to light from the field surveys, consultation and desk study, the scope of the assessment is appropriate?
- Q11.2 - Do the consultees have any information not outlined in the Scoping report that would inform the impact assessment for soils (and peat)?

12. Coastal Processes and Geomorphology

12.1 Introduction

12.1.1 The coastal processes and geomorphology assessment will consider likely significant effects on marine physical process receptors that may arise from the construction and operation of the Proposed Development. This Section of the Scoping Report provides an overview of the baseline conditions at the Site, the datasets to be used to inform the EIA, the likely significant effects to be considered within the EIA, and how these likely significant effects will be assessed for the purpose of the EIA.

Coastal Processes and Geomorphology is a collective term for the following:

- water levels;
- currents;
- waves (and winds);
- sediments and geology (including seabed sediment distribution and sediment transport);
- seabed geomorphology; and
- coastal geomorphology.

12.1.2 Coastal processes and geomorphology are considered as both receptors and 'pathways' to other receptors as it interfaces with many other assessment topics. For instance, the mobilisation of sediment during the construction phase may result in the creation of suspended sediment plumes. The subsequent settling of material to the bed from such plumes may result in smothering of sensitive benthic habitats which is considered in **Section 8: Marine Ecology**. As such, this chapter should be considered alongside other marine EIA aspects; namely:

- Section 8: Marine Ecology;
- Section 12: Water and Sediment Quality;
- Section 13: Coastal Protection, Flood Defence and Drainage; and
- Section 16: Commercial and Recreational Navigation.

12.1.3 The interlinkages between these aspects and coastal processes and geomorphology are considered within the respective topic chapters.

12.1.4 The study area is the area over which potential direct and indirect effects of the Proposed Development may occur during construction and operation. The direct effects on physical processes are those confined to within the marine footprint of the Proposed Development i.e. the quay and, if required, dredge and disposal of dredge material. Indirect effects are those that may arise due to wider changes in the flow and sedimentary regimes and any changes to the local and / or regional morphology as a result of the Proposed Development.

12.1.5 The study area for the physical processes' topic will be defined through the EIA studies and be sufficient in extent to capture the potential impacts arising from the Proposed Development. At present, the study area is anticipated to include the development footprint and extending a distance of at least one tidal excursion (on both flood and ebb tide).

12.1.6 The physical processes EIA Report chapter will, through further desk-based analysis and assessment (potentially including numerical modelling), refine the study area for the purposes of the impact assessment as necessary.

12.2 Baseline Description

Tide and Water Levels

12.2.1 Ullinish, on the Isle of Skye, is in a region characterised by semi-diurnal tides, with a mean spring range of around 4.2 m and a mean neap range of 1.7 m. **Table 12-1** shows the tide levels at Loch Harport, located 7.2 km southeast of the Site (UKHO Admiralty Tide Tables, 2023).

Table 12-1: Standard Tide Levels for Loch Harport (57°20N, 6°25W)

Reference Still Water Level	mCD	mODN
Highest astronomical tide (HAT)	5.8	3.05
Mean high water springs (MHWS)	5.1	2.35
Mean high water neaps (MHWN)	3.8	0.75
Mean low water neaps (MLWN)	2.1	-0.65
Mean low water springs (MLWS)	0.8	-1.95
Lowest astronomical tide	0.2	-2.55
Mean spring range	4.2 m	
Mean neap range	1.7 m	
Note: Conversion from mCD to mODN at Loch Harport = -2.75 m		

Surge Levels

12.2.2 Current extreme predictions determined by the Environment Agency Coastal Flood Boundary Dataset (Environment Agency, 2018) are considered to be the most up-to-date and appropriate for this study. These are provided in **Table 12-2** using chainage 136_8_M, located around 470 m north of the Proposed Development for a base year of 2017.

Table 12-2: Surge levels

Return Period (Years)	Extreme Water Level (mODN)
t1	3.33
t2	3.43
t5	3.56
t10	3.65
t20	3.74
t25	3.76
t50	3.85
t75	3.90
t100	3.93
t150	3.97
t200	4.00
t250	4.03
t300	4.05
t500	4.09

Return Period (Years)	Extreme Water Level (mODN)
t1000	4.17
t10000	4.35

Currents

12.2.3 Modelled results of the UK continental shelf region from the UK Renewables Atlas (ABPmer, 2008) show mean spring peak flows of around 0.09 m/s and mean neap peak flows of 0.04 m/s at the entrance to Loch Bracadale, which separates the Minginish Peninsula in the South from the Duirinish Peninsula in the north. This comes from cell ID: 26375, 7.5 km south south-west of the Site, shown in Figure 12-1.

12.2.4 The UK Renewables Atlas also shows tidal ellipses around the west coast of the Isle of Skye (Figure 12-1). The nearest tidal ellipse measures a eulerian tidal excursion of around 1.7 km, at a location approximately 13.5 km south south-west of the Site (Figure 12-1). For the EIA, local model output data from the Scottish Shelf Sea model will be assessed to provide detailed hydrodynamic information specific to the Site[10].

Wind and Wave Regime

12.2.5 Winds in the region most frequently come from the south and south-west (accounting for approximately 40% of the record) and slightly less frequently from the west and north-west (25% of the record). Strong winds >16 m/s are seen coming from all directions, but most frequently from between west and south (seastates.net).

12.2.6 The wave climate within the study area is controlled by a combination of the wind regime and the position of the Mingingish and Duirinish Peninsulas, 7.5 km south south-west of the Site, which limit the direction of wave propagation into Loch Bracadale. Waves within the study area are predominantly locally-generated wind waves. The dominant wave direction is from the south-west (>80% of the record), a result of the Peninsulas limiting wave direction (seastates.net). Mean significant wave height (Hs) is around 1.0 m and mean wind speed is approximately 8.5 m/s over the 40-year hindcast period. A set of wind and wave rose plots are provided in **Figure 12.2**.

Sediments and Geology

12.2.7 As a result of fissure volcano eruptions during the Palaeocene and early Eocene (66 Ma to 47 Ma), gently dipping basaltic lavas cover most of northern Skye, including the Site. Basalt is a fine-grained mafic extrusive igneous rock that measures between 4-6.5 on the Mohs hardness scale and has a density of 2.7-3 g/cm^3 (Stephenson and Merritt, 2006).

12.2.8 Regional data regarding the seabed substrate at the Site is limited. EMODnet substrate mapping provides information about the seabed sediments at the tidal inlet, which is shown to be mainly quaternary gravel and sandy gravel deposits (**Figure 12-3**). At the Site, EMODnet shows the seabed as having 'rocky outcrops' (https://emodnet.ec.europa.eu/geoviewer/).

12.2.9 Given the apparent low current speeds near the tidal inlet, it is considered unlikely that the sediment is mobile at the Site.

Seabed Geomorphology

12.2.10 Offshore, towards the Sea of the Hebrides, depth reach a maximum of approximately 130 m below Chart Datum. At the entrance to Loch Bracadale, depths range from 30-60 m. Depth decreases along the approach to Loch Caroy to about 13 m. Depth at all sites options (A, B and C) range between approximately 2-6 m. Bathymetry data at the Site was collected by Aspect Land and Hydrographic

[10] https://marine.gov.scot/themes/scottish-shelf-model

Surveys on 30 March 2022. This data will be applied to inform the baseline characterisation within the EIA.

Coastal Geomorphology

12.2.11 EMODnet defines the coast surrounding the Site as 'Erosion resistant rock and/or cliff, without loose eroded material in the fronting sea'. No beach is present. The shoreline (basalt) is relatively resistant to erosion.

Future Baseline

12.2.12 Mean sea level within the study area is likely to rise over the lifetime of the Proposed Development as a result of climate change. This change is generally accepted to include contributions from global eustatic changes in mean sea level and isostatic changes to land elevation. A rise in sea level could allow larger waves, and therefore more wave energy, to reach the coast in certain conditions and consequently result in changes to local rates or patterns of erosion or sediment transport.

12.3 Guidance & Legislation

12.3.1 This section identifies the relevant legislative and policy context which has informed the scope of the coastal processes and geomorphology assessment. In order to provide an objective evidence base, for which this Chapter seeks to demonstrate compliance, **Table 12-3** presents a summary of legislation and policies of relevance for the coastal processes and geomorphology assessment. This table does not quote policies in full but rather states the relevance of each to the Chapter, in order to demonstrate the accordance of the Proposed Development with these policies.

Table 12-3: Relevant Legislation and Policy

Relevant Legislation and Policy	Relevance to the assessment
Legislation	
The Conservation (Natural Habitats, &c.) Regulations 1994 (and amendments)	The Proposed Development has the potential to interact with marine habitats and species that are listed Annexes I and II of the Habitats Directive/ Potential changes to coastal processes and geomorphology resulting from the Proposed Development, where this could affect the conservation status of such features, will be considered in the coastal processes and geomorphology scoping assessment and EIA.
National Policy	
(National Policy Statemen for Energy Infrastructure (2023)	The National Policy Statement for renewable energy infrastructure (EN-3) and the National Policy Statement for electricity networks infrastructure (EN-5) both make reference to the need for assessment of marine geology, oceanography, and physical processes, including: the impact of the Proposed Development on coastal processes and geomorphology, including by taking account of potential impacts from climate change. If the Proposed

Relevant Legislation and Policy	Relevance to the assessment
	Development will have an impact on coastal processes the Applicant must demonstrate how the impacts will be managed to minimise adverse impacts on other parts of the coast (EN-1); the implications of the Proposed Development on strategies for managing the coast as set out in Shoreline Management Plans, any relevant Marine Plans and capital programmes for maintaining flood and coastal defences (EN-1); the effects of the Proposed Development on marine ecology, biodiversity, and protected sites (EN-1); the effects of the Proposed Development on maintaining coastal recreation sites and features (EN-1); the vulnerability of the Proposed Development to coastal change, taking account of climate change, during the Proposed Development's operational life and any decommissioning period (EN-1); and predictions of the physical effect that will result from the construction and operation of the required infrastructure and include effects such as the scouring that may result from the proposed development (EN3). All of the above will be considered in the coastal processes and geomorphology scoping assessment and EIA, with impacts minimised or mitigated through optioneering and the incorporation of environmental mitigation measures.
National Planning Framework 4 (NPF4) 2023	Policy 4 States development proposals that would have an unacceptable impact on the environment including biodiversity objectives; designated sites, including existing or proposed Special Areas of Conservation (SAC) and Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), National Parks; adverse effects on protected species and affect sites designated as a Local Nature Conservation Site or a Local Landscape Area should not be supported. The potential for changes to coastal processes or geomorphology resulting from the Proposed Development to impact the seabed and coastline in designated sites will be addressed in the EIA
Marine Policy	
Scotland's National Marine Plan (Scottish Government, 2015)	Under devolution, the Scottish Parliament can legislate in relation to activities affecting the marine environment in Scotland's inshore waters, except for reserved matters. The UK Parliament legislates for Scotland's offshore waters, but certain matters in this area have been executively devolved. Marine planning matters in Scotland's inshore waters are governed by the Marine (Scotland) Act 2010, an Act of the Scottish Parliament.

Relevant Legislation and Policy	Relevance to the assessment
Local Development Plans	
West Highland and Islands Local Development Plan (The Highland Council, 2019) and Highland-wide Local Development Plan (HwLDP) (2012)	WestPlan is the third of three new area local development plans that, along with National Planning Framework 4, the Highland-wide Local Development Plan (HwLDP) and Supplementary Guidance form "the development plan" that guides future development in the Highlands. WestPlan focuses on where development should and should not occur in the West Highland and Islands area over the next 20 years. The Plan area comprises Wester Ross, Skye and Lochalsh, Lochaber and a small, mountainous part of Badenoch.

12.4 Proposed Scope of Assessment

Proposed Study Area

12.4.1 The Site boundary is shown by the red line in **Figure 12-4**. The south-west corner of the Site boundary provided by the Applicant overlaps with the Inner Hebrides and the Minches – 10508 Special Area of Consideration (SAC) by roughly 150 m[11]. However, the preferred development site (Option C) does not lie within the SAC, located about 450 m north of the SAC boundary. It is important to note that the Inner Hebrides and the Minches SAC is designated for Harbour Porpoise and whilst not directly relevant to the Coastal Processes and Geomorphology topic, it will be considered within the assessment, since the findings may be relevant to the Marine Ecology topic.

12.4.2 The Site boundary does not overlap with any other designated area.

Assessment Methodology

12.4.3 The methods adopted for the assessment of the coastal processes and geomorphology changes are often slightly different to those adopted for other environmental topics. This is because whilst the Proposed Development has the potential to cause changes to hydrodynamic and sedimentary processes, these changes are often not, in themselves, generally recognised as environmental features/receptors and, therefore, do not equate to 'effects'. The effects would instead be the consequence of these changes on other environmental features. For example, 'changes' in the transport and deposition of sediment may 'effect' the structure of marine habitats and their associated species.

12.4.4 The assessment approach will be defined by the scope of the proposed works and is likely to include desk-based analysis, review of existing data sources and reports and could, potentially, also include application of numerical modelling tools. These approaches will help inform the definition of a conceptual understanding of the system to consider coastal processes, hydrodynamic and sedimentary effects by comparing the baseline and future environmental conditions created by the Proposed Development. This would include predicting the changes to tidal water levels and currents, SSC and erosion and accretion patterns, and waves. Should dredging be required as part of the Proposed Development, the assessment would also allow for the fate of sediment plumes from marine construction and maintenance dredging and disposal activities to be considered.

[11] https://sitelink.nature.scot/map)

Receptors and Impacts Scoped Out of Assessment

12.4.5 Although neither the seabed or the coast are designated for their geomorphological features, it is judged that the coast should be considered a receptor for the coastal process assessment. Due to the uncertainty in the Proposed Development parameters all potential coastal process pathways have been retained for inclusion in the main EIA. This is principally due to the potential for pathway changes to impact on other topic receptors and the requirement for informing those assessments.

12.4.6 At this stage further data collection is not considered necessary.

12.5 Potential Mitigation

12.5.1 Consideration of potential mitigation options will be undertaken during the EIA studies and be informed by the assessed magnitude and extent of any predicted impacts.

12.6 Potential Impacts

12.6.1 The following potential pathways and impacts have been identified:

- Construction
  - Potential changes to suspended sediment concentrations, bed levels and sediment type through piling, dredging and disposal (sediment plumes); and
  - Potential changes to seabed morphology through piling, dredging and disposal.
- Operation
  - Potential changes to tidal regime through interaction of flow with the proposed marine infrastructure / dredge pocket;
  - Potential changes to wave regime through interaction of flow with the proposed marine infrastructure / dredge pocket;
  - Potential changes to sediment transport regime due to changes in the local current and/or wave conditions;
  - Potential changes to seabed and / or coastal morphology due to changes in the sediment transport regime; and
  - Scour around piles.

12.7 Scoping Questions to Consultees

- Q12.1 Do the consultees agree that, subject to further information coming to light from consultation and desk studies, the scope of the assessment is appropriate?
- Q12.2 Do the consultees have any information not outlined in the Scoping report that would inform the impact assessment for coastal processes and geomorphology?

13. Water and Sediment Quality

13.1 Introduction

13.1.1 This chapter considers the potential effects of the construction and operational phases of the Proposed Development on Water and Sediment Quality. Potential for effects on Water and Sediment Quality are identified, and the proposed methodologies for further assessment during the EIA Report are outlined.

13.1.2 Water and Sediment Quality are treated both as direct receptors (where specific quality thresholds such as chemical Environmental Quality Standards (EQS) exist) and as pathways to indirect impact on ecological receptors, e.g., marine fish.

13.1.3 This chapter is structured to include:

- A list of legislation, policy, and guidance specific to the assessment of Water and Sediment Quality effects.
- A definition of the Water and Sediment Quality Scoping Study area.
- The EIA methodology proposed to assess potential Water and Sediment Quality effects, including proposed data sets to be used to inform the topic-specific EIA chapter.
- A preliminary review of the baseline environment relevant to Water and Sediment Quality.
- A section to indicate if any impact pathways are proposed to be scoped out of the assessment.
- A summary of potential mitigation measures to be proposed to reduce the potential for effects relating to Water and Sediment Quality.
- A summary of potential effects on Water and Sediment Quality receptors that are proposed to be assessed in the EIA Report.
- Questions for stakeholders to consider in providing feedback on this chapter.

13.2 Guidance & Legislation

13.2.1 This Section identifies the relevant legislation and policy context for the Water and Sediment Quality assessment. Further information on policies relevant to the EIA and their status is set out in **Chapter 3** which provides a detailed summary of individual international, national, marine, and local planning policies of relevance to this EIA. Therefore, **Chapter 3** should be read in conjunction with this Section.

13.2.2 Legislation, policy, and guidance relevant to Water and Sediment Quality is listed in **Table 13-1** with brief summaries of relevance to the assessment provided.

Table 13-1: Guidance and Legislation Relevant to Water and Sediment Quality

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
Legislation			
The Water Framework Directive (WFD – 2000/60/EC)	Framework for the management and protection of Europe's water resources and provides an assessment of condition of water bodies.	European Commission 200. Available at: https://environment.ec.europa.eu/topics/water/water-framework-directive_en	Europe
Bathing Waters Directive (76/160/EEC)	Sets out a range of parameters, including coliform levels and physico-chemical parameters, for compliance of designated bathing waters.	The Bathing Waters (Scotland) Regulations 2008. Available at: https://www.legislation.gov.uk/ssi/2008/170/contents/made	Europe
Marine Strategy Framework Directive	Requires member states to put in place measures to achieve and maintain good environmental status in their waters.	EU Marine Strategy Framework Directive. Available at: https://research-and-innovation.ec.europa.eu/research-area/environment/oceans-and-seas/eu-marine-strategy-framework-directive_en	Europe
The International Convention for the Prevention of Pollution from Ships (MARPOL)	Prevents and minimises marine pollution from vessels.	International Maritime Organisation (IMO). International Convention for the Prevention of Pollution from Ships (MARPOL). Available at: https://www.imo.org/en/about/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx	International
Marine and Coastal Access Act 2009	Establishes provisions for the management and protection of the marine environment.	The Marine and Coastal Access Act 2009 (C. 23). [Online]. Available at: https://www.legislation.gov.uk/ukpga/2009/23/data.pdf	National (UK)
Conservation of Habitats and Species Regulations 2017	Make the provision for the selection, designation, registration, and notification of sites to be protected under European Directive 92/43/EEC on the conservation of natural	The Conservation of Habitats and Species Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made	National (UK)

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	habitats and of wild fauna and flora (the 'Habitats Directive').		
Marine Policy Statement (2011) as amended by 'Guidance to the UK Marine Policy Statement from 1 January 2021'	The Marine Policy Statement (MPS) is the framework for preparing Marine Plans and taking decisions affecting the marine environment. It will contribute to the achievement of sustainable development in the United Kingdom marine area, ensuring that marine resources are used in a sustainable way in line with the high-level marine objectives.	UK marine policy statement. Available at: https://www.gov.uk/government/publications/uk-marine-policy-statement	National (UK)
The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017	Establishes the requirement for EIA in relation to marine licensing in Scotland.	Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017. [Online]. Available at: https://www.legislation.gov.uk/ssi/2017/115/regulation/1/made	National (Scotland)
Marine (Scotland) Act (2010)	Defines the requirement for marine licences in Scottish waters which includes the "construction of any works in or over the sea, and on or under the seabed" and the carrying "out of any form of dredging within the Scottish marine area (whether or not involving the removal of any material from the sea or seabed)". The application for a licence must have regard to the need to protect the environment, protect human health, prevent	The Marine (Scotland) Act 2010. [Online]. Available at: https://www.legislation.gov.uk/asp/2010/5/data.pdf	National (Scotland)

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	interference with legitimate uses of the sea and other matters considered relevant by Scottish Ministers.		
Water Environment and Water Services (Scotland) Act 2003 (WEWS Act)	Transposes the WFD in Scotland. Commits Scotland to achieve good qualitative and quantitative status of all water bodies by 2015 with the final deadline for meeting objectives being 2027. River basins comprise all transitional waters (estuaries) and coastal waters extending to 3 nautical miles (nm) seaward from the territorial baseline. Any proposed development within 3 nm must have regard to the requirements of the WFD to ensure that all transitional and coastal water bodies achieve 'Good Ecological Status' and that there is no deterioration in status.	Water Environment and Water Services (Scotland) Act 2003. Available at: https://www.legislation.gov.uk/asp/2003/3/contents	National (Scotland)
Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)	The Controlled Activities Regulations 2011 (CARs) (and it's amendments in 2013 and 2017) apply regulatory controls over activities which may affect Scotland's water environment. The regulations cover rivers, lochs, transitional waters (estuaries), coastal waters, groundwater, and groundwater dependent wetlands.	The Water Environment (Controlled Activities) (Scotland) Regulations 2011. Available at: https://www.legislation.gov.uk/ssi/2011/209/contents/made	National (Scotland)
The Marine Strategy Regulations 2010 (as amended)	The MSFD 2008 (Directive 2008/56/EC) was transposed into UK	The Marine Strategy Regulations 2010. Available at:	National (Scotland)

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
	law in 2010 through the Marine Strategy Regulations 2010. This establishes a framework for community action in the field of marine environmental policy and aims to achieve Good Environmental Status (GES) in UK marine waters by 2020.	https://www.legislation.gov.uk/uksi/2010/1627/contents/made	
Water Environment (Shellfish Water Protected Areas: Environmental Objectives etc.) (Scotland) Regulations 2013 (as amended)	The Shellfish Waters Directive was repealed in 2013 and was replaced by this legislation in 2013. The objectives of this regulation are to prevent the deterioration of water quality within a shellfish water protected area and protect and improve each protected area to achieve good water quality by 2015. In order to help achieve this these regulations also put in place a monitoring and measures programmes for each shellfish water.	The Water Environment (Shellfish Water Protected Areas: Environmental Objectives etc.) (Scotland) Regulations 2013. Available at: https://www.legislation.gov.uk/ssi/2013/325/contents/made	National (Scotland)
Bathing Waters (Scotland) Amendment Regulations 2012	Previously designated under the Bathing Water Directive (76/160/EEC), these waters are now covered by the revised Bathing Water Directive (2006/7/EC) which are transposed into Scottish law through the Bathing Waters (Scotland) Amendment Regulations 2012.	The Bathing Waters (Scotland) Amendment Regulations 2012. Available at: https://www.legislation.gov.uk/ssi/2012/243/contents/made	National (Scotland)
Guidance			

Guidance / Legislation	Relevance to the assessment	Reference	Geographic Coverage
Marine Scotland Action Levels for the disposal of dredged material	Defines guideline Action Levels for the disposal of dredged material.	Marine Scotland. Pre-disposal Sampling Guidance 2017. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2020/02/marine-licensing-applications-and-guidance/documents/guidance/pre-disposal-sampling-guidance/pre-disposal-sampling-guidance/govscot%3Adocument/Pre-disposal%2Bsampling%2Bguidance.pdf	National (Scotland)

13.3 Proposed Scope of Assessment

Proposed Study Area

13.3.1 The Water and Sediment Quality EIA Scoping Study Area comprises the Proposed Development and in the absence of coastal processes modelling outputs to confirm tidal movement extents, a precautionary 15 km buffer (**Figure 13-1**). For the purposes of the EIA Report the Water and Sediment Quality study area will be confirmed following results of coastal processes modelling (it will be delineated as one tidal excursion from the Proposed Development).

Assessment Methodology

Proposed Surveys

13.3.2 No site-specific Water and Sediment Quality surveys have been proposed, however site-specific information from benthic surveys will be utilised to characterise the likely sediment characteristics of the area (see **Table 8-2** for details).

Ecological Impact Assessment

13.3.3 The assessment of potential impacts on Water and Sediment Quality during the constructionand operational phases of the Proposed Development will follow the approach outlined in **Section 8.3**. The approach will be based on consideration of impact magnitude and value/sensitivity of the receptor, to determine the significance of each impact.

13.4 Baseline Description

13.4.1 To inform this EIA Scoping Report chapter, a high-level desk-based assessment has been conducted which has identified the following existing Water and Sediment Quality data (**Table 13-2**).

Table 13-2: Key Sources of Marine and Water Quality Data

Source	Summary	Coverage
SEPA	Various reports and data sets on bathing waters, shellfish protected	Full

Source	Summary	Coverage
	areas and designated waterbodies. Summary information only available online.	
Cefas Scottish Sanitary Project	Sanitary survey report for Loch Harport.	Partial (Loch Harport)

13.4.2 Where access to available data for Water and Sediment Quality is limited, data requests have been identified for inclusion in the EIA Report. Some of the key data requests to be submitted are indicated in **Table 13-3**.

Table 13-3: Key Sources of Water and Sediment Quality Data Requests

Source	Summary	Receptors	Coverage
SEPA	Water quality Data at Loch Caroy Mussel site (135312 - NGR 30600 42500)	Water Quality	Partial
SEPA	Further to above – any routine or ad hoc water quality data collected from the study area.	Water Quality	Unknown

Overview

13.4.3 The Proposed Development is located within Loch Caroy, which is part of the larger (48.8 km2) Loch Bracadale coastal water body (Error! Reference source not found.). Loch Bracadale is a sea loch on the west coast of Skye, separating the Minginish Peninsula in the south from the Duirinish Peninsula in the north; Loch Caroy can be regarded as one of its inner lochs. The mouth of Loch Bracadale is approximately 6 km wide, and the Loch is very exposed to the Atlantic.

13.4.4 There are 4 small, unnamed watercourses within the Site boundary. These watercourses all run east-west towards the sea. The main freshwater inputs in the vicinity are from the Rivers Caroy (located 1 km from the Proposed Development) and Ose (1.2 km from the Proposed Development); there is an additional (unnamed) stream 0.5 km from the Proposed Development. The River Caroy and River Ose are relatively small tributary rivers, 7.3 km, and 11.6 km long, respectively (SEPA, 2023a). The land around the Proposed Development consists mostly of grassland, with few houses and no known discharges (DataShine Scotland, 2011; Scottish Government, 2019).

Designated Water Bodies

13.4.5 The Proposed Development is located within Loch Bracadale coastal water body (200357) (**Figure 13.2Error! Reference source not found.**), which is 48.8 km2 in area and has been classified as having 'High' WFD status for water quality and physicochemical (Dissolved Oxygen (DO) and Dissolved Inorganic Nitrogen (DIN)) from 2014 to 2020, with an overall 'High' status from 2014 to 2020 (SEPA, 2023a). Additionally, Loch Bracadale received a 'Pass' for unionised ammonia and specific pollutants from 2008 to 2020 (**Table 13-4**).

13.4.6 Loch Harport coastal water body (200121) is located 5 km south-east of the Proposed Development (**Figure 13.2**) (SEPA, 2023a). Loch Harport is 8.8 km2 in area and has been assigned 'Good' status for water quality from 2014 to 2020, with an overall 'Good' status from 2014 to 2020. The River's Ose (20725) and Caroy (20726) have received overall 'Good' status from 2007 to 2020 (SEPA, 2023a).

Table 13-4: Loch Bracadale Coastal Waterbody 2020 Classification

Parameter	Status
Overall Status	High
Pre-HMWB Status	High
Overall ecology	High
Physico-Chem	High
Dissolved Oxygen	High
Dissolved Inorganic Nitrogen	High
Biological elements	High
Invertebrate animals	High
Benthic Invertebrates	High
Phytoplankton	High
Specific Pollutants	Pass
Unionised ammonia	Pass
Hydromorphology	High
Morphology	High
Water quality	High

Bathing Waters

13.4.7 No designated bathing waters are present within the vicinity of the Proposed Development (SEPA, 2023b).

Shellfish Waters

13.4.8 The Proposed Development overlaps with Loch Caroy Designated Shellfish Waters Protected Area (SWPA) (**Figure 13.2**). Loch Caroy SWPA was classified as having 'Fair' status in 2016, 'Good' status in 2018 and 'Excellent' status in 2018 under the revised Shellfish Framework SWPA classification (SEPA, 2023c).

13.4.9 Loch Harport SWPA is located 5 km south-east of the Proposed Development and is designated as a production area for Pacific oysters (Crassostrea gigas) (Cefas, 2011; SEPA, 2023c). Loch Harport SWPA was assigned 'Fair' status in 2018 and 'Good' status in 2018 under the revised Shellfish Framework SWPA classification (SEPA, 2023c).

Other Designated Areas

13.4.10 The Proposed Development overlaps with the Inner Hebrides and the Minches SAC, which is designated for harbour porpoise Phocoena phocoena (NatureScot, 2020), (**Section 7.2.2Error! Reference source not found.**). Water and Sediment Quality could be an impact pathway that affects harbour porpoise. The Ascrib, Isay and Dunvegan SAC is located 8.5 km north-west of the Proposed Development and is designated for harbour seal Phoca vitulina. It is considered unlikely that Water and Sediment Quality changes would have an effect on features of these SACs, and this will be considered further during the EIA process.

13.5 Effects Scoped Out of Assessment

13.5.1 No specific effects associated with impact pathways for Water and Sediment Quality have been scoped out of the EIA assessment process at this stage.

13.6 Potential Mitigation

13.6.1 Mitigation measures relevant to Sediment and Water Quality are described in **Table 13-5** below. Mitigation measures are subject to further environmental assessment, scheme development and stakeholder engagement/consultation. The requirement for other embedded environmental measures and additional mitigation methods will be considered as the EIA progresses.

Table 13-5: Potential Mitigation Measures Relevant to Water and Sediment Quality

Potential effect	Approach to mitigation measures
Accidental spillage of hazardous materials	All hazardous materials will be required to be stored and managed in accordance with best practice guidance. The likelihood of accidental pollution events occurring will be reduced through the implementation of a CEMP (embedded mitigation). To further minimise the risk of accidental spillage of hazardous materials, regulations that implement the International Convention for the Prevention of Pollution from Ships (MARPOL) and its various annexes and protocols will be followed.
Generation of pollution (e.g. silt laden runoff) as a result of inappropriate construction phase practices	All construction activities will be undertaken using Guidance for Pollution Prevention (GPP) principles GPPs available at: https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/

13.7 Potential Impacts

13.7.1 A range of Water and Sediment Quality impact pathways have been identified which may occur during the construction and operation phases of the Proposed Development. These are presented in **Table 13-6.** The implications of these changes in Water and Sediment Quality on receptor groups will be assessed within the respective chapters.

Table 13-6: Scoping Assessment – Sediment and Water Quality

Activity / Potential effect	Phase Construction (C) Operation (O)	Scoping Assessment Summary
Accidental pollution	C, O	Potential water quality effects may arise from accidental pollution events associated with vessels. Accidental pollution events are inherently difficult to characterise, however likelihood is considered low and pollutant contaminants would be expected to be subject to rapid dilution, weathering, and dispersion in the Loch.
Remobilisation of contaminated sediments	C	Potential effects may arise due to sediment disturbance from a range of construction activities such as piling, rock removal and dredging. This could potentially lead to the release of sediment contaminants which would impact water quality. The risk of elevated contaminant concentrations in sediments is considered likely to be low given absence of any current or legacy industry in the area.
Siltation rate changes including increased sediment suspension, turbidity, and settlement.	C	Potential effects may arise due to sediment disturbance from a range of construction activities such as piling, rock removal and dredging. This may impact upon water and sediment quality via a temporary increase in suspended sediment concentration and associated sediment deposition.
Alteration of water and sediment circulation arising from changes in physical processes	O	The presence of infrastructure may introduce localised changes to the tidal flow and wave climate; however, impacts are expected to be limited due to the small footprint of the infrastructure for the Proposed Development.

13.8 Scoping Questions to Consultees

- Q13.1 Are you satisfied with the scope proposed for the Water and Sediment Quality Chapter of the EIA Report for the Proposed Development?
- Q13.2. Are you satisfied that the proposed Water and Sediment Quality study area is suitable for the purpose of the EIA Report for the Proposed Development?
- Q13.3. What other data sources or surveys, if any, should be used or referred to in the preparation of the Water and Sediment Quality chapter of the EIA Report for the Proposed Development?
- Q13.4. What additional guidance and policy should be used to inform the preparation of the Water and Sediment Quality of the EIA Report for the Proposed Development?
- Q13.5. Are there any other potential effects that you believe could be significant and which you wish to see assessed in the Water and Sediment Quality chapter of the EIA Report for the Proposed Development?

14. Flood Risk, Drainage & Coastal Protection

14.1 Introduction

14.1.1 This chapter considers the issues related to flood risk, drainage, and coastal protection of the Site.

14.2 Baseline Description

14.2.1 A desk-based study has been undertaken to provide an initial understanding of the baseline environment.

14.2.2 Watercourse and Water Bodies

14.2.3 The Site is currently crossed by three unnamed watercourses, all of which drain catchments with areas less than 3 km2. These three unnamed watercourses flow in a generally westerly direction discharging into Loch Caroy.

14.2.4 The coastal waters at the Site are classified by the Scottish Environment Protection Agency (SEPA) under the Loch Bracadale coastal water body (ID: 200357), in which Loch Caroy is located, is considered to be of High status (SEPA, 2020).

14.2.5 Flood Risk

14.2.6 The Site is potentially affected by the following sources of flooding:

- Watercourse (fluvial flooding) in which excessive rainfall (or snow melt) exceeds the capacity of the watercourse. This can also occur as a result of a blockage of a structure crossing the watercourse such as a bridge or culvert.
- Pluvial flooding (or surface water flooding) which occurs when rainwater ponds or flows over the ground before it enters a natural or man-made drainage systems. It can also occur when drainage systems are at full capacity.
- Coastal flooding which results from combinations of high tide, storm surge and wave activity raising the level of the sea above the adjacent land.
- Groundwater flooding which occurs when the water table rises above ground level. In Scotland this is most commonly associated with the movement of water through sands and gravels, often connected to the rise and fall of river levels.
- Sewer flooding which occurs when sewerage infrastructure has to deal with flows beyond its design capacity. This usually occurs as a result of high intensity rainfall events.

14.2.7 A review of SEPA's online Strategic Indicative Flood Maps shows that there are no areas of fluvial or pluvial (surface water) flooding within the Site boundary (SEPA, 2023). However, as stated above there are three unnamed, minor watercourses which are present within the Site boundary. The fluvial flood extents of these watercourses have not been mapped by SEPA owing to their catchment areas being below the 3 km2 threshold used for their Strategic Indicative Flood Maps.

14.2.8 SEPA's online Strategic Indicative Flood Maps for coastal flooding indicate that this source of flooding does not pose a significant risk to the Site, even for the mapped climate change scenario for the 0.5% annual exceedance probability (i.e. the 1 in 200-year return period) flood for the 2080s epoch (SEPA, 2023).

14.2.9 The underlying soil type for the Site is peaty gleys (Scottish Government, 2023). Peaty gleys soils are generally wet soils that have poor drainage. From the limited information available, groundwater flooding is unlikely to be a significant issue at the Site.

There is one property on the Site. This property is not connected to the sewerage system, hence flooding from sewers is not currently an issue for the Site.

14.2.10 Coastal Protection

14.2.11 The Site is not protected from coastal erosion. Mapping from the Dynamic Coast project show the anticipated position of the UK's shorelines for each decade to 2100, driven by the extra sea level rise expected (Dynamic Coast, 2023). The Dynamic Coast national-scale mapping does not indicate that there will be any significant coastal erosion at the Site up to the year 2100 (Dynamic Coast, 2023). However, it is important to note that coastal erosion events are complex and difficult to predict, and operate at a small spatial scale, so hence these national-scale maps cannot be used to inform detailed site level assessments.

14.3 Guidance & Legislation

Scottish Planning Policy and Legislation Related to Flood Risk

14.3.1 The Flood Risk Management (Scotland) Act 2009 established a framework for the assessment and sustainable management of flood risk with the aim of reducing the adverse consequences of flooding from all sources.

14.3.2 The National Planning Framework 4 (NPF4) covers the policies relating to flood risk in Scotland. Policy 10 of the NPF4 states that 'Development proposals in undeveloped coastal areas will only be supported where they:

- are necessary to support the blue economy, net zero emissions or to contribute to the economy or wellbeing of communities whose livelihood depend on marine or coastal activities, or is for essential infrastructure, where there is a specific locational need and no other suitable site;
- do not result in the need for further coastal protection measures taking into account future sea level change; or increase the risk to people of coastal flooding or coastal erosion, including through the loss of natural coastal defences including dune systems; and
- are anticipated to be supportable in the long-term, taking into account projected climate change; or
- are designed to have a very short lifespan'. (Scottish Government, 2023b)

14.3.3 The overarching policy intent with regards to flood risk and water management of NPF4 is 'to strengthen resilience to flood risk by promoting avoidance as a first principle and reducing the vulnerability of existing and future development to flooding' (Scottish Government, 2023b).

14.3.4 NPF4 states that 'Development proposals will:

- not increase the risk of surface water flooding to others, or itself be at risk;
- manage all rain and surface water through sustainable urban drainage systems (SUDS), which should form part of and integrate with proposed and existing blue-green infrastructure. All proposals should presume no surface water connection to the combined sewer; and seek to minimise the area of **impermeable** surface'. (Scottish Government, 2023b).

Regulations Related to the Culverting of Watercourses

14.3.5 The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) define culverting of a watercourse as a controlled activity. As such, authorisation must be obtained from SEPA for all culverting works. Under Regulation 5 of CAR, it is the duty of those carrying out a controlled activity

to 'secure efficient and sustainable water use' (SEPA, 2015). However, it should be noted that closed culverts for crossing watercourses can 'normally only be justified for single track roads over small watercourses (<2m in width). For all other crossings, the use of span bridges and bottomless arch structures should be pursued, where practicable' (SEPA, 2015).

14.4 Proposed Scope of Assessment

Proposed Study Area

14.4.1 The study area will include the whole area within the Site boundary plus the catchment area of any unnamed watercourse if it extends outside this boundary.

Assessment Methodology

14.4.2 The SEPA Strategic Indicative Flood Maps show that that the Proposed Development is not at risk from fluvial, pluvial, and coastal flooding. However, although the SEPA Strategic Indicative Flood Maps provide a good indicator of whether a Flood Risk Assessment (FRA) is required, the Proposed Development options are immediately adjacent to smaller watercourses draining catchments smaller than 3 km2, and which have not modelled and mapped by SEPA. In addition, the Proposed Development is likely to require an FRA to describe how pluvial (surface water) flooding of the Site will be mitigated. In addition, the FRA will need to demonstrate how surface water, which is not collected at source for re-use, will be managed from the Proposed Developments prior to discharging it to the environment (e.g., via the implementation of Sustainable Drainage Systems (SuDS)).

14.4.3 An FRA would investigate the likely probability of flooding at the Proposed Development from all sources. An FRA would assess factors such as the source and type of potential flood, flood depths, extent, speeds, flow pathways across the Proposed Development, and details of structures which may influence Site hydraulics (e.g., bridges or culverts crossing any watercourses). The FRA should also detail flood mitigation options. The FRA can range from basic information such as a topographic survey and photographs to detailed hydrological and/or hydraulic modelling. It may be necessary to carry out detailed hydrological and hydraulic modelling for the unnamed watercourses which could potentially affect the Proposed Development, as well as for pluvial (surface water) flooding. The FRA would be used to inform the layout, scale, and design of the Proposed Development and to demonstrate the planned mitigations address flood risk.

Receptors and Impacts Scoped Out of Assessment

14.4.4 No receptors or impacts with respect to flood risk or coastal protection can be scoped out of the assessment at this stage.

14.5 Potential Mitigation

Construction Phase Mitigation

14.5.1 Where reasonably practicable a 50 m buffer should be implemented around all the watercourses considered to have a continuous flow in them throughout the year. Where it is not possible to maintain a 50 m buffer e.g., where a watercourse will require to be crossed, these works will be regulated under the Controlled Activities Regulations (CAR) licensing regime and necessary licences will be sought from SEPA prior to construction works. It should be noted that the discharge of run-off from a construction Site to the water environment must be authorised by SEPA.

14.5.2 A Construction Environmental Management Plan (CEMP) will include an outline drainage strategy and details of pollution control measures which will be implemented in accordance with the SEPA's guidance. This will include, but is not limited to:

- A contact list for emergency services, the relevant environmental regulators, the local water supply and sewerage undertakers, the Health and Safety Executive and specialist clean up contractors.
- Requirement for the induction of contractors to include a specific session on good practice to control water pollution from construction activities. The responsibility for protecting the water environment will be shared with all staff on the Site with an appropriate level of support from construction managers to achieve this.
- A Construction Method Statement which will detail how surface water arising during construction will be dealt with. This method statement will take into consideration site-specific ground conditions and will be undertaken in consultation with the Highland Council, NatureScot and SEPA.
- Abidance by the best practice outlined in the Pollution Prevention Guidelines (PPGs), the Guidance for Pollution Prevention (GPPs) and Controlled Activities Regulations (CAR) Regulations.

Operational Phase Mitigation

14.5.3 Measures such as Sustainable Drainage Systems (SuDS) will be proposed to control and mitigate runoff from the Site, as well as mitigate flood risk and pollution. Any culverts which are to be constructed over watercourses will conform to SEPA's 'Detailed Guidance on Good Practice for Culverts and Other Crossing Structures' (SEPA, 2015).

14.6 Potential Impacts

Potential Impacts During Construction

14.6.1 Potential impacts that may arise owing to construction of the Proposed Development include:

- changes to natural drainage patterns due to construction activities;
- increased erosion of soils;
- increase in flood risk;
- changes in groundwater levels from dewatering excavations;
- disturbance of watercourses' bed and banks from the construction of culverts;
- poor management of surface water run-off; and
- pollution of watercourses.

14.6.2 With the implementation of the mitigation described in **Section 14.5** it is anticipated that there will be no significant effects arising owing to changes to natural drainage patterns, poor management of surface water runoff and pollution of watercourses.

Potential Impacts During Operation

14.6.3 The potential impacts that may arise during the operation of the Proposed Development include:

- increased runoff rates and flood risk, resulting from increases in the impermeable area of the Site as a result of access tracks and hardstanding;
- pollution impacts on surface water quality from maintenance work;
- increase in flood risk; and
- changes to groundwater levels and groundwater movement.

14.7 Scoping Questions to Consultees

- Q14.1 Are there any records (e.g. photos, measurements, anecdotal reports) of the Site flooding from any of the following sources: the unnamed watercourses which cross the Site; the sea; surface water; or groundwater?
- Q14.2 Does SEPA require a Flood Risk Assessment to be carried out for the Site?
- Q14.3 Have there been any reports of coastal erosion at the Site?
- Q14.4 The EIA will include measures that would be used to control the rate and quality of runoff rather than a detailed drainage design, is this acceptable?

15. Socio Economics

15.1 Introduction

15.1.1 This section of the Scoping Report considers the potential socio economic effects of the Proposed Development arising during construction and operation and maintenance phases.

15.1.2 This section provides a brief introduction of potential socio economic effects of the construction and operation of the Proposed Development. This includes a consideration of employment and Gross Value Added (GVA) generation and any indirect supply chain economic effects from the Proposed Development.

15.1.3 The assessment will include a description of the current socio economic baseline within the local area. This will include a summary of economic performance data for each study area.

15.2 Baseline Description

15.2.1 The baseline environment will cover and compare three study areas:

- Local Area, comprising the electoral ward of Eilean a' Cheò that covers the location of the development and nearest settlements (for instance Struan, Balmeanach, Ose, Ebost and Ullinish);
- The Highland Council (the local authority); and
- Scotland.

15.2.2 The economic impacts will be quantified and presented for Eilean a' Cheò, THC and Scotland study areas.

15.2.3 The baseline study will cover:

- The demographic profile of the local area within the context of the local, regional, and national demographic trends;
- Employment and economic activity in the local area within the context of local, regional, and national economies;
- The industrial structure of the local area within the context of local, regional, and national economies;
- An analysis of tourism statistics in Scotland, THC, and the local area, drawn from the latest Isle of Skye Visitor Survey and Economic Impact Report (Skye Connect, 2019);
- Wage and salary levels within the regional economy compared to the national level; also including educational attainment levels within the regional area and compared to the national level; and
- An assessment of relative deprivation based on a review of the Scottish Index of Multiple Deprivation (Scottish Government, 2020), over the period from 2004, through to 2020, to show how the local area has changed over time, compared to the national level.

15.3 Guidance & Legislation

15.3.1 There is no established guidance for conducting a socio economic assessment as part of the EIA process. It is therefore proposed that the assessment uses desk-based information sources to assess the likely scale of effects, supplemented by consultation with local stakeholders, informed by

professional judgement. Cross-reference would be made to other technical assessments to consider potential effects on recreational and land-use assets and other leisure and tourism attractions in the vicinity.

15.3.2 Socio economic effects will be considered based on the guidance from Environmental Impact Assessment Handbook (NatureScot, 2018). A range of existing surveys and assessments of socio economic and visitor profiles, land use and ownership, and public attitudes will be collated to provide background information against which to assess the potential for significant effects.

15.3.3 Socio economic impacts associated with onshore wind farms, and associated works including port infrastructure, primarily relate to job creation, use of local services and income spent in the locality of a project, and community benefit. These impacts can have both short and long term, direct beneficial effects for surrounding local communities.

15.3.4 This aspect will be completed in line with National Planning Framework 4 (NPF4) (Scottish Government, 2023) policy on energy developments, which states at Policy 11c "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."

15.3.5 As noted above a desktop socio economic assessment will consider the potential direct and indirect effects of the Proposed Development, during both construction and operation phases. During the construction of the Proposed Development, local sourcing will be preferred where possible, bringing direct economic benefits from the Proposed Development. Similarly, operational jobs will inherently be targeted at people residing close to the Proposed Development, either local people or people relocating to the area for these job opportunities. An estimate of economic benefits will be provided in the EIA Report.

15.3.6 A cumulative assessment will also be presented, and this will take into account other similar renewable and infrastructure projects ongoing or planned in the local area. This will assess the cumulative impact of such investments, including the Proposed Development.

15.3.7 The Applicant is committed to implementing accepted good practice measures during construction and operation, thereby ensuring that many potential adverse social and economic effects can be avoided or reduced. Possible mitigation measures may include the following:

- The scheduling of port movements, into the port and out of the port, and associated movements of materials associated with the Proposed Development.
- The programming of the transportation of abnormal loads wherever practicable to avoid peak visitor, or other busy periods to mitigate the effect of the Proposed Development on particularly sensitive locations, tourist/visitor viewpoints, and road corridors.
- Local sourcing of construction materials where possible to reduce the import and export of materials to and from the port, limiting traffic movements on the surrounding road network and hence minimising related adverse effects upon visitors and locals.

15.3.8 It is considered that there are opportunities to enhance positive effects resulting from the Proposed Development, including:

- Local promotion of contract and supply chain opportunities during construction and operation to maximise the use of local business and labour.
- Skills development and training programmes to increase local take up of training, apprenticeship and employment opportunities associated with the Proposed Development.
- Establishing effective linkages with local job centres, employability programmes and partners.

- Promotion of the wider area and its opportunities as part of the marketing of the Proposed Development.

15.3.9 It is also important that the socio economic assessment takes account of the relevant local and national policy objectives. The most relevant objectives for this are expected to be included in the following strategies:

- National Strategy for Economic Transformation (Scottish Government, 2022);
- National Planning Framework 4 (Scottish Government, 2023);
- Net Economic Benefits and Planning (Scottish Government, 2016);
- Onshore Wind Sector Deal (Scottish Government, 2023);
- Draft Energy Strategy and Just Transition Plan (Scottish Government, 2023);
- An Action Plan for Economic Development in Highland (Highland Council, 2012);
- Inverness and Highland City-Region Deal (Highland Council, 2016);
- The Skye and Raasay Future Plan (The Highland Council, 2021); and
- Isle of Skye and Isle of Raasay Tourism Economic Impact (Skye Connect, 2019).

These policy documents would also allow for the relevant baseline to be collected.

15.4 Proposed Scope of Assessment

In terms of construction related effects, these will be based on dialogue with the Applicant, their technical consultants as well as drawing on the economic consultant's own knowledge from other harbour developments in Scotland.

15.4.1 Where required we will draw on case study evidence from other harbour specific research on the economic benefits of ports and harbour infrastructure. 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 (Scottish Government, 2021). 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.

15.4.2 In terms of operational effects, employment levels will be provided by the Applicant, and backed up with evidenced by the consultant's own modelling and assumptions. The employment impacts associated with the mature operation phase will be presented by occupation type. In order to calculate the economic effect of new jobs, the GVA per head for civil professional, scientific and technical work in the Highlands and Scotland will be utilised. These figures are also drawn from the Scottish Annual Business Statistics and the resultant economic impact will be presented at the Highland and Scotland levels.

15.4.3 As noted in the construction phase, economic impact assessments must also consider the effects of displacement. For the Proposed Development, displacement levels are not expected to be as significant as the construction related activity and it is assumed that displacement would be low during the operation and maintenance at both the regional and national 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).

15.4.4 In addition to the stated economic opportunities at the construction and operational phases, there is also a variety of wider economic impacts which are excluded from the construction and operational economic impact assessment. The wider impacts which should also be noted as having positive effects on the regional and national economies include:

- Supporting national, regional, and local policy objectives;
- Local supply chain opportunities;
- Pre-development costs, such as consultancy fees and legal costs;
- Exchequer impacts;
- Perception benefits, promoting the area as a place to work and invest; and
- Community benefits, linked to the community benefit commitment made by the Applicant within the EIA and typically referenced in a successful planning application.

15.5 Assessment Methodology

The issues that will be considered in this assessment will include the potential socio economic effects associated with the Proposed Development.

15.5.1 A socio-economic impact analysis will be undertaken using the methodology developed by MKA Economics, which has been used to assess a range of harbours and ports in the Highlands and north-east of Scotland. The potential socio-economic effects that will be considered are:

- Temporary effects on the regional and/or national economy due to expenditure during the construction phase;
- Permanent effects on the regional and/or national economy due to expenditure associated with the ongoing operation and maintenance of the Proposed Development;
- Permanent effects as a result of any additional public expenditure that could be supported by the additional tax revenue that would be generated by the Proposed Development during the operational phase; and
- Permanent effects on the local economy that could be supported by any community funding and/or shared ownership proposals during the operational phase of the Proposed Development.

15.5.2 Effects will be considered based on the guidance from guidelines for Environmental Impact Assessment Handbook.

15.5.3 The assessment will consider effects during construction and operational phases. Further, each assessment must consider the potential for cumulative effects. The projects to be considered cumulatively with the Proposed Development will be agreed and be in line with those considered in other technical assessments.

15.5.4 The predicted socio-economic effects of the Proposed Development are assessed, using the significance criteria outlined in **Table 15-1**. As there are no published standards or technical guidelines that set out a preferred methodology for assessing the likely socio-economic effects of a project of this nature, professional judgement, with reference to commonly used methodologies, and recognised approaches to quantifying economic effects, is used to determine the significance criteria. Major or moderate effects are defined as significant in EIA terms.

Table 15-1: Significance Criteria

Significance	Description
Major	Major loss / improvement to key elements / features of the baselines conditions such that post development character / composition of baseline condition will be fundamentally changed. For example, a major long-term alteration of socio-economic conditions, a major reduction / improvement of community assets, or a substantial change to expenditure levels.

Significance	Description
Moderate	Loss / improvement to one or more key elements / features of the baseline conditions such that post development character / composition of the baseline condition will be materially changed. For example, a moderate long-term alteration of socio-economic conditions, a moderate reduction / improvement in the community assets or a moderate change to expenditure levels.
Minor	Changes arising from the alteration will be detectable but not material; the underlying composition of the baseline condition will be similar to the pre-development situation. For example, a small alteration of the socio-economic conditions, a small reduction / improvement in community assets, or a small change in expenditure levels.
Negligible	Very little change from baseline conditions. Change is barely distinguishable, approximating to a "no change" situation.

15.6 Potential Mitigation

15.6.1 Where required, mitigation measures will be presented. These will only be presented where there are any moderate or major adverse effects, which is considered unlikely. Where relevant, enhancement measures will be presented to aid the delivery of the Proposed Development, such as for example, community funding and 'Meet the Buyer' and local procurement type events and activities.

15.7 Potential Impacts

15.7.1 Potential impacts will be presented across socio economic aspects. The socio-economic effects will be presented in the form of GVA, jobs, turnover and inward investment levels. The assessment will be based on a review of secondary sources and other technical assessments will be undertaken to measure the scale of these effects.

15.8 Scoping Questions to Consultees

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

- THC (Isle of Skye Area Team and Economic Development Team);
- Skye and Raasay Future (SARF) Project Team;
- Highlands and Islands Enterprise (Lochaber, Skye, and Wester Ross Team); and
- Skye Connect (as the local economic development service provider, with a specific focus on growing the tourism credential of Skye).

The following questions are proposed:

- Q15.1 Do THC and Statutory Consultees agree that the range of surveys carried out to date is sufficient and appropriate?
- Q15.2 Are THC and Statutory Consultees aware of any key sensitive receptors that should be taken into account?
- Q15.3 Are THC and Statutory Consultees aware of any particular consultees in the area who may wish to provide comment on the scope of this assessment?

16. Traffic and Transport

16.1 Introduction

This section of the Scoping Report covers the predicted access, traffic and transport issues that may arise from the construction of the Proposed Development, the significance of these effects and what suitable mitigation measures can be put in place to offset any adverse impacts.

16.1.1 The Access, Traffic and Transport Chapter will be supported by a Transport Assessment report, and technical figures.

16.1.2 The key issues for consideration as part of the assessment will be:

- The temporary change in traffic flows and the resultant, temporary effects on the study network during the construction phase;
- The physical mitigation associated with the delivery of abnormal loads;
- The design of new access infrastructure; and
- The consideration of appropriate and practical mitigation measures to offset any temporary effects.
- The potential effects of these will be examined in detail in the EIA Report.

16.2 Baseline Description

16.2.1 The Proposed Development is to be accessed from the A863 via a purpose designed junction to accommodate Abnormal Indivisible Loads (AIL) for wind farm traffic, Heavy Goods Vehicles (HGV) and Cars and Light Goods Vehicles (LGV). Access from the public road would then be by private tracks.

16.2.2 Local material sourced will be used where feasible and traffic will avoid impacting on local communities, as far as possible.

16.3 Guidance & Legislation

The following policy and guidance documents will be used to inform the Access, Traffic and Transport Chapter:

- Transport Assessment Guidance (Transport Scotland, 2012);
- Environmental Assessment of Traffic and Movement (Institute of Environmental Management & Assessment (IEA), 2023);
- National Planning Framework (NPF) 4 (Scottish Government, 2023); and
- The Highland Council Transport Assessment Guidelines and general guidelines for the assessment of wind farm developments.

16.4 Proposed Scope of Assessment

Proposed Study Area

The proposed Study Area is focussed on the A836 between Dunvegan and Sligachan.

Baseline traffic count data for the study area will be obtained from a new Automatic Traffic Count (ATC) survey at the location of the proposed junction. Traffic data for the A863 will be obtained from the UK Government Department for Transport (DfT) databases.

National Road Traffic Forecast (NRTF) Low Traffic Growth assumptions will be used to provide a common future year baseline to coincide with the expected construction traffic peak.

Traffic accident data would be obtained from Crashmap UK for the study network to inform the accident review for the immediate road study area. Five years of available data within the proposed Study Area will be collated.

Assessment Methodology

16.4.1 The main transport impacts will be associated with the movement of general Heavy Goods Vehicles (HGV) traffic travelling to and from the Site during the construction phase of the Proposed Development.

16.4.2 An operational phase assessment for wind farm deliveries and for post wind farm works would also be undertaken.

16.4.3 Environmental Assessment of Traffic and Movement (IEMA, 2023) sets out a methodology for assessing potentially significant environmental effects. In accordance with this guidance, the scope of assessment will focus on:

- Potential impacts (of changes in traffic flows) on local roads and the users of those roads; and
- Potential impacts (of changes in traffic flows) on land uses and environmental resources fronting these roads, including the relevant occupiers and users.

16.4.4 The following rules taken from the guidance will be used as a screening process to define the scale and extent of the assessment:

- **Rule 1** – Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles (HGV) will increase by more than 30%); and
- **Rule 2** – Include highway links of high sensitivity where traffic flows have increased by 10% or more.

16.4.5 Increases below these thresholds are generally considered to be insignificant given that daily variations in background traffic flow may fluctuate by this amount. Changes in traffic flow below this level predicted as a consequence of the Proposed Development will therefore be assumed to result in no discernible environmental impact and as such no further consideration will be given to the associated environmental effects.

16.4.6 The estimated traffic generation of the Proposed Development for the construction and operational phases will be compared with baseline traffic flows, obtained from new and existing traffic survey data in order to determine the percentage increases in traffic.

16.4.7 Potentially significant environmental effects will then be assessed where the thresholds as defined above are exceeded. Suitable mitigation measures will be proposed, where appropriate.

16.4.8 Committed development traffic i.e., those from proposals with planning consent will be included in baseline traffic flows, where traffic data for these schemes is considered significant and is publicly available. Developments that are proposed or at scoping would not be included.

16.4.9 It is not anticipated that a formal Transport Assessment will be required as these are not generally considered necessary for temporary construction phase works. A reduced scope Transport Assessment is therefore proposed. An appraisal of existing passing place provision will be undertaken to support the Transport Assessment.

Receptors and Impacts Scoped Out of Assessment

16.4.10 There are two phases of the Proposed Development, which would be considered within any assessment and are as follows:

- The Construction Phase; and

- The Operational Phase.

16.4.11 Of the two phases, the construction phase is considered to have the greatest impact in terms of transport and potential impacts on the road network and sensitive receptors. Construction plant and bulk materials will be transported to Site, potentially resulting in a significant increase in traffic on the study network. As such, the construction phase represents a worst-case assessment scenario.

16.4.12 Once operational, it is envisaged that the level of traffic associated with the Proposed Development would be reduced. AIL deliveries per day may result in circa 20 movements per day, comprised of AIL and escort vehicles, whilst other activities post wind farm works may result in up to 50 movements per day. This calculation is an initial estimate during the Scoping phase and will be confirmed during the assessment. To provide a robust assessment the operational phases will be considered.

16.5 Potential Mitigation

16.5.1 Standard mitigation measures that are likely to be included in the assessment are:

- Production of an outline Construction Traffic Management Plan (CTMP);
- The design of suitable access arrangements with full consideration given to the road safety of all road users; and
- A Construction Staff Travel Plan.

16.5.2 Additional mitigation will be included should the assessment reveal criteria that are significant following the application of standard mitigation measures.

16.6 Potential Impacts

16.6.1 Potential impacts that may arise during the assessment may include the following for users of the road and those resident along the delivery routes:

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Fear and intimidation;
- Accidents and safety;
- Road Safety Audits; and
- Large Loads.

16.7 Scoping Questions to Consultees

- Q16.1 Is the proposed methodology acceptable?
- Q16.2 Are the methods proposed for obtaining traffic flow data acceptable?
- Q16.3 Is use of Low National Road Traffic Forecasts (NRTF) acceptable for the whole of the study?
- Q16.4 What developments should be included as committed developments within the baseline traffic flows in the assessment, noting that these should have planning consent at the time of scoping?
- Q16.5 Are there any details of any upgrades or network changes that may be undertaken to the study area network within the next five years?

17. Commercial & Recreational Navigation

17.1 Introduction

17.1.1 This chapter of the Scoping Report addresses the potential navigation and marine safety impacts of the construction of a new quay to handle large commercial vessels to facilitate the delivery of wind turbine components to north-west Skye. The study area for the navigation assessment comprises of the seaward navigational approaches to the Proposed Development in Loch Bracadale, and the Site of the marine works within Loch Caroy

17.1.2 Loch Bracadale is a sea loch with a south-west facing opening to the Sea of Hebrides (which is connected to The Little Minch to the north and the Atlantic Ocean to the south). Loch Bracadale is comprised of several smaller inner lochs, each with an associated name including Loch Harport, Loch Vatten, Loch Caroy, and Loch Beag. Loch Bracadale is one of the largest areas of semi-enclosed inshore waters around the Skye coast. The wider area is covered by UKHO Admiralty Chart 2635 (UKHO, 2020).

17.1.3 Due to the breadth and openness of Loch Bracadale's entrance to the south-west, much of the area is exposed to the prevailing wind. The area is used extensively by a small local fishing fleet, with boats based at Carbost, Struan and Caroy. Fish farms are also present in some of the more sheltered loch areas with associated aquaculture vessel traffic and marine operations.

17.2 Baseline Description

Data Sources

17.2.1 A desk-based study would be undertaken to inform the baseline characterisation on which the assessment would be based. This would include consideration of the following key data sources:

- Accident and Incident data from, the Marine Accident Investigation Branch (MAIB) and the Royal National Lifeboat Institution (RNLI).
- Weather and environmental based ephemeral and almanac data.
- Automatic Identification System (AIS) data from a range of sources including the UK Government release AIS from the Defra Data Platform and locally collected AIS data for a summer and winter period collected in 2023/24.
- Navigational features and charted information from United Kingdom Hydrographic Office (UKHO) Admiralty Charts.
- Recreational activity from RYA coastal sailing atlas.

Study Area

17.2.2 The north-west of Scotland is popular destination for recreational vessels particular yachting and motorboats. With local ports in the area providing safe havens and recreational facilities such as in Loch Harport. Carbost has facilities for recreational vessels that includes a pier, pontoons and moorings which attracts recreational activity. The Isle of Skye is also a popular area for boat tours with one provider located in Loch Harport.

17.2.3 Commercial activity in the area would include fish farm activity such as fish food transfers and personnel transfer. Other commercial activities would likely include non-port service craft which perform maintenance services to marine infrastructures such as buoys, slipways, and piers.

17.2.4 Additionally, Loch Bracadale lends itself to being a good, sheltered anchorage, with locations north of Wiay Island and to the west of Harlosh Island with the inner lochs offering sheltered anchorages depending on the wind direction and swell state.

17.2.5 There are no Statutory Harbour Authorities (SHAs) in the local area, therefore the competent authority for the safety of navigation is Maritime Coastguards Agency (MCA).

17.3 Guidance & Legislation

17.3.1 The following guidance will be considered within the methodology:

Primary guidance

- The National Policy Statement for Ports (NPSfP, 2012) provides the overarching UK policy against which the port and harbour developments are made. Paragraph 5.6.2 (NPSfP, 2012) recognises that there could be an increased risk of spills and leaks of pollutants resulting from infrastructure development. The Scottish Executive has devolved responsibilities for ports and has published the 'National Transport Strategy 2' as the relevant ports policy (Transport Scotland, 2020).

Secondary guidance

- In the absence of specific government guidance relating to marine and navigational risk for port and harbour developments, the following documents will be considered in the preparation of the Navigational Risk Assessment (NRA):
  - The UK National standard for the safe and efficient running of ports is the Department for Transport's (DfT) 'Port Marine Safety Code' (DfT, 2016) and its accompanying document 'A Guide to Good Practice on Port Marine Operations' (DfT, 2018).
  - Certain sections of the following documents, which provide supplementary guidance, will also be considered in the preparation of the NRA: International Maritime Organization (IMO) Revised Guidelines for Formal Safety Assessment (FSA) for use in the IMO rule making process (IMO, 2018); and the Marine Guidance Note (MGN 654) incorporating Annex 1 Methodology for assessing marine navigational safety and emergency response risks, (MCA, 2021).
- As the competent authority for marine safety, the MCA will be consulted in the planning and creation of the NRA. In addition, in its capacity as the General Lighthouse Authority (GLA), Northern Lighthouse Board (NLB) will also be consulted with respect to the lighting and marking of the Proposed Development.

17.4 Proposed Scope of Assessment

Proposed Study Area

17.4.1 The Study area is the area over which potential direct and indirect effects of the Proposed Development may occur during construction and operation. The direct effects on navigation are both those within the footprint of the Proposed Development and the approaches to the Proposed Development extending out into Loch Bracadale.

17.4.2 The study area for the commercial and recreational navigation topic will be defined through the EIA assessment of AIS data and be sufficient in extent to capture the potential impacts arising from the Proposed Development and related marine operations. At present, the study area is anticipated to include an area extending out into Loch Bracadale.

Assessment Methodology

17.4.3 The data sources which would be used to gather the baseline information for the NRA and to inform the EIA are noted in the data sources section above.

17.4.4 In order to assess the potential impacts of the Proposed Development upon commercial shipping and recreational navigation, relative to the baseline, a combination of analytical methods and

expert judgement would be used. This would include qualitative assessments of data along with consideration of the existing evidence base and empirical evaluation.

17.4.5 An NRA would be required to support the EIA application for the Proposed Development. The NRA outputs would inform the Commercial Shipping and Recreational Navigation EIA chapter and the NRA would be provided as an appendix to the EIA. To provide local stakeholder input, a hazard identification workshop would be arranged which would bring together relevant navigational stakeholders for the area to discuss the potential impacts on navigational safety.

17.4.6 It is anticipated stakeholders would include, as a minimum:

- The Maritime and Coastguard Agency
- The Northern Lighthouse Board
- The Highlands Council
- The Royal Yachting Association (Scotland)
- The Scottish Canoeing Association
- Local boat owners' associations, clubs, and users

17.4.7 Following the risk assessment process and full consideration of navigation hazards brought about by the Proposed Development, the need to have certain controls would be agreed and decided upon. Decisions relating to implementation of these controls would be finalised by the Applicant to determine whether the risks are both tolerable and risk is reduced to a point of 'as low as reasonably practicable' (ALARP) as required by the Port Marine Safety Code.

The outputs of the NRA will be used to inform a judgement on the significance of effects arising from the Proposed Development, which will be reported in the respective EIA chapter.

Receptors and Impacts Scoped Out of Assessment

17.4.8 Based on the baseline information currently available and the project description, no impacts (to commercial and recreational receptors) or pathways have been scoped out at this stage. This is principally due to the potential for pathway changes to impact on other topic receptors and the requirement for informing those assessments.

17.5 Potential Mitigation

17.5.1 Where impacts on navigation or marine safety from the Proposed Development are identified, mitigation measures or mitigation controls will be identified through the NRA process for adoption/implementation as appropriate. Where possible, these controls will be embedded within the background navigational environment through the marine works. The preliminary mitigation measures are presented below.

Construction Phase

17.5.2 The Contractor Risk Assessment and Method Statement (RAMS) will incorporate mitigation measures from the NRA (for example, pollution response capability navigation equipment requirements, standard of personal, coding of vessels, etc).

17.5.3 The scheme will incorporate The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) guidance on Aids to Navigation (AtoN) for marking the works. Any changes to Aids to Navigation will be subject to consideration and approval from the Northern Lighthouse Board.

17.5.4 Safety lighting during the works, providing appropriate illumination of the marine works without affecting mariners' night vision (BSI, Road Lighting, BS:5489 1, 2020).

17.5.5 Adoption of standards for dockside operations, as laid out in the Health and Safety Publication, Approved Code of Practice (ACOP), Safety In Docks, L148 (HSE, 2014).

17.5.6 As a point of contact, management and control, the establishment of a Site 'Local Port Service (LPS)' to enable communications with vessels navigating within the vicinity of the Proposed Development.

17.5.7 During construction Notices to Mariners (NtM) issued to inform vessels of the construction activities and dates they are occurring within the Loch.

17.5.8 On completion of the marine works, a bathymetric survey will be undertaken that takes into account the standards required for the data to be used to create navigational charts.

Operational Phase

17.5.9 The scheme will incorporate The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) guidance on Aids to Navigation (AtoN) for marking the completed infrastructure. Any Aids to Navigation will be subject to consideration and approval from the Northern Lighthouse Board.

17.5.10 Regular Hydrographic surveying should be scheduled to ensure that the approaches to the quay are safe and fit for use and to be in line with Port Marine Safety Code requirements.

17.5.11 A marine liaison officer or Pier Master to promulgate safety information to vessels navigating in the area and be the point of contact during an emergency situation. They will also be able to manage and schedule all vessel activity at the facility.

17.5.12 A Marine safety management system (MSMS) to detail the procedures for promulgating information and requirements of marine personnel about the management of the facility.

17.5.13 As a terminal it would be required to submit Port Marine Safety Code compliance to the regulator ensuring that the facility meets the requirements as set within the Code.

17.5.14 Emergency plans would be required with detailed responses to emergency situations, along with appropriate contacts for different emergencies.

17.5.15 Marine facility conservancy functions are considered to be operational mitigation, including bathymetric survey and maintenance of AtoN.

17.6 Potential Impacts

17.6.1 This section identifies the potential impacts on navigation and marine safety from the Proposed Development.

Construction Phase

17.6.2 The following potential impact pathways have been identified as part of the construction phase:

- Contact of construction or dredging craft with construction works: manoeuvring of construction or delivery craft in close proximity to marine structures has the potential for heavy contact (allision) with infrastructure during construction phase.
- Collision during navigation: vessel collision (commercial, recreational, or fishing) with the construction or dredging craft whilst transiting to or from the Site or during activities within the disposal Site dispersal grounds.
- Grounding of construction or dredging craft: vessels engaged in the works grounding on the foreshore, or other marine works during construction and dredge activity.
- Commercial dive related incident: diving related incident as a result of an underwater hazard or marine craft activity whilst engaged in diving for construction or inspection activity.

- Marine pollution incidents: pollutants entering the water from a marine incident (for example, a collision) or through an accidental spill from refuelling plant and equipment.
- Payload related incident: through the unloading of cargo (for example, construction material or rock armour) it is possible that construction craft could suffer a loss of stability resulting in water ingress or capsize.
- Fire/explosion: construction craft experiencing a fire and/or an explosion onboard leading to a marine emergency situation.
- Heavy lift failure: construction craft experiencing a failure of lifting equipment or dropping a heavy item (for example, rock armour or pile) onto a vessel causing a marine emergency situation.
- Man-overboard during construction phase: the loss of personnel dredge craft during the construction phase.
- Accident to the general public: the accessibility of the shoreline for the general public and those engaged in near-shore recreational pursuits (for example, small manual powered craft) presents a marine safety risk to the general public during the construction phase.

Operation Phase

17.6.3 The following potential impact pathways have been identified as part of the operational phase:

- Contact of vessel with the Proposed Development: vessel Masters' unfamiliar with the area or those navigating with outdated information may make contact (allision) with the structure either those transiting or berthing.
- Collision during navigation: vessel collision (commercial, recreational, or fishing) with the operational craft departing or arriving from the Proposed Development.
- Payload related incident: through the unloading of cargo (for example, Turbine Blades or Site construction material) it is possible that cargo vessel could suffer a loss of stability resulting in water ingress or capsize.
- Mooring Failure of cargo vessel whilst alongside. Vessel inadequately moored at the proposed development could result in breakaway from infrastructure.

17.7 Scoping Questions to Consultees

- Q17.1 Do the consultees agree that, subject to further information coming to light from consultation and desk studies, the scope of the assessment is appropriate?
- Q17.2 Do the consultees have any information not outlined in the Scoping report that would inform the impact assessment for commercial and recreational navigation?

18. Climate Change

Introduction

18.1.1 The Proposed Development will ultimately contribute to Scotland's transition to zero-carbon energy by facilitating the construction of wind farms and reducing reliance on fossil fuels. However, the net contribution of the Proposed Development to local and national greenhouse gas (GHG) emissions will be additive to the current baseline.

18.1.2 A Climate Change Assessment (CCA) is therefore required to evaluate the Proposed Development's potential effects on climate change through emissions of relevant GHG during construction and operation; and the Proposed Development's potential vulnerability to future physical effects of climate change.

18.1.3 Following identification of the potential effects, suitable mitigation measures will be proposed, and an assessment of residual effects on environmental receptors sensitive to climate change will be undertaken.

Legislation, Policy and Guidelines

18.1.4 Relevant legislation, planning policy and guidance documents will be reviewed as part of the CCA. Of particular relevance are:

- Climate Change
    - The Climate Change (Scotland) Act 2009 which required ministers to establish Scotland's programme for climate change adaptation (Scottish Government, 2009);
    - The Paris Agreement 2015 which sets a target for net zero global carbon emissions in the second half of the 21st century to limit the global temperature increase to less than 2°C above pre-industrial levels. A key aim of this agreement is to strengthen national responses to combat climate change and adapt to its effects. The Paris Agreement was ratified by the UK in 2016 (UNFCCC, 2015);
    - Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 which sets Scottish targets for the reduction of GHG emissions to deliver on the Paris Agreement, and makes provision about advice, plans and reports in relation to those targets. The Act sets an interim 56% reduction target for 2020 and a Net Zero target for 2045 (Scottish Government, 2019); and,
    - Scottish Government Climate Change Plan (CCP) (2018 – 2032) which is a roadmap for Scotland to transition to a low carbon economy. The plan sets out how Scotland will reduce emissions by 66% over the period to 2032 (The Scottish Government, 2018).
- Environmental Impact Assessment
    - The Environmental Impact Assessment (EIA) Directive (2014/52/EU) entered into force on 15th May 2015. This amendment broadened the scope of EIAs to encompass areas such as resource efficiency, climate change and disaster prevention. It requires that EIAs identify, describe and assess the direct and indirect significant effects of climate change relevant to the project (i.e. carbon, climate change resilience and in-combination climate change impacts) (European Commission, 2014));
    - The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 which transposes the above Directive introduced the need to consider climate as part of EIAs in Scotland (The Scottish Government, 2017); and

- The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

- Planning Policy
  - Scottish Government Climate Change Plan (CCP) (2018-2032) sets out how Scotland will continue to improve resilience to climate change and reduce emissions over the period to 2032 (The Scottish Government, 2018);
  - National Policy Framework 4 (Scottish Government, 2023), which contains a raft of measures which will influence net-zero policymaking in the 2020s and beyond;

- Guidance
  - 2015 IEMA guidance on Climate Resilience and Adaptation in EIA (IEMA, amended in 2020) provides a framework for the effective consideration of climate change resilience and adaptation through EIA procedures. It includes case studies of EIAs which have considered climate adaptation and resilience issues, reflecting legislative developments and evolving practice; and
  - IEMA Principles Series – Climate Change Mitigation and EIA (IEMA, 2010).

Study Area

18.1.5 The areas considered cover the planning application boundary for the Proposed Development and the areas associated with the transportation of the turbine blades. This includes the proposed marine coastal setting where turbine blades are to be delivered before transport to Site.

Assessment Methodology

18.1.6 To consider climate resilience, an assessment will be undertaken of current and future climate trends at the Site of the Proposed Development, including mean air temperature, wind speed, precipitation rate and sea level rise. Potential mitigation to be incorporated into the finalised design will be suggested to cover the lifetime of the Proposed Development. This work will complement that done in the Flood Risk, Drainage & Coastal Protection chapter. The following sources will be used to characterise existing or future baseline conditions:

- Met Office UK Climate Averages (Met Office, 2023);
- UKCP18 Climate Projections (Met Office, 2023);
- UK local authority and regional carbon dioxide emissions national statistics (BEIS, 2022); and
- Climate change allowances for flood risk assessment in land use planning (SEPA, 2023).

18.1.7 To consider anticipated GHG emissions from the construction and operation of the Proposed Development, methodology from the World Bank Centre of Sustainable Development and Word Resource Institute Greenhouse Gas Project Protocol (the GHG Protocol) will be used. The GHG Protocol classifies GHG emissions into scopes. Emissions sources that will be considered within the context of the Scope are as follows:

- Scope 1 emissions: direct GHG emissions from the project, i.e. from combustion of fossil fuels such as natural gas and diesel;
- Scope 2 emissions: indirect emissions of GHG caused using grid electricity by the Proposed Development and hence necessitating combustion of fossil fuels by gas and coal-fired electricity generating installations outside the project's physical boundary; and
- Scope 3 emissions: from the supply chain; in this case the embodies emissions of GHG from the production of bulk building materials, particularly concrete and steel.

18.1.8 The GHG Scopes will form a comprehensive evaluation of emissions from, and due to, the Proposed Development over its expected lifecycle.

18.1.9 Mitigation measures, where practicable, will be agreed by the project team and incorporated into the emerging design.

Scoping Questions to Consultees

- Q 18.1 Do you agree the appropriate guidance and legislation has been identified?
- Q 18.2 Do you agree that the methodology is appropriate and proportionate?

19. Other Environmental Considerations

19.1 Population and Human Health

19.1.1 Population and human health have been scoped out for the following reasons:

- Population will be considered in socio-economics; and
- Human health will be considered in Air quality, Noise and within pollution prevention for Hydrology.

19.2 Risk of Major Accidents and/or Disasters

19.2.1 A list of major accidents / disasters has been considered in terms of how the Site location and the proposed land use may affect the risk of each disaster. Error! Reference source not found. outlines potential major accidents and disasters, the potential risk associated with the location and site use and additional comments.

Table 19-1: Potential Major Accidents and Disasters

Major Accident / Disaster	Location Risk	Proposed Use Risk	Comments
Biological hazards	N	N	Scoped out
Earthquakes	N	N	Scoped out
Mass movements e.g. landslides	N	N	Scoped out
Severe Storms	Y	N	Scoped out. Resilience to severe storms will be considered as part of the design process.
Severe Droughts	N	N	Scoped out
Displaced Populations	N	N	Scoped out
Fire	N	N	Scoped out
Flood / Surges	Y	N	Discussed in Section 13: Coastal Processes and Geomorphology.
Terror Attacks	N	N	Scoped out
Transport Accidents	N	N	Discussed in Section 16: Transport and Access and Section 17: Commercial & Recreational Navigation.

19.3 Natural Resource Usage and Waste

19.3.1 This section of the report will look at the natural resource and waste produced during construction and operation of the Proposed Development.

Site Waste Management Plan

19.3.2 During the construction of the Proposed Development, materials will be required for the construction of the quay, land reclamation for the construction of hardsurfacing for the laydown area and development of the access track. A Site Waste Management Plan (SWMP) will be produced by the Principal Contractor prior to starting on Site. The SWMP aims to minimise construction waste from imported materials and waste created on-Site during the construction and excavation processes. The SWMP will minimise the quantities of imported materials through good design and best practice, minimise waste and optimise any waste arising. It will also be a condition of contract that the Principal Contractor will utilise locally produced and supplied source materials where possible and from sustainable sources, while quarrying for rock will be sourced as local as possible.

19.3.3 During the operational phase of the Proposed Development, there is likely to be office/welfare buildings on the Site, with waste still expected to be low.

19.3.4 Proposed Environmental Impact Assessment

19.3.5 It is proposed that natural resource usage and waste is scoped out of the EIA for both the construction and operational phases due to the lack of significant potential impacts associated with the Proposed Development.

Scoping Questions to Consultees

- Q 19.1 Do you agree Population and Human Heath, Major Accidents and Disasters, and Natural Resource Usage and Waste can be scoped-out of the EIA?

20. Summary

20.1.1 This EIA Scoping Report outlines the proposed technical and environmental assessments that will be included within the EIA Report for the Proposed Development. **Table 19.1** summarises these and indicates the technical topics which have been scoped out of the EIA Report. The proposed scope and methodologies for each assessment have been provided and the guidance to be followed set out. Should any further information be required in order that a full EIA Scoping Opinion can be provided we would be happy to provide further information and/or discuss any further requirements.

Table 20-1: Topics Scoped In and Out of EIA Report

EIA Topic	Scoped In or Out
Air Quality	Scoped In
Landscape, Seascape and Visual Impact	Scoped In
Cultural Heritage & Marine Archaeology	Scoped In
Terrestrial Ecology	Scoped In
Marine Ecology	Scoped In
Intertidal and Terrestrial Ornithology	Scoped In
Airborne Noise & Vibration	Scoped In
Ground Conditions and Land Quality	Soils/Peat Scoped in Geology, Hydrogeology and Contamination Scoped Out
Coastal Processes and Geomorphology	Scoped In
Water and Sediment Quality	Scoped In
Flood Risk, Drainage & Coastal Protection	Scoped In
Socio Economics	Scoped In
Traffic & Transport	Scoped In
Commercial & Recreational Navigation	Scoped In
Climate Change	Scoped In
Other Environmental Considerations	Population and Human Health Scoped Out Risk of Major Accidents and/or Disaster Scoped Out Natural Resource Usage and Waste Scoped Out

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