



Cenos Offshore Windfarm Limited



Cenos EIA

Chapter 7 - EIA Methodology

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ACRONYMS

ACRONYM	DEFINITION
AA	Appropriate Assessment
CCS	Carbon Capture and Storage
CEA	Cumulative Effects Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
cSAC	Candidate Special Areas of Conservation
EEA	European Economic Area
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EICC	Export/Import Cable Corridor
EU	European Union
GHG	Greenhouse Gas
HRA	Habitats Regulations Appraisal
HVDC	High Voltage Direct Current
ICCI	In-Combination Climate Impact
IEMA	Institute of Environmental Management and Assessment
IROPI	Imperative Reasons of Overriding Public Interest
km	Kilometre
LSE	Likely Significant Effects
MD-LOT	Marine Directorate - Licensing Operations Team
MHWS	Mean High Water Springs
NM	Nautical Miles
NPF4	National Planning Framework 4
PDE	Project Design Envelope
pSPA	Potential Special Protection Areas
RIAA	Report to Inform Appropriate Assessment
SAC	Special Area of Conservation
SCI	Site of Community Importance
SNH	Scottish Natural Heritage (now NatureScot)
SPA	Special Protection Areas
UK	United Kingdom
ZoI	Zone of Influence

GLOSSARY

TERM	DEFINITION
2023 Scoping Opinion	Scoping Opinion received in June 2023, superseded by the 2024 Scoping Opinion.
2023 Scoping Report	Environmental Impact Assessment (EIA) Scoping Report submitted in 2023, superseded by the 2024 Scoping Report.
2024 Scoping Opinion	Scoping Opinion received in September 2024, superseding the 2023 Scoping Opinion.
2024 Scoping Report	EIA Scoping Report submitted in April 2024, superseding the 2023 Scoping Report.
Area of Opportunity	The area in which the limits of electricity transmission via High Voltage Alternating Current (HVAC) cables can reach oil and gas assets for decarbonisation. This area is based on assets within a 100 kilometre (km) radius of the Array Area.
Array Area	The area within which the Wind Turbine Generators (WTGs), floating substructures, moorings and anchors, Offshore Substation Converter Platforms (OSCPs) and Inter-Array Cables (IAC) will be present.
Cenos Offshore Windfarm ('the Project')	'The Project' is the term used to describe Cenoss Offshore Windfarm. The Project is a floating offshore windfarm located in the North Sea, with a generating capacity of up to 1,350 Megawatts (MW). The Project which defines the Red Line Boundary (RLB) for the Section 36 Consent and Marine Licence Applications (MLA), includes all offshore components seaward of Mean High Water Springs (MHWS) (WTGs, OSCP, cables, floating substructures moorings and anchors and all other associated infrastructure). The Project is the focus of this Environmental Impact Assessment Report (EIAR).
Cenos Offshore Windfarm Ltd. (The Applicant)	The Applicant for the Section 36 Consent and associated Marine Licences.
Cumulative Assessment	The consideration of potential impacts that could occur cumulatively with other relevant projects, plans, and activities that could result in a cumulative effect on receptors.

TERM	DEFINITION
Developer	Cenos Offshore Windfarm Ltd., a Joint Venture between Flotation Energy and Vårgrønn As (Vårgrønn).
Environmental Impact Assessment (EIA)	The statutory process of evaluating the likely significant environmental effects of a proposed project or development. Assessment of the potential impact of the proposed Project on the physical, biological and human environment during construction, operation and maintenance and decommissioning.
Environmental Impact Assessment Regulations	This term is used to refer to the Environmental Impact Assessment Regulations which are of relevance to the Project. This includes the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended); and the Marine Works (Environmental Impact Assessment) Regulations 2007.
Environmental Impact Assessment Report	A report documenting the findings of the EIA for the Project in accordance with relevant EIA Regulations.
Export/Import Cable	High voltage cable used to export/import power between the OSCP and Landfall.
Export/Import Cable Bundle (EICB)	Comprising two Export/Import Cables and one fibre-optic cable bundled in a single trench.
Export/Import Cable Corridor (EICC)	The area within which the Export/Import Cable Route will be planned and the Export/Import Cable will be laid, from the perimeter of the Array Area to MHWS.
Export/Import Cable Route	The area within the Export/Import Export Corridor (EICC) within which the Export/Import Cable Bundle (EICB) is laid, from the perimeter of the Array Area to MHWS.
Floating Turbine Unit (FTU)	The equipment associated with electricity generation comprising the WTG, the floating substructure which supports the WTG, mooring system and the dynamic section of the IAC.
Flotation Energy	Joint venture partner in Cenos Offshore Windfarm Ltd.

TERM	DEFINITION
<p>Habitats Regulations</p>	<p>The Habitats Directive (Directive 92/43/ECC) and the Wild Birds Directive (Directive 2009/147/EC) were transposed into Scottish Law by the Conservation (Natural Habitats &c) Regulations 1994 ('Habitats Regulations') (up to 12 NM); by the Conservation of Offshore Marine Habitats and Species Regulations 2017 ('Offshore Marine Regulations') (beyond 12 NM); the Conservation of Habitats and Species Regulations 2017 (of relevance to consents under Section 36 of the Electricity Act 1989); the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001; and the Wildlife and Countryside Act 1981. The Habitats Regulations set out the stages of the Habitats Regulations Appraisal (HRA) process required to assess the potential impacts of a proposed project on European Sites (Special Areas of Conservation, Special Protection Areas, candidate SACs and SPAs and Ramsar Sites).</p>
<p>Habitats Regulations Appraisal</p>	<p>The assessment of the impacts of implementing a plan or policy on a European Site, the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site.</p>
<p>High Voltage Alternating Current (HVAC)</p>	<p>Refers to high voltage electricity in Alternating Current (AC) form which is produced by the WTGs and flows through the IAC system to the OSCP. HVAC may also be used for onward power transmission from the OSCP to assets or to shore over shorter distances.</p>
<p>High Voltage Direct Current (HVDC)</p>	<p>Refers to high voltage electricity in Direct Current (DC) form which is converted from HVAC to HVDC at the OSCP and transmitted to shore over longer distances.</p>
<p>Horizontal Directional Drilling (HDD)</p>	<p>An engineering technique for laying cables that avoids open trenches by drilling between two locations beneath the ground's surface.</p>
<p>Innovation and Targeted Oil & Gas (INTOG)</p>	<p>In November 2022, the Crown Estate Scotland (CES) announced the Innovation and Targeted Oil & Gas (INTOG) Leasing Round, to help enable this sector-wide commitment to decarbonisation. INTOG allowed developers to apply for seabed rights to develop offshore windfarms for the purpose of providing low carbon electricity to power oil and gas installations and help to decarbonise the sector. Cenoss is an INTOG project and in November 2023 secured an Exclusivity Agreement as part of the INTOG leasing round.</p>
<p>Inter-Array Cable (IAC)</p>	<p>The cables which connect the WTGs to the OSCP. WTGs may be connected with IACs into a hub or in series as a 'string' or a 'loop' such that</p>

TERM	DEFINITION
	power from the connected WTGs is gathered to the OSCP's via a single cable.
Joint Venture	The commercial partnership between Flotation Energy and Vårgrønn, the shareholders which hold the Exclusivity Agreement with CES to develop the Cenos site as an INTOG project.
Landfall	The area where the Export/Import Cable from the Array Area will be brought ashore. The interface between the offshore and onshore environments.
Marine Licence	Licence required for certain activities in the marine environment and granted under the Marine and Coastal Access Act 2009 and/or the Marine (Scotland) Act 2010.
Marine Protected Area (MPA)	Marine sites protected at the national level under the Marine (Scotland) Act 2010 out to 12 NM, and the Marine and Coastal Access Act 2009 between 12-200 NM. In Scotland MPAs are areas of sea and seabed defined so as to protect habitats, wildlife, geology, underseas landforms, historic shipwrecks and to demonstrate sustainable management of the sea.
Marine Protected Area (MPA) Assessment	A three-step process for determining whether there is a significant risk that a proposed development could hinder the achievement of the conservation objectives of an MPA.
Mean High Water Springs (MHWS)	The height of Mean High Water Springs is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest.
Mean Low Water Springs (MLWS)	The height of Mean Low Water Springs is the average throughout a year of the heights of two successive low waters during periods of 24 hours (approximately once a fortnight).
Mitigation Measures	<p>Measures considered within the topic-specific chapters in order to avoid impacts or reduce them to acceptable levels.</p> <ul style="list-style-type: none"> • Primary mitigation - measures that are an inherent part of the design of the Project which reduce or avoid the likelihood or magnitude of an adverse environmental effect, including location or design; • Secondary mitigation – additional measures implemented to further reduce environmental effects to ‘not significant’ levels (where appropriate) and do not form part of the fundamental design of the Project; and

TERM	DEFINITION
	<ul style="list-style-type: none"> Tertiary mitigation – measures that are implemented in accordance with industry standard practice or to meet legislative requirements and are independent of the EIA (i.e. they would be implemented regardless of the findings of the EIA). <p>Primary and tertiary mitigation are referred to as embedded mitigation. Secondary mitigation is referred to as additional mitigation.</p>
Mooring System	<p>Comprising the mooring lines and anchors, the mooring system connects the floating substructure to the seabed, provides station-keeping capability for the floating substructure and contributes to the stability of the floating substructure and WTG.</p>
Nature Conservation Marine Protected Area (NCMPA)	<p>MPA designated by Scottish Ministers in the interests of nature conservation under the Marine (Scotland) Act 2010.</p>
Offshore Substation Converter Platforms (OSCPs)	<p>An offshore platform on a fixed jacket substructure, containing electrical equipment to aggregate the power from the WTGs and convert power between HVAC and HVDC for export/import via the Export/Import cable to/from the shore. The OSCP's will also act as power distribution stations for the Oil & Gas platforms.</p>
Onward Development	<p>Transmission projects which are anticipated to be brought forward for development by 3rd party oil and gas operators to enable electrification of assets via electricity generated by the Project. All Onward Development will subject to separate marine licensing and permitting requirements.</p>
Onward Development Area	<p>The area within which oil and gas assets would have the potential to be electrified by the Project.</p>
Onward Development Connections	<p>Oil and gas assets located in the waters surrounding the Array Area will be electrified via transmission infrastructure which will connect to the Project's OSCP's. These transmission cables are referred to as Onward Development Connections.</p>
Project Area	<p>The area that encompasses both the Array Area and EICC.</p>
Project Design Envelope	<p>A description of the range of possible elements that make up the Project design options under consideration and that are assessed as part of the EIA for the Project.</p>

TERM	DEFINITION
Study Area	Receptor specific area where potential impacts from the Project could occur.
Transboundary Assessment	The consideration of impacts from the Project which have the potential to have a significant effect on another European Economic Area (EEA) state's environment. Where there is a potential for a transboundary effect, as a result of the Project, these are assessed within the relevant EIA chapter.
Transmission Infrastructure	The infrastructure responsible for moving electricity from generating stations to substations, load areas, assets and the electrical grid, comprising the OSCP, and associated substructure, and the Export/Import Cable.
Vårgrønn As (Vårgrønn)	Joint venture partner in Cenoss Offshore Windfarm Ltd.
Wind Turbine Generator (WTG)	The equipment associated with electricity generation from available wind resource, comprising the surface components located above the supporting substructure (e.g., tower, nacelle, hub, blades, and any necessary power transformation equipment, generators, and switchgears).
Worst-Case Scenario	The worst-case scenario based on the Project Design Envelope which varies by receptor and/or impact pathway identified.

7 EIA METHODOLOGY

7.1 Introduction

The principal aim of the Environmental Impact Assessment (EIA) process is to ensure that the authority granting consent (hereafter referred to as the 'competent authority') for the Cenos Offshore Windfarm (hereafter referred to as 'the Project') is presented with full knowledge and a complete picture of the potential impacts and significant effects of the Project on the receiving environment.

The EIA Process is a method of undertaking and presenting an assessment of a development's potential to result in a significant effect on physical, biological and human receptors. An effect can be considered as beneficial or adverse (or both). This helps to ensure that the public and competent authority is presented with the findings of a Project-specific EIA before a consent-decision is made for the Project. The process of EIA further enables Cenos Offshore Windfarm Ltd. (hereafter referred to as 'the Applicant') to identify any potentially adverse effects of a development on the receiving environment early, thereby allowing the identification and incorporation of appropriate mitigation measures into the design of the Project.

This chapter outlines the approach to EIA for the Project in support of the Application for Section 36 Consent and associated Marine Licences and provides an overview of the key stages of EIA that have been adopted for each receptor-specific impact assessment, in line with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and the Marine Works (Environmental Impact Assessment) Regulations 2007 (together, the 'EIA Regulations') (as detailed within the **Environmental Impact Assessment Report (EIAR) Vol. 2, Chapter 3: Policy and Legislative Context**).

The assessment of impacts on each environmental receptor is provided in topic-specific chapters within the EIAR (Chapters 8-22).

7.2 EIA Scoping

The 2024 Scoping Report was submitted to Marine Directorate – Licensing Operations Team (MD-LOT) in April 2024, relevant stakeholders were consulted. The Scoping Opinion was received in September 2024. The 2024 Scoping Report and Scoping Opinion supersedes the 2023 Scoping Report and Scoping Opinion for the Project. The Scoping Report was submitted to Scottish Ministers (via MD-LOT) requesting a Scoping Opinion under the following regulations:

- Regulation 12 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Regulation 14 of The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- Regulation 13 of The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended).

The objective of the Scoping Report was to engage with the competent authority, statutory and non-statutory consultees as part of the EIA process. Parties were invited to provide relevant information and comment on the Project and assessments presented within the Scoping Report to ensure that a robust and proportionate EIA is undertaken in support of the Applications for Section 36 Consent and associated Marine Licences and. The Scoping Report provided information on:

- The proposed Project, including the nature of infrastructure to be constructed within the marine environment;
- The proposed approach to baseline characterisation and assessment of potential effects on physical, biological and human receptors within the marine environment;
- Identified the topics and potential impact pathways to be scoped in for further assessment as part of the EIA (i.e., where it was not possible to conclude that the Project would not result in significant effects, without taking into account secondary mitigation); and
- Identified the topics and potential impact pathways which could be scoped out for further assessment as part of the EIA (i.e., where it was possible to conclude that works associated with the construction, operation and maintenance and decommissioning phases of the Project would not result in a significant effect to the receptor with consideration of embedded mitigation).

The Scoping Opinion was received in September 2024. The assessment presented within this EIAR incorporates comments received from the competent authority and stakeholders and subsequent consultation. A list of consultees that were consulted and those that responded to the Scoping consultation have been provided within **EIAR Vol. 2, Chapter 6: Stakeholder Engagement** and relevant responses have been presented within each topic-specific chapter (Chapter 8-22), with a summary on how the comment is addressed within the respective assessment.

The topics which have been ‘scoped out’ for further assessment as per the 2024 Scoping Report¹ as part of this EIAR include: offshore bats. The Applicant acknowledges NatureScot scoping advice regarding scoping in Nathusius’ pipistrelle bats into EIA, and the conservation status and importance for this species protection but would emphasise that scientific evidence of migratory routes is currently only available for the southern North Sea between the United Kingdom (UK) and The Netherlands and Belgium, and between Denmark, Germany, and Sweden over the Baltic Sea. There is no confirmed evidence of a more northern migration route over the North Sea, and although Eurobats have published a possible migratory route between Norway and Scotland for Nathusius’ Pipistrelles, the route was suggested based on the migratory capability of the species and its land-based distribution rather than survey data. A detailed response was sent to NatureScot and MD-LOT in October 2024 further outlining the justification to scope out offshore bats from the EIA. In November 2024, NatureScot confirmed that given the limited information currently available on this species migration across the North Sea, an assessment conducted under the EIA would be premature.

Major Accidents and Disasters, was scoped out in the 2024 Scoping Report and although in accordance with the Scoping Opinion² received in September 2024 from Scottish Ministers (via MD-LOT), it has been included in the EIAR for completeness (**EIAR Vol. 3, Chapter 21: Major Accidents and Disasters**). Each impact assessment chapter details the impacts / receptors that have been scoped out of assessment of that topic in accordance with the Scoping Opinion.

Further details on the infrastructure, operations and activities considered as part of this EIAR is presented within the **EIAR Vol. 2, Chapter 5: Project Description**.

¹ <https://marine.gov.scot/node/25089>

² <https://marine.gov.scot/node/25576>

7.3 EIA Process

The EIA process is an approach to the systematic identification and assessment of potential effects of a development on the receiving environment, detailing the understanding of the existing environment (prior to the commencement of any development works). As detailed within **EIAR Vol. 2, Chapter 5: Project Description** the EIA process considers the environmental impact of works proposed as part of the construction, operation and maintenance and decommissioning phases of a development. The potential impacts of the Project on various receptors (as identified in the Scoping Opinion), as presented within this EIAR, details how the Project will affect the receiving environment, and determine the significance of those effects in line with the EIA Regulations. Each topic-specific chapter gives consideration to relevant and up-to-date good-practice guidance to inform the approach to the assessment.

As detailed in Figure 7-1, the key steps of EIA include:

1. **Characterisation of the existing baseline environment**, with consideration given to the receiving environment within the immediate vicinity of the Project, and within a wider pre-defined, receptor-specific Study Area. The existing baseline environment will be characterised through a desk-based analysis of publicly available data and Project site-specific surveys;
2. **Description of the Project Design Envelope (PDE)** which outlines the key Project design parameters used to identify and assess the worst-case scenario for each potential impact;
3. **Assessment of the potential effects** of the Project to identify and assess any potentially significant effects (either beneficial or adverse) which may arise as a result of construction, operation and maintenance and decommissioning works associated with the Project on the receiving environment. The assessment of potential effects will consider the worst-case design scenario, the characterisation of the existing baseline environment (and the future anticipated baseline, in the absence of the Project) and any comments or feedback received as part of the Scoping Opinion and through consultation with stakeholders. The assessment of potential effects will give consideration to the embedded mitigation measures integrated into the design of the Project (hereafter referred to as 'primary mitigation') which may result in an update to step 2, 'Description of the PDE' and specific mitigation measures adopted as part of the Project to reduce the potential for significant effects on the receiving environment, as required by legislation or industry practices (hereafter referred to as 'tertiary mitigation');
4. **Identification of any secondary mitigation measures** required in addition to primary or tertiary mitigation measures. Secondary mitigation measures may be adopted in order to further reduce or remove a potentially significant effect (where reasonably practicable);
5. **Assessment of the residual effects** of the Project on the receiving environment will be undertaken, with consideration given to the implementation of secondary mitigation measures;
6. **Identification of relevant monitoring studies** required to monitor the predicted effects of the Project on the receiving environment; and
7. **Publication of the EIAR and Non-Technical Summary** to the competent authority and stakeholders.

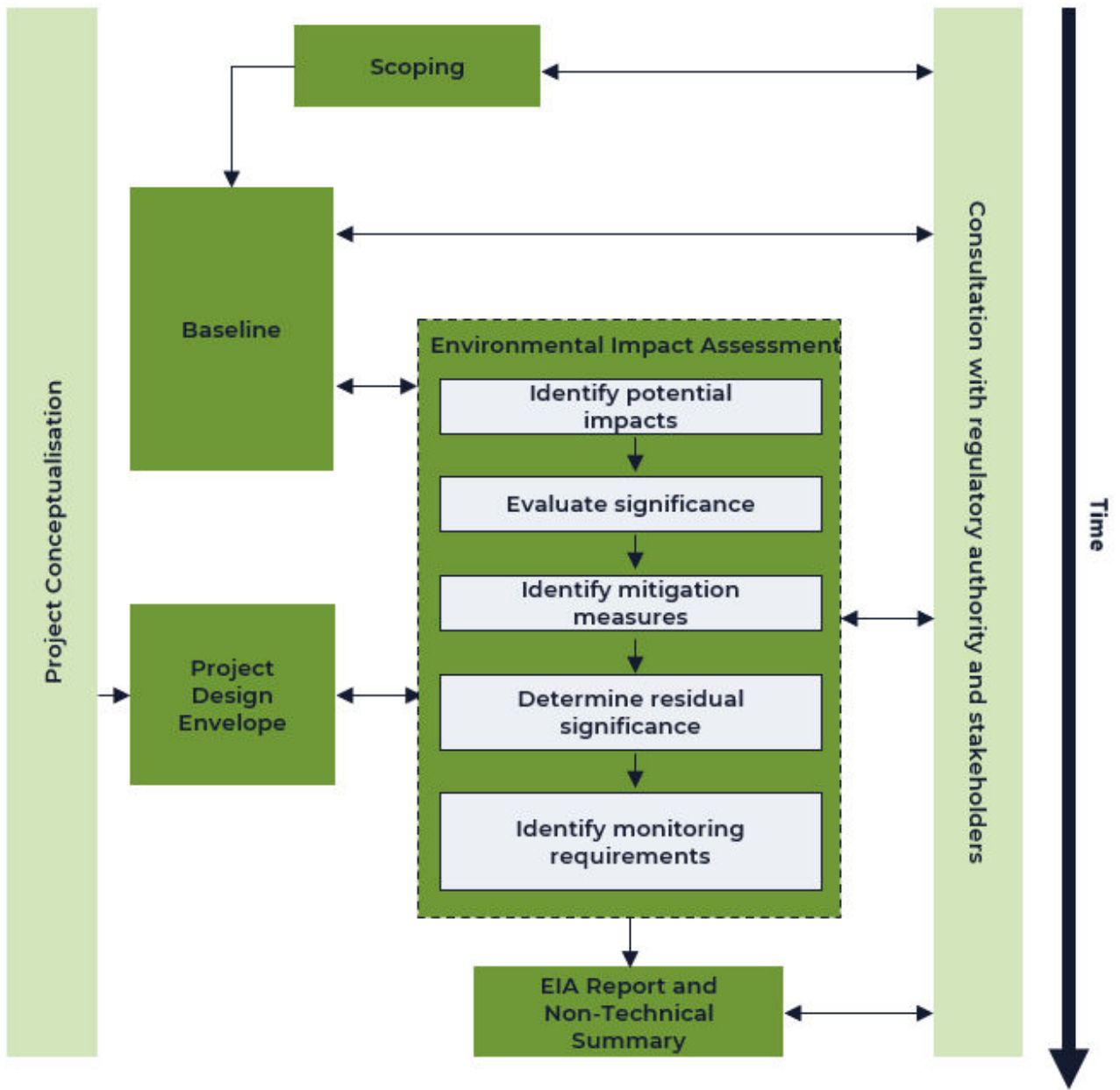


Figure 7-1 Project EIA Process

As stipulated within the EIA Regulations, this EIAR gives consideration to the potential effects of the Project on carbon and greenhouse gases. **EIAR Vol. 3, Chapter 20: Carbon and Greenhouse Gases** provides a detailed description of the future climate baseline over the operational lifetime of the Project, with consideration given to how key changes in climate variables will affect the physical, biological and human environment associated with the Project. The carbon and Greenhouse Gas (GHG) assessment will provide an overarching assessment of the following:

- Future marine environment baseline – describes the future climate baseline over the lifetime of the Project, focussing on key changes in climate variables that will affect the physical, biological and socio-economic environment;
- Carbon and GHG assessment-- the carbon life cycle emissions resulting from the Project and the carbon payback period;
- In-Combination Climate Impact (ICCI) assessment – assesses the combined effects of the Project, as assessed within this EIAR, and climate change on the physical, biological and socio-economic environment; and
- Blue carbon assessment-- assesses the disturbance or loss of blue carbon stores

In addition, the EIA regulations require that the potential effects which may arise as a result of a developments vulnerability to major accidents and/or disasters is considered (as presented within **EIAR Vol. 3, Chapter: 21: Major Accidents and Disasters**). Furthermore, **EIAR Vol. 3, Chapter 19: Socio-economics, Tourism and Recreation** presents an assessment of the potential effects of the Project on human health, with consideration given to the following:

- Education and training;
- Community Safety;
- Social participation, interaction and support;
- Community identity, culture, resilience and influence;
- Transport, modes, access and connections;
- Housing / accommodation; and
- Open space leisure and play.

7.4 Habitats Regulations Appraisal (HRA)

Under the Habitats Regulations, it is required that an assessment of the potential effects of the Project on internationally important designated sites and qualifying features is undertaken as part of a Habitats Regulations Appraisal (HRA). It is noted that while the HRA does not form part of the Project EIA, the outcomes of the EIA will inform the HRA. As such the approach to HRA and the specific legislation which outlines the approach to HRA are detailed further below.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (hereafter referred to as the Habitats Directive) affords protection to natural habitats and wild flora and fauna. The Council Directive 2009/147/EC on the Conservation of Wild Birds (hereafter referred to as the Birds Directive) affords protection to all species of naturally occurring wild birds. Within the UK, sites designated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (collectively referred to as European Sites) form part of the UK Site Network of designated sites, delivering the conservation requirements of the Habitats and Birds Directives.

The following legislation (collectively referred to as 'The Habitats Regulations') transpose the Habitats and Birds Directives into Scottish Law and outline the requirement to consider the potential effects of a development on a European Site and the associated qualifying features and objectives:

- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (applicable to developments between 0 and 12 Nautical Miles (NM));
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (applicable to developments between the 12 and 200 NM);
- The Conservation of Habitats and Species Regulations 2017 (as amended) (applicable to Section 36 Consent applications); and
- The Conservation (Natural Habitats, &c.) (European Union (EU) Exit) (Scotland) (Amendment) Regulations 2019 (applicable to the above legislation).

Under the Habitats Regulations it is required that consideration is given to the potential effects of a development on a European Site, including SACs, candidate SACs (cSACs), SPAs, potential SPAs (pSPAs), Sites of Community Importance (SCIs) and Ramsar Sites (as designated under the Conservation of Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention³)).

As part of the HRA process, the potential for a development to result in Likely Significant Effects (LSE) on a European Site, either alone or in-combination with another project or development within the marine environment should be considered.

The three stages of HRA assessment, as detailed within the European Commission's (2021) guidance, are:

- Stage One: undertake **HRA Screening** to determine whether a development is likely to have significant effects on a European Site. This stage does not give consideration to any embedded mitigation measures (other than those adopted as part of the Project design);
- Stage Two: an **Appropriate Assessment** (AA) is undertaken by the competent authority, as informed by the Project-specific Report to Inform Appropriate Assessment (RIAA). This stage will allow the competent authority to determine whether a development will or will not adversely affect the integrity of a European Site, its qualifying features and overall conservation objectives, either alone or in combination. This stage gives consideration to embedded mitigation measures specifically adopted by the Project to reduce the potential for significant effects; and
- Stage Three:
 - Where it cannot be concluded that works associated with the construction, operation and maintenance and decommissioning phases of a Project will not result in an adverse effect on a European Site, an **assessment of alternative solutions** will be undertaken; and
 - Where no alternative solutions can be implemented to reduce an adverse effect on a European Site, an **assessment of 'Imperative Reasons of Overriding Public Interest'** (IROPI) will be undertaken to consider where there are over-riding reasons of public interest for the development to go ahead. Where necessary compensation methods will be considered as part of the assessment of IROPI.

³ In 2019 the Scottish Government clarified their policy regarding Ramsar Sites, with any reference to Scottish Ramsar Sites referred to under policy 4 of the 4th National Planning Framework (NPF4), available here: <https://www.transformingplanning.scot/national-planning-framework/>

The Project HRA Stage One Screening Report (**Report to Inform Appropriate Assessment (RIAA), Appendix A: HRA Stage One Screening Report**) was submitted to Scottish Ministers (via MD-LOT) on the 6th of May 2024. The Project RIAA has been submitted to Scottish Ministers (via MD-LOT) alongside this EIAR in support of the Application for Section 36 Consent and associated Marine Licences

The RIAA provides the competent authority (Scottish Ministers) with the information required to assist them in undertaking an AA and to determine whether the Project will result in any adverse effect on a European Site, its qualifying features and/or conservation objectives.

7.5 Baseline characterisation

The characterisation of the existing baseline environment is undertaken for each scoped in physical, biological and human receptor in order to determine the baseline conditions both within the footprint of the Project and within a pre-defined, receptor-specific Study Area. The characterisation of the baseline involves the following steps:

- Define a receptor-specific Study Area based on the nature and relevant characteristics of the receptor (i.e., mobility, range, sensitivity);
- Undertake a desktop review of relevant data and information (including publicly available data and information and project-specific survey reports);
- Determine whether there is sufficient information available to characterise the existing baseline environment with an appropriate level of detail and confidence;
- If further data is required, ensure that data is gathered to address these gaps;
- Undertake a receptor-specific baseline characterisation using the data and information available, ensuring that the baseline provides sufficient information and identifies key data gaps for use as part of the impact assessment;
- Identify any remaining gaps and limitations and describe the implications of these on the characterisation of the baseline; and
- Give consideration to the future baseline environment and naturally occurring potential changes to the baseline environment over the lifetime of the Project (in the absence of the Project within the marine environment). Consideration should be given to climate change, changes in practices and any other reasonably foreseeable changes.

The methodology adopted for receptor-specific baseline characterisation is presented within each topic-specific chapter (Chapters 8-22) within this EIAR. The characterisation of the receptor-specific baseline environment has been informed by comments received as part of the Scoping Opinion and consultation with stakeholders.

7.6 Assessment of potential effects

7.6.1 Identification of impacts and assessment of effects

The assessment of potential effects arising from the Project on the receiving environment adopts the 'source-pathway-receptor' model (as presented within Figure 7-2). The 'source-pathway-receptor' model represents the origin of an impact (i.e., the Project specific activity which will introduce the impact to the marine environment), the pathway for the impact (i.e., the route from the source of the impact to the receptor) and the receptor or resource that will receive the effect. Where there is no known 'pathway' for an impact at the source to result in an effect to a

receptor there is considered to be no potential for effect. If the Project design is not sufficiently advanced to conclude that no known ‘pathway’ is present for an impact, a precautionary approach to the assessment of potential effects has been undertaken, and this impact is assessed fully as part of the EIA. The assessment gives consideration to both the spatial and temporal scale of a potential impact, as determined on a receptor-specific, case-by-case basis (as presented within Chapters 8-22).

In the context of this EIAR if a pathway exists, an ‘impact’ is considered to result in an ‘effect’. Works associated with the construction, operation and maintenance and decommissioning of the Project have the potential to result in both an adverse or positive effect on the receiving environment. The ‘source-pathway-receptor’ method of impact identification considers adverse or positive, direct or indirect, temporary or permanent effects on the receiving environment. The assessment of potential effects undertaken within this EIAR is further outlined in Sections 7.6.2 to 7.6.5.

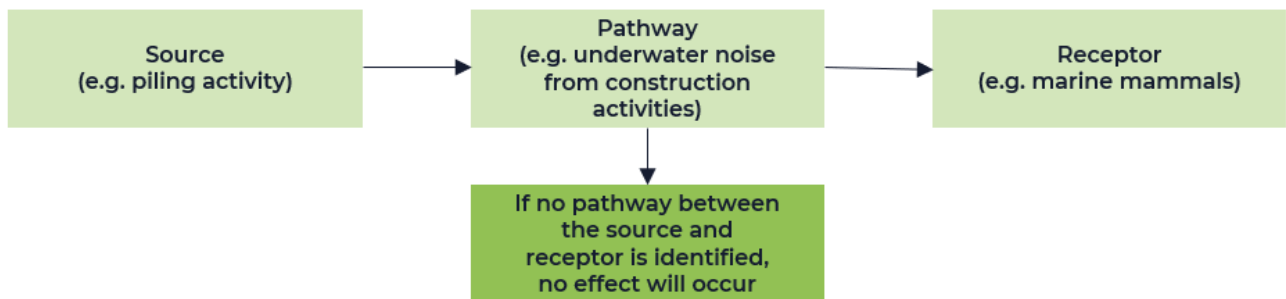


Figure 7-2 Source-pathway-receptor model

For potential impacts scoped in for further assessment this EIAR considers the significance of an effect using a standard EIA methodology. This approach considers the sensitivity of the receptor being assessed and how the magnitude of a potential effect may alter existing baseline conditions (Figure 7-3). This assessment considers any embedded mitigation measures adopted as part of the Project design.

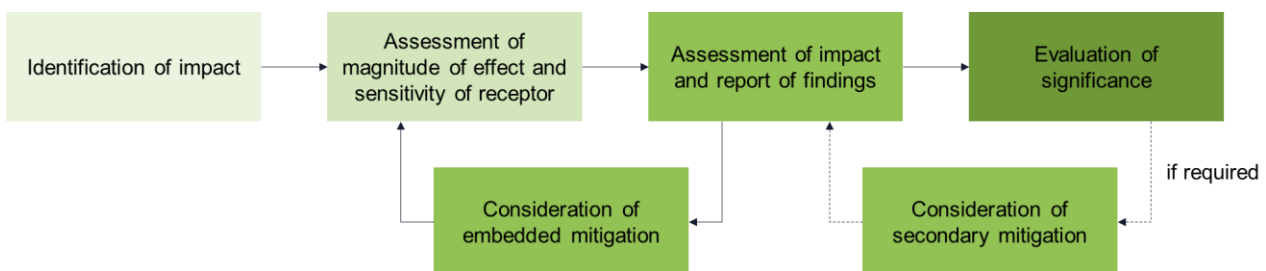


Figure 7-3 Process of assessment of effects

7.6.2 Ecosystem approach

In order to understand the potential for impacts on the wider ecosystem, a holistic approach has been undertaken to characterise the existing environmental baseline and to identify those impacts which have the potential to result in

a significant impact to a receptor at both an ecosystem scale and across trophic levels (e.g., an impact on prey species which have the potential to affect their availability for predators). Impacts between different trophic levels, including indirect impacts between trophic levels, have been considered within each relevant assessment presented within this EIAR. Impacts on a receptor and any associated prey or predator species have been considered throughout assessments, providing a full understanding of the consequence of an impact pathway on receptors.

7.6.3 Design envelope approach

The PDE will continue to evolve through to the post-consent stage of the Project, accounting for the rapid and frequent advances in design and technology within the offshore renewable industry. In line with standard best practice and Scottish Government (2022) Guidance for applicants on using the design envelope for applications under section 36 of the Electricity Act 1989, the Project has adopted a PDE approach to inform the assessment of potential impacts within this EIAR.

The PDE approach allows for the realistic worst-case Project parameters and values to be presented and considered as part of the impact assessment, ensuring flexibility within the Project design so that accommodations in design and technology advances for the offshore infrastructure can be maintained within the Project consent. The PDE considers Project infrastructure, including permanent and temporary works associated with the Project from the Array Area to Mean High Water Springs (MHWS).

The PDE doesn't consider the Onward Development Connections for oil and gas electrification (see Section 0 Onward Development Connections for further details).

Within this EIAR, the worst-case Project design parameters (which will in any event be within the overall PDE) of relevance to receptor-specific impact assessments (i.e., the worst-case scenario) have been determined on a case-by-case basis and are presented within each receptor-specific chapter (Chapters 8-22). As such, the Project design parameters considered within each impact assessment may differ from one receptor to another. This results in an EIA that clearly defines and assesses the Project design parameters which are specific to each receptor and therefore considers the worst-case potential impacts of the Project on each receptor, with any other design parameters considered to have an equal-to or lesser effect than those assessed as part of the worst-case scenario. The PDE approach allows for further refinements to be made to the detailed design of the Project throughout the process, with confidence that in any event the 'as-built' final design will not exceed the worst-case parameters set out within this EIAR, meaning that the impacts presented can be relied upon confidently as a worst-case impact.

7.6.4 Mitigation

In line with the Institute of Environmental Management and Assessment (IEMA) (2016) Guide to Delivering Quality Development, mitigation measures can be classified under the following categories:

- Primary mitigation – measures that are an inherent part of the design of the Project which reduce or avoid the likelihood or magnitude of an adverse environmental effect, including location or design;
- Secondary mitigation – additional mitigation measures implemented to further reduce environmental effects to ‘not significant’ levels (where appropriate) and do not form part of the fundamental design of the Project; ; and
- Tertiary mitigation – measures that are implemented in accordance with standard industry practice or to meet legislative requirements and are independent of the Environmental Impacts Assessment (EIA) (i.e., these mitigation measures would be implemented regardless of the findings of the EIA

7.6.4.1 Embedded mitigation measures

Embedded mitigation measures (including primary and tertiary mitigation measures) are identified and adopted as part of the fundamental design of the Project. These measures are adopted in order to reduce the potential for impacts arising from the construction, operation and maintenance and decommissioning phases of the Project on the receiving environment. These mitigation measures are considered as part of the assessment of significant effects.

7.6.4.2 Secondary mitigation measures

Secondary mitigation measures are implemented after an assessment of potential effects has been completed for a Project. Where it cannot be concluded that a potential impact does not have the potential to result in significant effects on a receptor, secondary mitigation measures are implemented (where appropriate) to reduce an environmental effect to ‘not significant’ levels. As detailed within the IEMA (2016) Guide to Delivering Quality Development, secondary mitigation ‘may be imposed as part of the planning consent, or through inclusion in the Environmental Statement’.

7.6.5 Assessment of impact significance

7.6.5.1 Overview

As defined in the EIAR Vol. 2, Chapter 3: Policy and Legislative Context, the EIA Regulations require that an EIA considers the likely significant environmental impacts of the Project on physical, biological and human receptors. The regulations themselves do not provide a definition of ‘significance’, however the methods used for identifying and assessing potential impacts should be applicable across each impact assessment presented within this EIAR.

The assessment of impact significance undertaken within this EIAR gives consideration to the latest EIA principals and relevant guidance including:

- Scottish Natural Heritage (SNH) (now NatureScot) (2018) EIA Handbook: Guidance for competent authorities, consultation bodies, and others involved in the EIA process in Scotland;
- The Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) guidelines for ecological impact assessment in the UK and Ireland: terrestrial, freshwater, coastal and marine; and
- Marine Directorate (2018) Consenting and Licensing Guidance for Offshore Wind, Wave and Tidal Energy Applications.

Within each topic-specific chapter of the EIAR (Chapters 8-22), guidance of relevance to the assessment of potential impacts is presented.

For each impact, the sensitivity of the receptor to a Project activity is defined and a systematic approach to the assessment and the consequence of the effects is presented. The approach to impact significance considers the following:

- Identification of a receptor and impact (including durations, timing and nature of the impact);
- Definition of receptor sensitivity;
- Definition of magnitude of effect;
- Evaluation of the consequence of the effects on the receptor, with consideration given to the sensitivity of the receptor and magnitude of the effect; and
- Determination of whether consequence is significant or not in EIA terms.

Where there are data gaps or limitations presenting difficulties in assigning sensitivity to a receptor or defining the magnitude of an effect, this is clearly stated within the relevant EIAR chapter. In these cases, a precautionary approach to the assessment of significant effects is applied, with an understanding that an impact cannot be concluded as 'not significant' where there is insufficient evidence to support this conclusion.

While defining receptor sensitivity and effect magnitude is a subjective process, Sections 7.6.5.2 to 7.6.5.4 below outlines the approach which has been adopted for this impact assessment in order to maintain a consistent approach across topics. The definitions provided consider the varying physical and biological characteristics of the receptor. Where there is a clear deviation from the assessment approach outlined below for a specific receptor, this is clearly stated and explained within the topic-specific chapter.

7.6.5.2 Defining receptor sensitivity

The sensitivity of the receptor considers the ability of the receptor to tolerate, adapt to and recover from a change within the marine environment. Expert judgement is particularly important when determining the sensitivity of a receptor to a potential impact.

The sensitivity of a receptor is defined in consideration of the following factors:

- The ability of a receptor to withstand or tolerate change;
- The ability of a receptor to recover from an impact (i.e., return to its baseline state);
- The ability of a receptor to adapt to an impact; and
- The value of a receptor (i.e., the conservation value, protected status or economic value of a receptor).

The sensitivity of a receptor can be classed as 'negligible', 'low', 'medium' or 'high'. Example definitions of receptor sensitivity for each of these classes is presented in Table 7-1 below. The definitions presented within this table are basic examples and definitions have been amended on a receptor-specific case-by-case basis within topic-specific chapters (Chapters 8-22) based on specific guidance, legislation and/or expert judgement.

Table 7-1 Example receptor sensitivity criteria

SENSITIVITY	DEFINITION
High	<ul style="list-style-type: none"> The receptor has no capacity to accommodate a particular effect and has no ability to recover or adapt; and/or The receptor is of conservation/economic value to an extent that is internationally or nationally important.
Medium	<ul style="list-style-type: none"> The receptor has low capacity to accommodate a particular effect and has a low ability to recover or adapt; and/or The receptor is of conservation/economic value to an extent that is regionally important.
Low	<ul style="list-style-type: none"> The receptor has some tolerance or ability to accommodate a particular effect or will be able to recover from or adapt to an effect; and/or The receptor is of conservation/economic value to an extent that is locally important.
Negligible	<ul style="list-style-type: none"> The receptor is generally tolerant and can accommodate a particular effect without the need to recover or adapt to an effect; and/or The receptor is widespread/common geographically and is of low conservation/economic value.

7.6.5.3 Defining magnitude of effect

Magnitude of effect is defined in consideration of the following factors:

- The **spatial extent** of the effect (i.e., the area over which the effect is likely to occur);
- The **duration** of the effect (i.e., the period of time over which the effect is likely to occur);
- The **frequency** of the effect (i.e., the number of times that an effect is likely to occur over the lifecycle of the Project);
- The **intensity** of the effect (i.e., the severity of the effect); and
- The **likelihood** that the effect will occur.

The definition of magnitude of effect varies for specific pathways/receptors/topics; however, the definitions broadly follow the criteria presented within Table 7-2 below. The criteria provided below are for guidance only and have been amended on a receptor-specific case-by-case basis within topic-specific chapter (Chapter 8-22) based on specific guidance, legislation and/or expert judgement.

Table 7-2 Example magnitude of effect criteria

MAGNITUDE	CRITERIA
High	<ul style="list-style-type: none"> • A total change or major alteration to key elements/features of baseline conditions; • An effect occurs over a large scale or spatial geographical extent and/or is long-term or permanent in nature; and/or • High frequency (occurring repeatedly or continuously for a long period of time) and/or at high intensity.
Medium	<ul style="list-style-type: none"> • A partial change or alteration to one or more key elements/features of baseline conditions; • An effect occurs over a medium scale/spatial extent and/or has a medium-term duration; and/or • Medium to high frequency (occurring repeatedly or continuously for a moderate length of time) and/or at moderate intensity or occurring occasionally/intermittently for short periods of time, but at a moderate to high intensity.
Low	<ul style="list-style-type: none"> • A minor shift away from baseline conditions; • An effect occurs over a local to medium scale/spatial extent and/or has a short to medium-term duration; and/or • The effect is unlikely to occur or will occur as a low frequency (occurring occasionally/intermittently for short periods of time at a low intensity).
Negligible	<ul style="list-style-type: none"> • A very slight change from baseline conditions; • An effect is highly localised and short term with full rapid recovery expected to result in very slight or imperceptible changes to baseline conditions or receptor populations; and/or • The effect is very unlikely to occur and if it does occur at very low frequency or intensity.
No Change	<ul style="list-style-type: none"> • No change from baseline conditions.

7.6.5.4 Evaluation of significance

The evaluation of significance for each receptor has been defined in consideration of the overall receptor sensitivity and effect magnitude. The determination of significance may be quantitative or qualitative and is informed by expert judgement. Table 7-3 below sets out how the magnitude of effect and the sensitivity of the receptor are combined to provide an overall consequence of effect.

Table 7-3 Consequence of effect

CONSEQUENCE OF EFFECT		MAGNITUDE				
		No change	Negligible	Low	Medium	High
SENSITIVITY	Negligible	No change	Negligible	Negligible	Negligible	Negligible
	Low	No change	Negligible	Minor	Minor	Minor
	Medium	No change	Negligible	Minor	Moderate	Moderate
	High	No change	Negligible	Minor	Moderate	Major

The categories presented above provide a threshold for the determination of impact significance which may arise as a result of Project construction, operation and maintenance and decommissioning works. Where an impact is defined as having ‘moderate’ effect this is considered to be potentially ‘significant’ in EIA terms. Impacts defined as ‘major’ are considered to be significant. Table 7-4 below provides typical definitions of impact significance. These definitions can be applied to both adverse and beneficial consequences.

Table 7-4 Definitions of consequence of effect and impact significance

CATEGORY	DEFINITION	IMPACT SIGNIFICANCE
Major	A fundamental change to the environment or receptor, resulting in a significant effect.	Significant
Moderate	A material but non-fundamental change to the environment or receptor, resulting in a possible significant effect.	Potentially significant
Minor	A detectable but non-material change to the environment or receptor, resulting in no significant effects or a small-scale temporary change.	Not significant
Negligible	No detectable change to the environment or receptor, resulting in no significant effect.	Not significant
No Change	No change to the environment or receptor	No change

Where an impact assessment concludes that works associated with the Project has the potential to result in a significant environmental impact, secondary mitigation measures has been applied to reduce this impact (where practicable) to a 'not significant' level (as described within Section 0). Following the implementation of secondary mitigation measures, the impact has been reassessed to determine the residual effect of the impact.

7.7 Cumulative effects assessment approach

In addition to considering the potential environmental impacts of the Project alone, the EIA Regulations require that consideration is given to the potential impacts of the Project cumulatively with other plans and projects (developments) and activities within the marine environment which have the potential to result in a cumulative effect on a receptor or group.

The full methodology and approach to Cumulative Effects Assessment (CEA) has been thoroughly described in **EIAR Vol. 4, Appendix 31: Cumulative Effects Assessment Methodology**. A summary of the approach has been provided here for clarity.

The identification of cumulative projects has adopted a staged approach. First, a 'long list' of cumulative projects was collated using publicly accessible databases and in consultation with MD-LOT in October 2024, based on defined areas of search specific to different types of plans, projects (developments) and activities (Section 7.7.1).

This long list was then reduced to a 'short list' by taking receptor-specific potential pathways of impact (e.g. temporal and spatial overlap of impacts) into account through various 'screening tests'. Where plans, projects (developments) and activities identified in the long list pass these screening tests, they have been included within the short list of plans, projects (developments) and activities. Each short list is specific to a receptor and is described further in the respective topic-specific chapter of Volume 3 of the EIAR, including stakeholder consultation, where applicable. The short-listing process is summarised in Section 7.7.2 and further details are provided in the topic-specific technical chapters (Chapter 8 – 22).

7.7.1 Cumulative long list

Plans, projects (developments) and activities within the public domain which were part of the following industries were identified as being of relevance to CEA:

- Aggregate, dredging and disposal;
- Cables and pipelines;
- Ports and harbours;
- Offshore energy;
- Oil and gas developments; and
- Carbon Capture and Storage (CCS).

The assessment of cumulative effects considers plans, projects (developments) and activities which are 'reasonably foreseeable', including plans, projects (developments) and activities which are:

- Pre-Application (Early Development): developments which are in the early stages of conception within the public domain (e.g. tender/bidding stage) and are yet to commence scoping, this category applies when project specifics are unknown;
- Pre-Application (Scoping): developments which have undertaken scoping but are yet to submit an application;
- Application: developments which have submitted applications but are yet to receive consent (i.e. are under consideration);
- Consented: developments which have received consent and/or are in the pre-construction phase;
- Under Construction: Developments which are being constructed at time of writing;
- Operational: developments which are active/operational (please note, operational developments are generally not considered within CEA and are usually part of the baseline; developments within this category have only been considered where additional development works are planned);
- Decommissioning / Decommissioned: developments which have reached the end of their operational life, are no longer active/operational and are either in the process of being decommissioned or have since been decommissioned.;

It is important to identify the status of cumulative plans, projects (developments) and activities (i.e., pre-application, application, consented, under construction, operational and decommissioning/decommissioned) in order to effectively assess the nature of cumulative effects with those anticipated as part of the Project. The long list was centred around the proposed Project construction timeline (from 2030 to 2035), ± 1 year either side to capture any uncertainty in other plans, projects (developments) and activity schedules. It is recognised that the consenting process for a development is continuous and hence the below timescales for the inclusion of a development within the cumulative long list have been utilised:

- Quantitative assessment of projects (developments) submitted to Scoping up to four months prior to the Project application submission;
- Qualitative assessment of projects (developments) submitted to Scoping up to four months prior to the Project application submission; and
- Acknowledgement of projects (developments) submitted to Scoping between four and two months prior to the Project application submission.

The cumulative project long-list has been collated in consideration of the most up-to-date publicly available information for each plan, project (development) and activity at the time of writing this EIAR.

In order to further parameterise the long list, a number of distances were used to define the extent of search for the plans, projects (developments) and activities listed above. Each of these search areas is specific to each type of industry and represents a conservative area within which there may be an opportunity for impact pathways to interact cumulatively with that of the Project. These search areas can be found in **EIAR Vol. 4, Appendix 31: Cumulative Effects Assessment Methodology**.

7.7.2 Cumulative short list

Following the identification of cumulative projects as part of the long list, a data gathering exercise was undertaken to summarise the activities, timescales and nature of identified plans and, projects (development). This information was used to determine how the nature and extent of a plan, project (development) and activity may result in a cumulative effect with the Project. Plans, projects (developments) and activities were screened in or out for inclusion within the CEAs according to the following assumptions:

- Screened out: included as part of the topic baseline (e.g. operational developments);
- Screened out: insufficient data/detail to conduct an assessment;
- Screened out: no temporal overlap;
- Screened out: no spatial overlap;
- Screened out: no pathway for impact on receptor; and
- Screened in: potential for cumulative impact.

In addition to the above justifications, the short list required that Zones of Influence (Zoi) must be defined for each EIA receptor. The Zois provide the maximum extent within which other plans, projects (developments) or activities can be screened in/out of the cumulative short list.

Table 7-5 below summarises the receptor-specific Zois which have been considered as part of this EIAR.

Table 7-5 Zones of Influence for offshore EIA Receptors

EIA RECEPTOR	ZONE OF INFLUENCE
Marine Geology, Oceanography and Coastal Processes	Defined by the extent of tidal ellipses along the Export/Import Cable Corridor (EICC), and 50 kilometre (km) around the Array Area (in order to account for blockage effects).
Marine Water and Sediment Quality	
Benthic Ecology	20 km around the Project Area in order to conservatively account for suspended sediments.
Marine Mammal Ecology	200 km to account for underwater noise impacts.
Ornithology	Species-specific, based on breeding season and non-breeding season regional populations.
Fish and Shellfish Ecology	60 km to account for underwater noise impacts.
Commercial Fisheries	For non-scallop targeting fisheries: 100 km. For scallopers: all plans, projects (developments) and activities which overlap with scallop grounds to be included (up to 510 km).
Shipping and Navigation	50 NM for most plans, projects (developments) and activities.
Marine Archaeology	50 km to account for palaeolandscape receptors.
Infrastructure and Other Users	2 NM for cables
Military and Civil Aviation	10 NM
Socio-economic, Tourism and Recreation	5 km ⁴

Finally, the topic-specific approach to CEA is outlined within each topic-specific chapter, with reference made to the cumulative effect pathways and the plans, projects (developments) and activities included within the assessment clearly referenced. This is particularly of note where the approach deviates from the methodology outlined above, as in EIAR Vol. 3, Chapter 12: Ornithology and in EIAR Vol. 3, Chapter 11: Marine Mammal Ecology. Please refer to EIAR Vol. 4, Appendix 17: Marine Mammal Cumulative Effects Assessment Screening and EIAR Vol. 4, Appendix 22: Distributional Responses Report.

⁴ Please note, EIAR Vol 3, Chapter 19: Socio-economics, Tourism, and Recreation, also considers cumulative effects in a local (Aberdeenshire Council and Aberdeen Council, Highland Council) and regional (Scotland) context. While CEA is primarily undertaken with reference to plans, projects (developments) and activities within the 5 km Zol, impacts are assessed at a broader scale; although this is done without specific reference to individual plans, projects (developments) and activities throughout the defined local and regional areas.

7.8 Onward Development Connections

A central aim of the Project is to provide the opportunity for oil and gas assets located in the waters surrounding the Array Area to electrify via transmission infrastructure connecting to the Project's electricity hub (i.e. Offshore Substation Converter Platforms (OSCPs)). These future projects form part of the anticipated future Onward Development which would be originated by the Project, referred to as Onward Development Connections.

The Onward Development Connections for oil and gas electrification will be finalised and brought forward by 3rd party oil and gas operators, subject to separate marine licencing and permitting requirements (including separate EIA, as appropriate). At this very early stage in the process, the information available about these connections is limited and cannot be confirmed by the Project. In accordance with standard practice and relevant industry guidance, the level of information available means there is insufficient detail to enable full inclusion within a cumulative effects assessment. However, recognising industry feedback and a keen interest in this topic from stakeholders, the Applicant has provided a qualitative assessment of the combined impact of the Project and Onward Development Connections, to the extent it can with the limited details on possible Onward Development. Please refer to **EIAR Vol. 3, Chapter 22: Statement of Combined Effects** for further details.

7.9 Inter-relationships

Inter-relationships are defined as the interaction between different Project receptor-specific impacts assessed within this EIAR, for example an impact on fish and shellfish may indirectly impact marine mammals (i.e., indirect impacts to predators (marine mammals) as a result of direct impacts to prey species (fish and shellfish)). Inter-relationships are identified through the consideration of potential interactions of all impacts across topics on a given receptor.

Where there is a potential for inter-relationships to arise between receptor-specific assessments, these have been clearly stated within relevant impact assessment chapters as part of this EIAR.

7.10 Inter-related effects

The EIAR will consider potential inter-related effects (i.e., the potential effects of multiple effects effecting a single receptor or group of receptors). Inter-related effects give consideration to the spatial and temporal overlap of all effects arising from works associated with the Project on a receptor. Inter-related effects can include interactions between effects both within stages of a development and between different stages of a development (i.e., the interaction of effects either within or between the construction, operation and maintenance and decommissioning phases). Where there is a potential for inter-related effects to arise, these have been clearly stated within relevant impact assessment chapters as part of this EIAR.

7.11 Whole Project assessment

The Project, as a whole, is comprised of not only the offshore Project, the focus of this document, but also the onshore export cables and the onshore converter station (the onshore Project). The onshore elements for ongoing grid connection (above MHWS), including the landward exit point and cable pull through, have previously been consented through the NorthConnect High Voltage Direct Current (HVDC) Cable Planning Consent (Planning Application Reference Number APP/2015/1121 and APP/2018/1831) (hereafter referred to as the 'onshore Project'). This offshore

EIAR is seeking consent / permission under different legislative regimes to the already consented onshore Project. As such, a 'whole Project assessment' is presented within each topic impact assessment chapter within this Offshore EIAR. The intention of this assessment is to provide a holistic overview of the effects from both offshore and onshore Project elements, to ensure that the whole Project impacts and effects are understood. A summary of the potential effects from the onshore Project is presented in the EIAR submitted by NorthConnect Ltd (NorthConnect, 2018).

For the vast majority of receptors assessed in this EIAR there will be no pathway for the respective onshore Project activities to impact and result in effects on the receptors assessed in this document. However, certain assessment topics which are not wholly marine or terrestrial e.g. ornithology and socio-economics, will have potential pathways to the onshore Project and as such may be affected by the onshore Project activities. As such, an assessment of these effects from the respective Project activities are presented where appropriate within the topic impact assessment chapters of this EIAR.

7.12 Ecosystem effects

As part of the EIAR, there is a requirement to understand how works associated with the construction, operation and maintenance and decommissioning phases of the Project have the potential to result in wider ecosystem effects. Throughout the ecological chapters of the EIAR, a holistic approach has been undertaken in the characterisation of the baseline and identification of impacts which have the potential to occur at an ecosystem scale, and particularly across trophic levels (e.g., potential impacts on prey species affecting their predators).

Where there is the potential for works associated with the construction, operation and maintenance and decommissioning phases of the Project to result in potential ecosystem effects, this is clearly stated within the receptor-specific chapter and a comprehensive assessment is undertaken.

7.13 Transboundary effects

Transboundary effects arise as a result of a development within one European Economic Area (EEA) state territory affecting the environment within another states EEA. As part of the EIA Regulations, it is required that a Project considers the potential for transboundary effects. The Convention on EIA (the Espoo Convention) is a United Nations Economic Commission for Europe which outlines the obligations of member states (including the UK) to assess how a potential environmental impact associated with an offshore development within one state's EEA may extend to another state's EEA.

Where there is a potential for transboundary effects to result from works associated with the construction, operation and maintenance and decommissioning phases of the Project, these have been assessed within the relevant topic-specific chapter as part of this EIAR. Where there is no potential for transboundary effects this is also clearly stated within the receptor-specific chapter.

7.14 References

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