TotalEnergies E&P North Sea UK Ltd

Culzean - Floating Offshore Wind Turbine Pilot Project

Environmental Impact Assessment Report – Chapter 6 - EIA Methodology

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GLOSSARY

TERMINOLOGY	DESCRIPTION
Culzean Floating Offshore Wind Pilot Project (the 'Project')	The entire Development including all offshore components and all project phases from pre-construction to decommissioning.
Environmental Impact Assessment (EIA)	The procedure to predict, minimise, measure and, if necessary, correct and compensate the impacts produced by any human action.
EIA Regulations	The Marine Works (Environmental Impact Assessment) Regulations 2007 requires that certain types of projects with the potential to significantly affect the environment have an environmental impact assessment before a marine licence decision is made.
Habitats Regulations Appraisal (HRA)	Under the Habitats Regulations, all competent authorities must consider whether any plan or project could affect a European site before it can be authorised or carried out. This includes considering whether it will have a 'Likely Significant Effect' (LSE) on a European site, and if so, they must carry out an 'Appropriate Assessment' (AA). This process is known as Habitats Regulations Appraisal (HRA)
Innovation and Targeted Oil and Gas (INTOG)	The Initial Plan Framework Sectoral Marine Plan for Offshore Wind for INTOG encompasses spatial opportunities and a strategic framework for future offshore wind developments within sustainable and suitable locations that will help deliver the wider United Kingdom (UK) and Scottish Government Net Zero targets. The 'IN' component of INTOG consists of small-scale innovative projects of 100 Megawatts (MW) or less. The aim of the 'TOG' component is to supplying renewable electricity directly to oil and gas infrastructure. The Culzean Floating Wind Pilot Project falls under the TOG component of INTOG.
Marine Licence Application (the 'Application')	A Marine Licence is granted under the Marine and Coastal Access Act 2009 for projects between 12-200 Nautical Miles (nm) from shore, or the Marine (Scotland) Act 2010 for projects between Mean High-Water Springs (MHWS) out to 12 nm from shore. The application includes HRA-supporting documentation (where required), an application letter, Marine Licence application form and this EIAR.
Maximum Design Parameters	The maximum range of design parameters of all infrastructure.
Net Zero	Refers to a government commitment to ensure the UK reduces its greenhouse gas emissions by 100% from 1990 levels by 2050 and in Scotland, the same target is set for 2045. If met, this would mean the amount of greenhouse gas emissions produced by the UK would be equal to or less than the emissions removed by the UK from the environment.
Project Design Envelope	The maximum range of design parameters of all infrastructure assessed as part of the EIA.
Study Area	Receptor specific area used to characterise the baseline.
Project Area	The extent of the immediate area surrounding the floating Wind Turbine Generator (WTG) and cable route as characterised by the extent of the seabed environmental and habitat surveys. Also referred to as the Survey Area where specifically relating to survey activities.
Survey Area	The area surveyed during site-specific surveys.
Floating Wind Turbine Generator (WTG)	Device that converts the kinetic energy of wind into electrical energy. Can be functionally divided into four parts: wind turbine, tower and transition piece, floating foundation, and mooring system.

ACRONYMS AND ABBREVIATIONS

ACRONYM/ ABBREVIATION	DEFINITION
AA	Appropriate Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
EEA	European Economic Area
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
Espoo	United Nations Economic Commission for Europe Convention on EIA
HRA	Habitats Regulations Appraisal
IEMA	Institute of Environmental Management and Assessment
INTOG	Innovation and Targeted Oil and Gas
km	kilometres
LSE	Likely Significant Effect
MD-LOT	Marine Directorate Licensing Operations Team
MHWS	Mean High Water Springs
MW	Megawatt
NO_2	Nitrous Oxide
SLVIA	Seascape and Landscape Visual Impact Assessment
SNH	Scottish Natural Heritage (now NatureScot)
SO_2	Sulphur Dioxide
WTG	Wind Turbine Generator
ZoI	Zone of Influence

6 EIA METHODOLOGY

6.1 Introduction

The primary aim of undertaking an Environmental Impact Assessment (EIA) is to ensure that the authority granting consent (the 'regulatory authority') for a particular project makes its decision in full knowledge of any potential significant effects on the environment.

EIA is a means of systematically evaluating a project's likely environmental impacts and effects, both beneficial and adverse. This helps ensure that the significance of the predicted effects, and the scope for reducing any adverse effects, is properly understood by the statutory and non-statutory consultees and enables the regulatory authority to make an informed decision. Early identification of potentially adverse environmental effects also leads to the identification and incorporation of appropriate mitigation measures into the project design and management.

This chapter sets out the approach that has been used in the EIA for the Culzean Floating Offshore Wind Turbine Pilot Project (the 'Project') in support of the Application. It provides an overview of the key stages that have been followed, in line with EIA best practice and in accordance with the 'EIA Regulations' as defined in Chapter 2: Legislation and Policy.

The assessment of impacts on each environmental receptor is provided in separate topic-specific chapters within this Environmental Impact Assessment Report (EIAR) (Chapters 7 to 16). An overview of the EIA process is provided in Figure 6-1.

6.2 EIA Scoping

The Scoping Report was submitted to Scottish Ministers (Via Marine Directorate – Licensing Operations Team (MD-LOT)), on 14th April 2023, who then consulted on it. The Scoping Report was submitted under Regulation 13 of The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended). The objective of the Scoping Report was to engage with the regulators, and relevant consultees in the EIA process, inviting them to provide comment on the proposed approach to the EIA, to ensure that a robust and proportionate EIAR is submitted in support of the Application. To engage in an informed manner, the Scoping Report provided information on:

- The proposed Project;
- The proposed approach to understand further the baseline conditions and address the potential environmental impacts through the EIA process;
- The topics to be scoped into the EIA, where potentially significant impacts may result from the Project on the physical, biological and human environment; and
- The topics to be scoped out of the EIA, where significant impacts are not anticipated with consideration of embedded and industry best practice mitigation.

The Scoping Opinion was received from Scottish Ministers on 20th July 2023. (Scottish Government, 2023). This EIAR incorporates the feedback gained through the Scoping Opinion and subsequent consultation. An outline of consultation activities and responses is provided in Chapter 5: Stakeholder Engagement and each chapter (Chapters 7 to 16) includes a summary of the stakeholder activity relevant to the specific topic.

Topics 'scoped out' for assessment within the EIA include Water and Sediment Quality, Seascape, Landscape and Visual Impact Assessment (SLVIA), Air Quality and Airborne Noise and Socioeconomics, as detailed further in Table 6-1, in accordance with the Scoping Opinion received from MD-LOT on behalf of Scottish Ministers (Scottish Government, 2023).

Each topic impact assessment chapter (Chapters 7 to 16) details the sub-impacts or receptors that have been scoped out of further impact assessment for each specific topic.

Table 6-1 Receptors scoped out from further consideration in the EIAR.

RECEPTOR	SPECIFIC IMPACT	ASSESSMENT METHOD	REASON SCOPED OUT OF EIA
Water and Sediment Quality	Impacts on water quality status of designated waters	2013 Environmental Baseline Survey results of contaminant levels in the area surrounding the floating Wind Turbine Generator (WTG) location.	Recorded contaminant levels within Block 23/21 are significantly below the threshold levels for Cefas guidelines. Increases in suspended sediments or disturbance effects associated with all stages of the Project would be temporary and localised, being limited by the tidal excursion (estimated to be 5 kilometres (km)) and returning to background levels after a short period on cessation of operations. There is no potential for the Project to result in impacts on the water quality status of designated waters during all stages of operations on the Project. The nearest designated waters have been shown to be over 200 km from the Project.
	Changes in water and sediment quality due to accidental discharges from vessels	Consideration of the project in proximity to designated water bodies and ongoing permitting regimes.	There are no designated water bodies within or in the vicinity of the Project Area; with the nearest site being located more than 200 km away. Activities may result in reduced water and sediment quality in the vicinity due to accidental discharges from vessels. The risk will be managed through the embedded mitigation measures, which will reduce the risk of accidental discharges. Implicit vessel and environmental protocols in line with international standards will also inherently limit the risk from vessel discharges and any onward impacts to water and sediment quality. Therefore, the impacts are likely to be short lived and localised.
Seascape, Landscape and Visual Impact Assessment (SLVIA)	Effects on Visual Amenity	Considerations of offshore visual receptors including those working at sea, on oil and gas platforms, on commercial or passenger vessels, or recreational boats were considered for this assessment.	The assessment concluded that these receptors will not be affected by the Project.

RECEPTOR	SPECIFIC IMPACT	ASSESSMENT METHOD	REASON SCOPED OUT OF EIA
	Seascape and Landscape	Consideration of potential impacts on landscape and coastal seascape character	There would be no visibility of the Floating WTG from any part of the mainland, there would be zero impacts and no effect on either coastal seascape character or inland landscape character.
Air Quality and Airborne Noise	Piling activities generating airborne noise / vibration that may impact other marine users	Consideration of impacts of in piling in conjunction with distance from shore and sensitive receptors	Pin piling is no longer a consideration for the Project since scoping was undertaken.
	Cable installation activities generating noise / vibration that may impact marine users	Increase above existing baseline for vessel use?	Noise emissions from these vessels are generally low and localised around the activity and will have limited duration. It is unlikely that any noise generated by Project activities will be above the existing baseline.
	Auxiliary construction activities (Project vessels, use of other machinery and generators) generating noise and vibrations that may impact marine users	Increase above existing baseline for vessel use?	Noise relating to auxiliary construction activity is expected to be localised around Project vessels and unlikely to result in any significant increase to baseline levels of airborne noise.
	Exhaust emissions from offshore vessels used in the construction phase having the potential to increase local ambient concentrations of sulphur dioxide (SO_2), Nitrous oxide (NO_2), and particulate matter that may impact marine users	Increase above existing baseline for vessel use?	Vessels will contribute, on a small scale, to atmospheric emissions. These atmospheric emissions are infrequent and negligible when compared to other shipping activity within the area. A supporting Vessel Management Plan will outline the strategies for vessel activities during all phases of the Project in compliance with relevant national and international policy and legislation. A Lifecycle Carbon Assessment has also been provided in Appendix A: Carbon Assessment.
	Operation of the WTG producing airborne noise / vibration	Comparison against existing noise levels and distance from shore / other offshore users	The operation of the WTG is expected to generate a low level of airborne noise. However, it is not expected that this airborne noise will be audible over existing airborne noise within the area.

RECEPTOR	SPECIFIC IMPACT	ASSESSMENT METHOD	REASON SCOPED OUT OF EIA
	Maintenance vessel and equipment activity noise, vibration or vessel emissions that may impact marine users	Increase above existing baseline for vessel use?	All maintenance works associated with the Project will be short-term. Associated noise-levels and vessel emissions will be of a lesser scale than those anticipated during the construction phase.
Socioeconomics	Employment in the supply chain	Consideration of Project duration.	The WTG to be used for the Project has already been sourced and is readily available. Construction will be short in duration (one month) and therefore effects on employment are expected to be very limited.
	Economic output effects in the supply chain	Consideration of Project duration and requirements for supply chain.	The WTG to be used for the Project has already been sourced and is readily available. Construction will be short in duration (one month) and therefore effects in the supply chain are expected to be very limited.
	Access to job opportunities by local residents	Consideration of Project duration.	The Project is solely located offshore. Construction will be short in duration (one month) and any local employment, resulting from the Project, is considered unlikely.
	Impacts on demand for housing and local services	Consideration of Project duration.	The Project is solely located offshore. Construction will be short in duration (one month) and any impact on housing, resulting from the Project, is considered unlikely.
	Impacts on the economic value of tourism and recreation activities	Consideration of project duration and other offshore users	The Project is solely located offshore. Construction will be short in duration (one month). No impacts on tourism are expected due to distance from shore.
	Socio-cultural effects	Consideration of project duration	The Project is solely located offshore. Construction will be short in duration (one month). No impacts on socio-culture effects are expected.

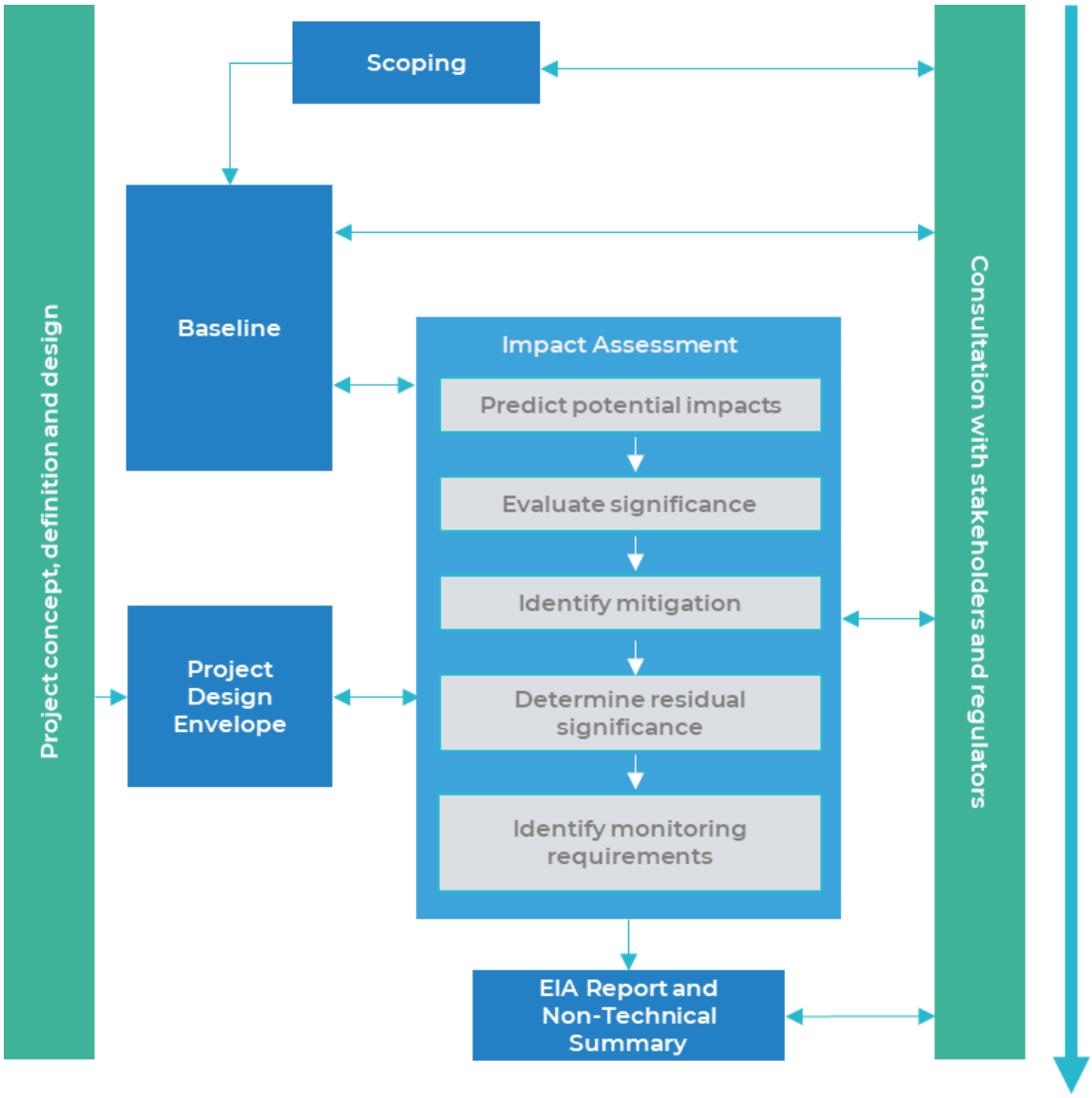

Figure 6-1 EIA Process

6.3 EIA Process

The EIA process methodically identifies the potential impacts that the Project could have on the environment. The process involves forming a detailed understanding of both the Project e.g. proposed construction, operation and maintenance and decommissioning activities, and the environment within and surrounding the Project location. The potential impacts of the Project are then evaluated to determine how the Project would affect the environmental receptors identified, and the significance of those effects are determined.

Figure 6-1 illustrates the EIA process, and the following bullet points outline the key steps identified:

1. Baseline characterisation to describe the relevant aspects of the receiving environment in which the Project will be set, including over a defined Study Area.
2. Description of the Project Design Envelope to set out the range of Project Design parameters used to determine the worst-case scenario for each impact.
3. Assessment of potential effects to identify and assess potentially significant effects that could arise from the Project, including direct, indirect, cumulative, inter-related, and transboundary effects (where relevant). The assessment of potential effects is informed by a worst-case scenario, the baseline characterisation, and feedback gained through consultation (including the Scoping Opinion).
4. Identification of mitigation and assessment of residual effects to reduce or remove such impacts (mitigation measures), where potential impacts are likely to be significant. Mitigation measures can either take the form of management measures required by legislation or industry practice (tertiary mitigation), those built into the design of the Project (primary mitigation), or implementation of additional measures (secondary mitigation). The residual effect of the Project on the environment is then assessed, accounting for all proposed mitigation measures.
5. Identification of relevant monitoring studies to monitor the predicted impacts of the Project over the long term.
6. Publication of EIAR and Non-Technical Summary and subsequent consultation with MD-LOT and other relevant stakeholders.

6.4 Baseline characterisation

The characterisation of the existing environment is undertaken to determine the baseline conditions in the area covered by the Project, including relevant Study Areas for those issues scoped into the EIAR. This involves the following steps:

- Define Study Areas for each receptor based on the relevant characteristics of the receptor (e.g. mobility / range);
- Review available information (e.g. publicly available data / reports and site-specific surveys);
- Identify likely or potential impacts that might be expected to arise from the Project;
- Determine if there is sufficient data to make the EIA judgements with sufficient confidence;
- If further data is required, ensure data gathered is targeted and directed at answering the key questions and filling key data gaps;
- Review information gathered to ensure the environmental baseline can be sufficiently characterised in appropriate detail; and
- Identify any remaining data gaps or limitations and describe the implications of these on the baseline characterisation.

The specific methodology to establish a robust baseline (upon which impacts can be assessed) for each receptor is set out under each topic chapter within this EIAR. This has been guided by feedback gained through the Scoping Opinion and consultation.

6.5 Assessment of Potential Effects

6.5.1 Identification of Impacts and Assessment Process

Central to the identification and assessment of potential effects of a project is the conceptual 'source-pathway-receptor' model, as illustrated in Figure 6-2. The 'source-pathway-receptor' model defines those receptors considered to be at risk. In the context of the source-pathway-receptor model, the source represents the origin of an impact (i.e. an activity related to the Project), the pathway represents the route through the environment by which the effects of an activity are transmitted, and the receptor is the environment or resource that receives the impact, which then causes an effect on the receptor. Where there is no known 'pathway' then no effect is considered to occur.

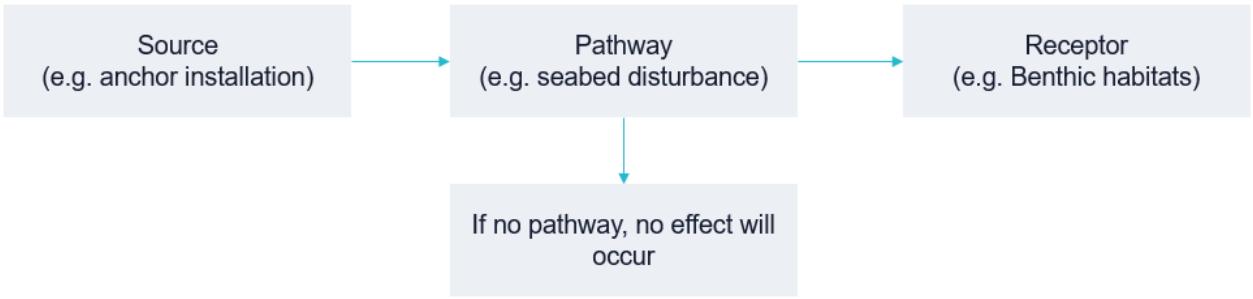

Figure 6-2 Source-pathway-receptor model

In the context of this EIA, an 'impact' is considered to result in an 'effect', if a pathway to a receptor exists. There is the potential for the Project to result in both adverse and positive impacts on the environment. The impact identification will consider whether a potential impact is adverse or positive, direct or indirect, temporary or permanent. The assessment process will then consider the significance of the resulting effect on the environment, either positive or negative, using the process outlined below (Figure 6-3).

For those potential impacts scoped into the EIA, this EIAR will describe the significance of the effect expected to result from the Project using a standard EIA methodology. The assessment process will consider the potential magnitude of the change to the baseline conditions arising from the Project and the sensitivity of the receptor under consideration, as well as any embedded mitigation measures (see Figure 6-3).

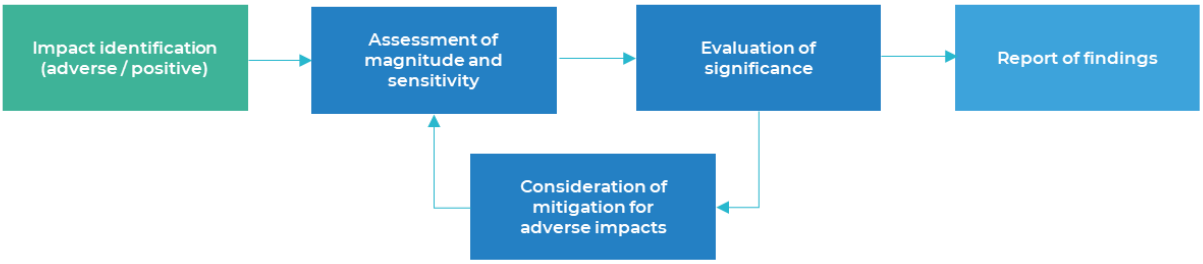

Figure 6-3 Assessment of effects process

6.5.2 Design Envelope Approach

The design of the Project will continue to evolve through to the post-consent phase, in line with the EIA process and the rapid and frequent advances in the offshore renewable industry and associated technology. In accordance with best practice, the Project will utilise a design envelope approach to inform the EIA. A design envelope approach allows a range of parameter values to be presented for each Project aspect. This ensures that flexibility is retained in the design so that the final Project can be accommodated within the Project's Marine Licence.

Within the EIA, the design parameters which represent the worst-case scenario for the impact assessments will be determined on a case-by-case basis, depending on the receptor and impact being considered. Under this approach, the combination of Project options constituting the worst-case scenario may differ from one receptor to another and from one impact to another. The result will be an EIA based on clearly defined environmental parameters that will define the range of project possibilities and hence the likely environmental impacts that could result from the Project.

6.5.3 Mitigation

In accordance with the Institute of Environmental Management and Assessment (IEMA) (2016) Guide to Delivering Quality Development, mitigation measures can fall into the following classifications:

- Primary mitigation - measures built into the design of the Project which reduce or avoid the likelihood or magnitude of an adverse environmental effect, including location or design. Primary mitigation measures do not require additional action to be taken;
- Secondary mitigation – are additional measures that require further action post-consent and do not form part of the fundamental design of the Project; and
- Tertiary mitigation – are measures that are required through standard practice or to meet legislative requirements and are independent of the EIA process (i.e. they would be implemented regardless of the findings of the EIA).

6.5.3.1 Consideration of embedded and secondary mitigation measures

Embedded mitigation measures are primary or tertiary mitigation measures, identified and adopted as part of the evolution of the design for the Project, that reduce the potential for impacts to the environment. Such measures are considered in the assessment of effect significance (i.e. they are assumed to form part of the design of the Project prior to any assessment). Secondary mitigation measures are implemented to further reduce environmental effects to 'not significant' levels where the initial assessment concludes there is the potential for a significant effect to occur.

6.6 Assessing Impact Significance

6.6.1 Overview

The EIA Regulations, as defined in Chapter 2: Legislation and Policy, require that the EIA should consider the likely significant environmental impacts of the Project. The decision process related to defining whether or not a project is likely to significantly impact the environment is the core principle of the EIA process. The regulations themselves do not provide a specific definition of "significance". However, the methods used for identifying and assessing impacts should be transparent and verifiable.

The method detailed here has been developed by reference to the latest EIA principals and guidance provided by Scottish National Heritage (SNH) (now NatureScot) in their handbook on EIA (SNH, 2018), 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 the Marine Scotland (2018) Consenting and Licensing Guidance for Offshore Wind, Wave and Tidal Energy Applications. Topic-specific guidance is listed in the topic assessment chapters where these have informed the assessment methodology. In some instances, this may deviate from the generic approach presented here.

For each impact, the assessment identifies a receptor's sensitivity to that effect and implements a systematic approach to understand the consequence and significance of the effect associated with the impact under consideration. The process considers the following:

- Identification of receptor and impact (including duration, timing and nature of impact);
- Definition of sensitivity of receptor;
- Definition of magnitude of impact; and
- Evaluation of consequence of the effect on the receptor, considering the sensitivity of receptor and magnitude of impact.

Where data gaps or limitations in the EIA exist, these are noted within the relevant topic assessment chapters. Where these data gaps or limitations present difficulties in assigning the sensitivity of the receptor or the potential magnitude of impact this will also be noted. A precautionary approach will be undertaken with the understanding that an impact cannot be assigned as 'not significant' where insufficient evidence exists to support this conclusion.

Despite the assessment of impact significance being a subjective process, a defined methodology, outlined below, is used to make the assessment as objective as possible and consistent across different topics. As the environmental

factors under consideration can vary considerably depending on what is being assessed, there is some variation in this process between topics. Deviations from the outlined process are highlighted within the topic specific chapters.

6.6.2 Defining Receptor Sensitivity

The sensitivity of a receptor to an impact combines the value of the receptor with its ability to tolerate, adapt to and recover from changes in the environment. Expert judgement is particularly important when determining the sensitivity of receptors. Sensitivity of a receptor is based on the following factors:

- Tolerance to change – ability to withstand / accommodate an impact;
- Recoverability – ability to recover from an impact (i.e. ability to return to baseline state);
- Adaptability – ability to avoid or adapt to an impact; and
- Value – importance (e.g. based on conservation value / protected status or economic value).

The scale of sensitivity will be classed as 'negligible, low, medium or high'. Example definitions are provided in Table 6-2. However, in each topic chapter within the EIAR, receptor-specific sensitivity criteria are defined, that are tailored to each topic and informed by guidance, legislation, and/or expert judgment.

Table 6-2 Example receptor sensitivity criteria

SENSITIVITY	DEFINITION
High	• Receptor with no capacity to accommodate a particular effect and no ability to recover or adapt; and/or • Receptor of conservation / economic value to an extent that is internationally or nationally important.
Medium	• Receptor with low capacity to accommodate a particular effect with low ability to recover or adapt; and/or • Receptor of conservation / economic value to an extent that is regionally important.
Low	• Receptor has some tolerance to accommodate a particular effect or will be able to recover or adapt; and/or • Receptor of conservation / economic value to an extent that is locally important.
Negligible	• Receptor is generally tolerant and can accommodate a particular effect without the need to recover or adapt; and/or • Receptor is widespread / common and is of low conservation / economic value.

6.6.3 Defining Impact Magnitude

Defining impact magnitude requires consideration of the following factors:

- Spatial extent – the area over which the impact will occur;
- Duration – the period of time over which the impact will occur;
- Frequency – the number of times the impact will occur over the Project lifespan;

- Intensity - the severity of the impact; and
- Likelihood - the probability that the impact will occur.

The categorisation of magnitude of impact will vary for specific pathways / receptors / topic specific chapters but will broadly follow the definitions outlined in Table 6-3.

Table 6-3 Example impact magnitude criteria

MAGNITUDE	CRITERIA
High	• Total change or major alteration to key elements / features of the baseline conditions; • Impact 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	• Partial change or alteration to one or more key elements / features of the baseline conditions; • Impact 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	• Minor shift away from the baseline conditions; • Impact occurs over a local to medium scale / spatial extent and/or has a short to medium-term duration; and/or • Impact is unlikely to occur or at a low frequency (occurring occasionally / intermittently for short periods of time at a low intensity).
Negligible	• Very slight change from baseline conditions; • Impact is highly localised and short term with full rapid recovery expected to result in very slight or imperceptible changes to baseline conditions or receptor population; and/or • The impact is very unlikely to occur and if it does will occur at very low frequency or intensity.

Magnitude of an impact is based on a variety of parameters. Definitions provided above are for guidance only and may not be appropriate for all topics or impacts. Expert judgement is used to determine the most appropriate magnitude ranking and this is explained through the narrative of the assessment.

6.6.4 Evaluation of Consequence and Significance

The consideration of the magnitude of a potential impact and sensitivity of the receptor will determine the overall consequence of the effect, which is used to understand potential significance. This determination may be quantitative or qualitative and often informed by expert judgement. Table 6-4 sets out how the magnitude of impact and the sensitivity of the receptor are combined to provide an assessment of the consequence of effect.

Table 6-4 Consequence of effect

CONSEQUENCE OF EFFECT		MAGNITUDE			
		NEGLIGIBLE	LOW	MEDIUM	HIGH
SENSITIVITY	NEGLIGIBLE	Negligible	Negligible	Negligible	Negligible
	LOW	Negligible	Negligible	Minor	Minor
	MEDIUM	Negligible	Minor	Moderate	Moderate
	HIGH	Negligible	Minor	Moderate	Major

The categories provide a threshold to determine whether significant effects may result from the Project, with Moderate and Major effects possibly being 'significant' in EIA terms, as highlighted in amber and red. A typical categorisation is shown below (Table 6-5), noting that effects can be both beneficial or adverse.

Table 6-5 Definitions of consequence of effect and associated significance

CATEGORY	DEFINITION	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 effect or small-scale temporary changes.	Not Significant
Negligible	No detectable change to the environment or receptor resulting in no significant effect.	Not Significant

Where the impact assessment identifies that an aspect of the Project is likely to give rise to significant environmental effects, secondary mitigation measures, above and beyond any embedded mitigation (as defined in Section 6.5.3) will be incorporated into the assessment process to avoid impacts or reduce them to acceptable levels. At this point the impact is reassessed, considering all mitigations to determine the residual effect.

6.7 Cumulative Effects Assessment Approach

As well as considering impacts from the Project alone, the EIA Regulations require a consideration of potential impacts that could occur cumulatively with other relevant projects, plans and activities, that could result in a cumulative effect.

The EIA will consider projects that are 'reasonably foreseeable' and that will coincide with the Project, such as:

- Projects either already constructed or those under construction
- Approved projects, awaiting implementation; and
- Proposals awaiting determination within the planning process with design information in the public domain, including other Innovation and Targeted Oil and Gas (INTOG) projects and ScotWind offshore wind farms.

Potential cumulative Projects are based on defined Zones of Influence (ZoI) for each EIA receptor (where relevant). This was then reviewed taking potential pathways of impact (e.g., temporal and physical overlap of impacts) into account. The most up-to-date publicly available information in relation to the relevant project parameters was used to inform the cumulative effects assessment (as relevant).

6.7.1 Compilation of the Cumulative Project list

The first stage of compiling the cumulative project list involves defining ZoIs for each EIA receptor, as listed in Table 6-6. The ZoI's provide the maximum search areas for other projects to be screened into the cumulative project list. It was then to determine whether there were potential channels for cumulative effect, taking into consideration potential impact pathways and/or the potential for physical or temporal overlap of impacts from other project activities and those of the Project.

A separate process was conducted for Chapter 11: Ornithology, where the consideration of cumulative impacts is based on the results of the Ornithological impact assessment, together with the expert judgement of the specialist consultant and consultation with relevant stakeholders.

Table 6-6 ZoI for EIA receptors

EIA RECEPTOR	ZOI
Marine Physical Processes	• 10 km
Benthic Ecology	• 10 km
Fish and shellfish Ecology	• 10 km
Marine Mammals and Other Megafauna	• 20 km
Commercial Fisheries	• 50 km
Shipping and Navigation	• 50 km

EIA RECEPTOR	ZOI
Marine Archaeology	• 10 km
Aviation	• standalone
Other sea users	• 10 km

6.8 Inter-related Effects

Inter-relationships are defined as the interaction between the impacts assessed within different topic assessment chapters (e.g., impacts on fish and shellfish may indirectly impact commercial fisheries) on a receptor. Inter-relationships have been assessed through the consideration of the potential interaction of all impacts across topics on a given receptor. The approach includes the consideration of inter-dependencies where one topic draws upon the findings of another. Where relevant, inter-relationships with other topic assessment chapters are identified within each topic impact assessment chapter.

6.9 Transboundary Effects

Transboundary effects arise when impacts from a project within one European Economic Area (EEA) state's territory affect the environment of another EEA state(s). The EIA Regulations require the assessment of transboundary effects. The United Nations Economic Commission for Europe Convention on EIA ('Espoo') sets out the obligations of involved Parties, including the UK, to assess the environmental impact of certain activities and the obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant environmental impact across boundaries. Where there is a potential for a transboundary effect, from the Project, these are assessed and detailed within the relevant topic specific chapter.

Potential transboundary impacts are identified and assessed within each topic chapter within this EIAR. Where transboundary impacts have been scoped out of assessment within this EIAR, this is also stated up-front in each chapter (where applicable).

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