CALEDONIA
Offshore Wind Farm

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Volume 1 Overview Chapters

Chapter 7 EIA Methodology

Caledonia Offshore Wind Farm Ltd

5th Floor Atria One, 144 Morrison Street, Edinburgh, EH3 8EX

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Volume 1 Chapter 7 EIA Methodology

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Acronyms and Abbreviations

BSI	British Standards Institute
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CIA	Cumulative Impact Assessment
CMS	Construction Method Statement
COWRIE	Collaborative Offshore Wind Research into the Environment
EcIA	Ecological Impact Assessment
EEA	European Economic Area
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMF	Electromagnetic Fields
EMP	Environmental Management Plans
EU	European Union
ICNIRP	International Commission to Non-Ionizing Radiation Protection
IEMA	Institute of Environmental Management and Protection
km	kilometres
MD-LOT	Marine Directorate - Licensing Operations Team
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MW	Megawatt
nm	nautical mile
O&M	Operations and Maintenance

OEC	Offshore Export Cable
OECC	Offshore Export Cable Corridor
ONEC	Onshore Export Cable Corridor
OSP	Offshore Substation Platform
OfTI	Offshore Transmission Infrastructure
OnTI	Onshore Transmission Infrastructure
OWF	Offshore Wind Farm
PINS	Planning Inspectorate
PPP	Planning Permission in Principle
RLB	Red Line Boundary
SNH	Scottish National Heritage
UK	United Kingdom
ZoI	Zones of Influence

7 EIA Methodology

7.1 Introduction

7.1.1.1 This chapter presents an overview of the methodology that has been used in the production of the Environmental Impact Assessment Report (EIAR) to identify and evaluate the likely significant environmental effects of the Proposed Development on the receiving environment.

7.1.1.2 Environmental Impact Assessment (EIA) is a systematic evidence-based approach that must be undertaken for certain categories of development before they can be given consent. The purpose of an EIA is to assess a development's potential significant environmental effects (positive or negative) and determine how these can be reduced or enhanced depending upon their nature. This enables the predicted effects of a development to be understood by statutory consultees, and other interested parties such as members of the public, and the relevant determining authorities before a consenting decision is made.

7.1.1.3 This chapter describes the assessment methodology used throughout the EIAR for the identification, evaluation and assessment of likely significant effects during construction, operation and maintenance (O&M), and decommissioning phases of the Proposed Development. It also describes the assessment methodology for the consideration of cumulative and in-combination effects. Information on discipline specific methodologies, including surveys, is presented within relevant technical assessment chapters.

7.1.1.4 As identified within Volume 1, Chapter 1: Introduction, this EIAR has been developed to support applications for consent for the Proposed Development under Section 36 of the Electricity Act 1989 (United Kingdom (UK) Parliament, 1989[1]), Marine Licence applications (under the provisions of Part 4 of the Marine (Scotland) Act 2010 (Scottish Government 2010[2]) and Part 4 of the Marine and Coastal Access Act 2009 (UK Parliament, 2009[3]) and a Planning Permission in Principle (PPP) application under the Town and Country Planning (Scotland) Act 1997 (as amended) (UK Parliament, 1997[4]).

7.1.1.5 To ensure the Proposed Development is assessed as a whole to provide a cohesive and comprehensive EIA, Caledonia Offshore Wind Farm Ltd (the Applicant) has prepared a joint onshore and offshore EIAR with respect to the consenting applications. The general methodology presented in this chapter is applicable to both the offshore assessments, onshore assessments and combined onshore and offshore assessments in this EIAR. Any differences in EIA methodology between onshore and offshore assessments is set out under relevant sub-headings in this chapter.

7.1.1.6 As per Volume 1, Chapter 5: Proposed Development Phasing, the Proposed Development is being brought forward in a phased manner as a result of a grid capacity availability. As a result, the Proposed Development (Offshore) has been split into Caledonia North and Caledonia South, with separate consents sought for each. This EIAR presents an assessment of the Proposed Development (Offshore) (Caledonia North and Caledonia South as well as all associated Offshore Transmission Infrastructure (OfTi) in Volume 2; and individual assessments of Caledonia North and Caledonia South (including associated OfTI for each) in Volumes 3 and 4, respectively.

7.2 Legislation, Policy and Guidance

7.2.1.1 In accordance with European Union (EU) Directive on the assessment of the effects of certain public and private projects on the environment (EIA Directive) (European Parliament and Council, 2011[5]) (2011/92/EU, as amended by Directive 2014/52/EU), an EIA was required to be prepared if a development is likely to have a significant effect on the environment due to factors such as its size, nature or location. The EIA Directive was implemented in the UK and Scotland by a series of statutory instruments. Following the UK's withdrawal from the EU on 31 December 2020, amendments have been made to EIA Regulations, such that they continue to be effective and maintain the same standards of protection now that the UK is no longer part of the EU. The amendments are minor and technical in nature - the legislation continues to operate as it did previously.

7.2.1.2 The Proposed Development is subject to the requirement for an EIA under the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (UK Parliament, 2007[6]) (for Scottish offshore waters) and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (Scottish Parliament, 2017[7]) (for Scottish inshore waters) as the construction and operation of an OWF comprises "regulated activities" within the meaning of the Regulations. Electricity generation projects of >1 Megawatt (MW) which fall inside UK territorial waters and require consent under Section 36 of the Electricity Act 1989, are also required to provide an EIA under the terms of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (Scottish Parliament, 2017a[8]). In respect of the Onshore Transmission Infrastructure (OnTI), the relevant EIA regulations are the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (Scottish Parliament, 2017b[9]).

7.2.1.3 These regulations (collectively referred to hereafter as the EIA Regulations) establish the statutory process and minimum requirements of the EIAR.

7.2.1.4 This EIAR has been carried out in accordance with the EIA Regulations and also draws upon a number of additional policy, guidance and best practice documents, which are described in the following sections. Key legislation, policies and other material considerations relevant to the Proposed Development are set out within Volume 1, Chapter 2: Legislation and Policy.

7.2.2 Offshore Legislation, Policy and Guidance

7.2.2.1 The assessment of effects methodology employed in the preparation of the offshore volumes of this EIAR has been informed by the following relevant legislation, policy and guidance:

- The Conservation (Natural Habitats &c.) Regulations 1994 (UK Parliament, 1994[10]) – applies in Scotland, extending to Scottish inshore waters (0nm to 12 nautical mile (nm));
- The Conservation of Habitats and Species Regulations 2017 (UK Parliament, 2017[11]) – only applies in Scotland for specific activities (reserved matters) including consent applications under Sections 36 and 37 of the Electricity Act 1989;
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (UK Parliament, 2017a[12]) – applies to the Scottish offshore region (beyond 12nm);
- The Wildlife and Countryside Act 1981 (as amended) (UK Parliament, 1981[13]);
- Marine Scotland Consenting and Licensing Guidance: For Offshore Wind, Wave and Tidal Energy Applications (Marine Scotland, 2018[14]);
- Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine (Chartered Institute of Ecology and Environmental Management (CIEEM), 2018[15]);
- A Handbook on Environmental Impact Assessment: Guidance for Competent Authorities, Consultees and Others Involved in the Environmental Impact Assessment Process in Scotland (NatureScot, 2018[16]);
- Environmental Impact Assessment for Offshore Renewable Energy Projects (British Standards Institute (BSI), 2015[17]);
- Delivering Proportionate EIA. A Collaborative Strategy for Enhancing UK EIA Practice (Institute of Environmental Management and Assessment (IEMA), 2017[18]);
- Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms (RenewableUK, 2013[19]);

- Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Centre for Environment, Fisheries and Aquaculture Science (Cefas), 2012[20]); and
- A Review of Assessment Methodologies for Offshore Wind Farms (Collaborative Offshore Wind Research into The Environment (COWRIE) METH-08-08) (Maclean et al., 2009[21]).

7.2.2.2 Each technical assessment also refers to, where applicable, a range of specific guidance documents in order to undertake their assessments; this is set out as appropriate within the offshore EIAR topic chapters.

7.2.3 Onshore Legislation

7.2.3.1 The assessment of effects methodology employed in the preparation of the onshore volume of this EIAR has been informed by relevant legislation, policy and guidance:

- The Conservation (Natural Habitats &c.) Regulations 1994 (UK Parliament, 1994[22]);
- The Wildlife and Countryside Act 1981 (as amended) (UK Parliament, 1981[23]);
- IEMA Environmental Impact Assessment Guide to Shaping Quality Development (IEMA, 2015[24]);
- IEMA Environmental Impact Assessment Guide to Delivering Quality Development IEMA, 2016[25]);
- Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (IEMA, 2017[18]);
- Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018[15]);
- Planning Advice Note (PAN) 1/2013 Environmental Impact Assessment (Scottish Government, 2017c[26]);
- Advice Note Seventeen: Cumulative Effects assessment (Planning Inspectorate (PINS), 2017[27]); and
- A Handbook on Environmental Impact Assessment: Guidance for Competent Authorities, Consultees and Others Involved in the Environmental Impact Assessment Process in Scotland (NatureScot, 2018[16]).

7.2.3.2 Each technical assessment also refers to a range of specific guidance documents in order to undertake their assessments, this is set out as appropriate within the onshore EIAR topic chapters.

7.3 EIA Scope

7.3.1.1 EIA scoping is a non-mandatory part of the EIA process in which the applicant identifies the key issues to be assessed in detail as part of the EIA and aspects of the assessment methodology that will be used. Scoping is an important preliminary step in the EIA process, which sets the context for agreeing the content of the EIAR.

7.3.1.2 A guiding principle of EIA is to undertake a proportionate level of assessment to the risk posed. The aim of EIA scoping is to determine those environmental topics that could identify significant effects as a result of the Proposed Development and therefore need to be assessed further, and equally those topics for which there is not likely to be significant effects and therefore do not need to be considered further.

7.3.1.3 An Offshore Scoping Report was submitted to Scottish Ministers, via Marine Scotland – Licensing Operations Team[i], in September 2022. The Offshore Scoping Report considered all activities associated with the Proposed Development extending seawards from Mean High Water Springs (MHWS). This includes the Wind Turbine Generators, the inter-array and interconnector cabling, any Offshore Substation Platform (OSP) infrastructure requirements, the Offshore Export Cables (OECs) and Landfall Site.

7.3.1.4 An Onshore Scoping Report was submitted to Aberdeenshire Council in December 2022. The Onshore Scoping Report considered all activities associated with the OnTI extending landwards from Mean Low Water Springs (MLWS). This included the Landfall Site, Onshore Export Cable Corridor (ONEC), Onshore Substation and associated ancillary infrastructure.

7.3.1.5 A formal Scoping Opinion from Marine Directorate - Licensing Operations Team (MD-LOT) and Aberdeenshire Council was received in January 2023 and February 2023 respectively. The EIA Scoping Requests (including Scoping Reports) and Scoping Opinions are included in Volume 7, Appendix 7 and 8 to this EIAR. The EIA regulations state that where a Scoping Opinion has been issued, the EIAR must be based on that Scoping Opinion and include the requisite information to reach a reasoned conclusion on the significant effects of a development on the environment. The Scoping Opinion received from MD-LOT and Aberdeenshire Council and the feedback contained therein from consultation bodies has been considered and addressed within each technical chapter of this EIAR.

[i] In 2023, Marine Scotland was renamed Marine Directorate, and thus the marine licensing and consents team is now referred to as Marine Directorate Licensing Operations Team (MD-LOT).

7.3.2 Topics Scoped out of the EIAR

7.3.2.1 As part of the Onshore and Offshore Scoping Reports issued to Aberdeenshire Council and MD-LOT respectively, it was proposed that certain aspects were scoped out of further assessment on the basis that significant environmental effects were not anticipated. Topics proposed to be scoped out of further assessment included:

- Onshore topics of:
  - Air Quality;
  - Human Health (as a standalone chapter); and
  - Major Accidents and Disasters[ii].
- Offshore topics of:
  - Human Health;
  - Offshore Airborne Noise and Vibration;
  - Offshore Air Quality; and
  - Major Accidents and Disasters.

7.3.2.2 Table 7-1 presents the topics that were proposed scoped out of further assessment and the justification.

Table 7-1: Topics Scoped out of the EIAR

Topic Scoped Out	Justification	Further Engagement
Onshore		
Air Quality	It is considered that the best-practice measures included within the Outline Construction Environmental Management Plan (as agreed with Aberdeenshire Council), will provide the necessary prevention and mitigation such that the dust emission magnitude will be low and therefore the effects of dust soiling at residential properties and ecological receptors during the construction phase of the OnTI Red Line Boundary (RLB) will be	Further targeted consultation was held with Aberdeenshire Council Environmental Health Officer (EHO) to highlight refinements made to the OnTI RLB post-scoping and the reduced number of air quality receptors. The council agreed they were happy air quality could be scoped out of further assessment in light of the proposed best-practice mitigation measures.

[ii] Major accidents and disasters offshore has been considered within Volume 7B Appendix 13-1: Water Framework Directive (WFD) Regulatory Compliance Assessment

Topic Scoped Out	Justification	Further Engagement
	negligible. Negligible operational impacts are anticipated.	
Human Health	Human health impacts relating to landscape and visual (amenity), ground condition hazards, and noise disturbance have been considered within their respective chapters. Impacts to human health from construction dust soiling have been scoped out as per the details provided above. Human health impacts due to Electromagnetic Fields (EMFs) have been scoped out. Human health receptors will be located outside the perimeter fence of the Onshore Substations where levels of EMFs fall to negligible (Energy Networks Association, 2017[28]). The manufacturing of Onshore Export Cable Circuits will ensure that levels of EMF exposure would be significantly lower than the guideline for public exposure limits recommended by the International Commission on Non-Ionizing Radiation Protection (ICNIRP, 1998[29])	Further targeted consultation was held with Aberdeenshire Council EHO to agree scoping out of construction dust impacts.
Major Accidents and Disasters	Major accidents risks as a direct result of the Proposed Development (Onshore) will be avoided as elements will be designed in accordance with industry standards and the anticipated environmental conditions. Electrical systems will be designed to the relevant safety standards and safe systems of work and pollution prevention will be implemented. External major accidents associated	No further consultation required. Scoped out as part of the Onshore EIA Scoping Report.

Topic Scoped Out	Justification	Further Engagement
	with ground conditions (e.g., historic contamination) are discussed in Volume 5, Chapter 7: Geology, Soils and Contaminated Land. Disasters as a result of adverse weather conditions or natural hazards is low. Potential flood risk has been considered within Volume 5, Chapter 6: Hydrology and Hydrogeology. Climate hazards which have the potential to result in disaster during operational phases are considered within the Volume 6, Chapter3: Climate Change Resilience Chapter.	
Offshore		
Human Health	A stand-alone chapter for human health has not been provided as potential effects on human health are considered within technical topics such as airborne noise and air quality (Volume 5, Chapter 8: Airborne Noise and Vibration).	No further consultation required. Scoped out as part of the Offshore EIA Scoping Report.
Offshore Airborne Noise and Vibration	Potential airborne noise and vibration effects on human receptors have been identified and includes piling and auxiliary construction activities generating airborne noise/vibration that may impact other marine users, cable installation activities (including in the intertidal area) that may impact marine users and onshore human receptors and operation of Wind Turbine Generators producing airborne noise/vibration. Noting the proposed embedded mitigation for the development of and adherence to a Construction Method Statement (CMS), Environmental Management	No further consultation required. Scoped out as part of the Offshore EIA Scoping Report.

Topic Scoped Out	Justification	Further Engagement
	Plan (EMP) and Piling Strategy no significant effects are anticipated and airborne noise and vibration were therefore scoped out on this basis.	
Offshore Air Quality	Offshore air quality was scoped out of any further assessment as there is expected to be only a negligible impact upon the identified receptors, noting the proposed embedded mitigation for the development of, and adherence to, a CMS, EMP and Vessel Management Plan.	No further consultation required. Scoped out as part of the Offshore EIA Scoping Report.

7.4 Consultation

7.4.1.1 Feedback on the proposed EIA methodology was received as part of the Scoping Opinion received from MD-LOT and Aberdeenshire Council. A summary of the key feedback received on the proposed EIA methodology are outlined below in Table 7-2, together with how these issues have been considered in the production of this chapter.

Table 7-2: Scoping Opinion Response

Consultee	Comment	Response
Aberdeenshire Council	Detailed survey work would be required to inform the EIAR. Following analysis of the aspects of the environment which would be likely to be significantly affected, a detailed assessment of the effects themselves would be required along with mitigation measures proposed.	The EIA methodology is described in detail in this chapter (Volume 1, Chapter 7) including the identification, evaluation and assessment of likely significant cumulative and inter-related effects during construction, operation and maintenance, and decommissioning phases of the Proposed Development. Details in regards surveys undertaken are contained within individual topic chapters of the EIAR.
MD-LOT	The Scottish Ministers advise that as more than one set of environmental impact assessment regulations apply the most stringent requirements must be adhered to in terms of, for example, consultation timelines and public notice requirements.	The Applicant acknowledges that more than one set of EIA Regulations apply to the assessment of the Proposed Development, and confirms that the most stringent requirements have been adhered to with regards to consultation timelines and public notice requirements (see Volume 1, Chapter 8: Stakeholder Engagement and Consultation).
MD-LOT	Section 3.1.1.1 of the Scoping Report states that detailed project design will be ongoing throughout the EIA and pre-construction phase and therefore the description of the Proposed Development is indicative and only intended to provide wider context. Although an indicative design envelope has been provided in table 3.1, the EIA Report must include a full and	Descriptions of key project infrastructure, construction methodologies and O&M activities are provided within Volume 1: Chapter 3: Proposed Development Description (Offshore) and Volume 1, Chapter 4: Proposed Development Description (Onshore). Information presented within these chapters has provided the basis for all assessments presented within the EIAR. In addition, as part of

Consultee	Comment	Response
	detailed description of all options Considered within the design envelope.	Volume 1, Chapter 6: Site Selection and Alternatives, a summary of refinements to the design envelope since scoping (onshore and offshore) has been provided.
MD-LOT	The Scottish Ministers note the Developer's intention to apply a 'Design Envelope' approach. Where the details of the Proposed Development cannot be defined precisely, the Developer will apply a worst-case scenario, as set out in section 3.1.3 and table 3.1 of the Scoping Report. The Scottish Ministers direct the Developer to Scottish Government guidance "Electricity Act 1989 – section 36 applications: guidance for applicants on using the design envelope".	The Applicant has applied the design envelope approach to inform assessment of the Proposed Development, following Scottish Government (2022[30]) guidance for such applications under Section 36 of the Electricity Act 1989. In each case, assessments have considered the worst-case scenario based on the parameters set out in Volume 1: Chapter 3: Proposed Development Description (Offshore) and Volume 1, Chapter 4: Proposed Development Description (Onshore).
MD-LOT	The Scottish Ministers advise that the Developer must make every attempt to narrow the range of options. Where flexibility in the design envelope is required, this must be defined within the EIA Report and the reasons for requiring such flexibility clearly stated. At the time of application, the parameters of the Proposed Development should not be so wide-ranging as to represent effectively different projects. To address any uncertainty, the EIA Report must consider the potential impacts associated with each of the different scenarios. The criteria for selecting the	The Proposed Development has utilised the design envelope approach to inform this EIAR (also see Section 7.6). This approach enables a range of parameter values to be presented, and thus assessed, for each aspect of the Proposed Development, providing the flexibility to allow for further refinement of the design. The worst-case scenario for specific impact assessments have been determined on a case-by-case basis, depending on the receptor and impact being considered, and these are described in each topic-specific EIA chapter. As

Consultee	Comment	Response
	worst case and the most likely scenario, together with the potential impacts arising from these, must also be described. The parameters of the Proposed Development must be clearly and consistently defined in the applications for the marine licences and the accompanying EIA Report.	part of Volume 1: Chapter 6: Site Selection and Alternatives, a summary of refinements to the design envelope since scoping (onshore and offshore) has been provided.
MD-LOT	The EIA Report must be in accordance with the EIA Regulations and the Scottish Ministers draw your attention in particular to, regulation 6 of the 2017 MW Regulations, regulation 5 of the 2017 EW Regulations and regulation 12 of the 2007 MW Regulations. In accordance with the EIA Regulations, the Scottish Ministers advise that the EIA Report must be based on this Scoping Opinion.	The necessary information required to satisfy Regulation 6 of The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (Scottish Parliament, 2017[7]), Regulation 5 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (Scottish Parliament, 2017a[8]) and Regulation 12 of The Marine Works (Environmental Impact Assessment) Regulations 2007 (UK Parliament, 2007[6]) has been included within this EIAR. In summary, this includes, among other required details, a description of the proposed works, likely significant effects of the works on the environment, consideration of potential alternatives, relevant charts/maps and non-technical summary. This EIAR has been based on the Scoping Opinions provided by Marine Directorate (2023) and Aberdeenshire Council (2023) (see Volume 7, Appendix 3: Offshore Scoping Opinion and Volume 7, Appendix 4: Onshore Scoping Opinion), noting a scoping validation note has been prepared to accompany the application given the duration

Consultee	Comment	Response
		(greater than 12 months) since receipt of the Offshore Scoping Opinion (Volume 7 Appendix 3: Offshore Scoping Opinion).

7.5 The EIA Process

7.5.1.1 The EIA process systematically identifies the potential impacts that the Proposed Development could have on the environment. The process involves developing a detailed understanding of the proposed construction, O&M and decommissioning activities as well as the environment where the Proposed Development is located. The potential impacts of the Proposed Development are then evaluated to determine the potential effect on the environment, and the significance of those effects.

7.5.1.2 EIA is an iterative process and is used to inform the development of the final design. Where initial assessments of the development, informed by the baseline environment and stakeholder engagement, identify unacceptable likely significant effects, alterations to the Proposed Development are made to reduce the significance of negative environmental effects. In accordance with the mitigation hierarchy efforts are made first to avoid or reduce potential significant environmental effects through iterative design alterations. This is presented as embedded mitigation (see section 7.9.2) within each technical chapter of this EIAR.

7.5.1.3 The EIA Regulations also require that EIARs include "a description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects." The site selection process and geographical alternatives considered taking account of the potential environmental effects are presented in Volume 1 Chapter 6: Site Selection and Alternatives.

7.5.1.4 A duty is placed on those holding an electricity generation licence under Schedule 9 of the Electricity Act 1989 (UK Parliament, 1989[1]) to have regard to the preservation of amenity. Schedule 9 requires the relevant licence holder when formulating proposals in connection with the supply of electricity to take account of the effects the proposals would have on the natural beauty of the countryside, on any flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest. Volume 1 Chapter 6: Site Selection and Alternatives presents the site selection process as having regard to the preservation of amenity through environmental and technical studies and targeted consultation with key stakeholders.

7.5.1.5 The EIA process and the relationship with the design process and stakeholder engagement is shown in Plate 7-1, as adapted from IEMA (2016[31]) guidance.

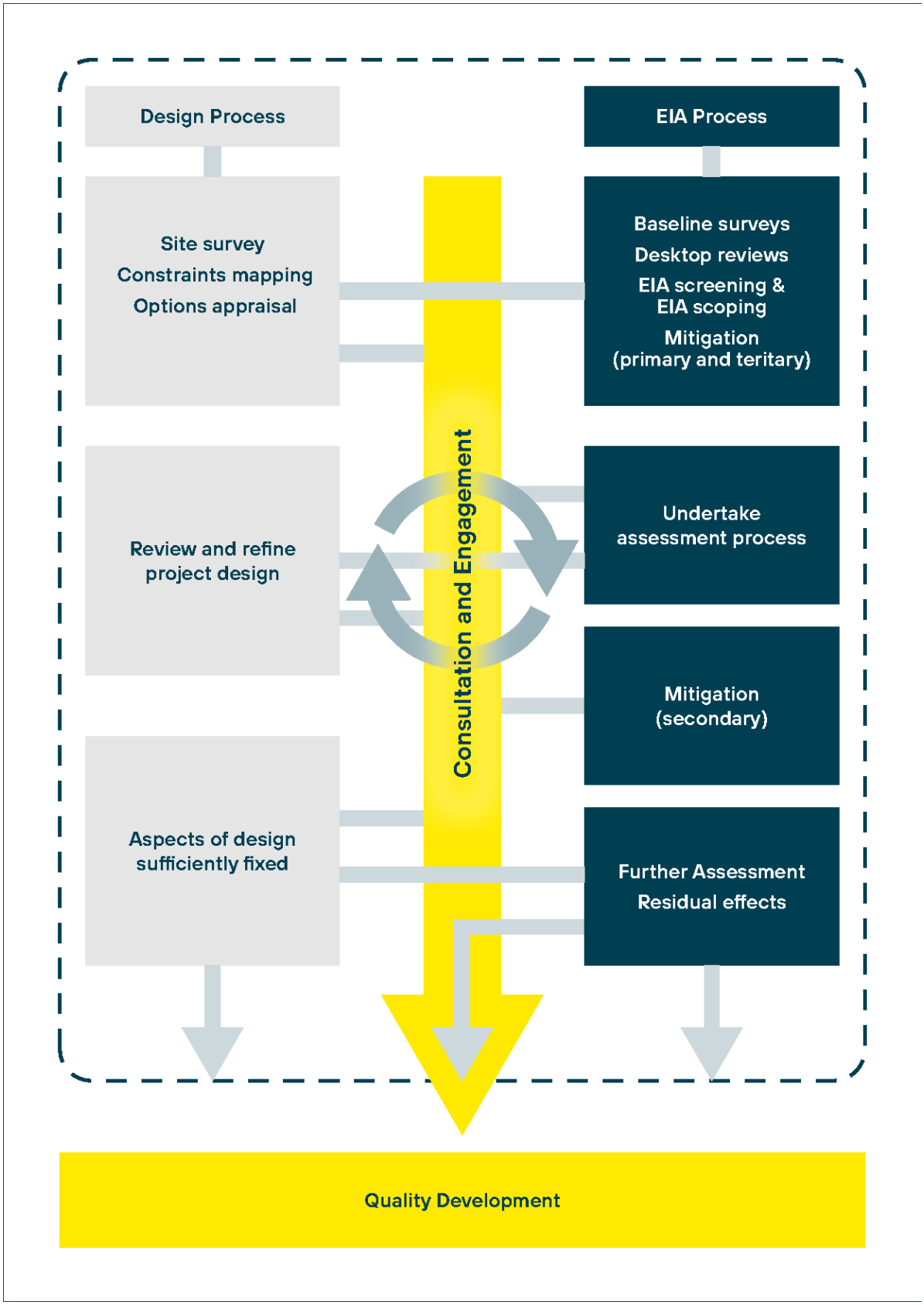


Plate 7-1: EIA and Proposed Development Design

7.6 Design Envelope Approach

7.6.1.1 This EIAR has utilised a design envelope approach (also known as the Rochdale Envelope approach), which involves the identification of the worst case assessment scenario for each impact assessed. This approach enables the consideration within the assessment of the scenario that would result in the greatest impact (e.g., largest footprint, longest exposure, or largest dimensions). Unless otherwise identified it can then be assumed that any other (lesser) scenario for that impact would result in no greater significance than that assessed in the EIA. The scope of design has additionally been further narrowed by committing to Alternating Current transmission and grid connection.

7.6.1.2 This approach is particularly relevant for offshore wind developments, where improvements in technology and construction methodologies occur frequently and information provided as part of the consent application could become rapidly outdated, resulting in an uneconomical and potentially unbuildable project. Furthermore, key contracts are not placed until later in the development phase closer to construction, and further detailed site investigation works will be required to inform the final design. The use of a design envelope provides for flexibility in design and construction within maximum extents and ranges assessed within the EIA.

7.6.1.3 Considering the Proposed Development (Onshore) is seeking consent through a PPP, the design envelope approach additionally provides a suitable degree of flexibility for the OnTI to be further refined through detailed design.

7.6.1.4 The design information within this EIA is based on the parameters outlined in Volume 1, Chapter 3: Proposed Project Description (Offshore) and Volume 1, Chapter 4: Proposed Project Description (Onshore). These parameters have been derived through use of best available information at the time and realistic and considered estimations of the future design and construction of the Proposed Development.

7.6.1.5 Drawing on this information, each chapter within the EIAR will assess the 'realistic worst-case' scenario for each of the identified potential impacts, referred to as the worst-case assessment scenario.

7.7 Baseline Characterisation

7.7.1.1 The characterisation of the existing environment is undertaken in order to determine the baseline conditions (and the future baseline assuming that the Proposed Development is not progressed) in the area covered by the Proposed Development and in the surrounding area. For offshore EIAR topic chapters, this includes the area covered by the Array Area, the Offshore Export Cable Corridor (OECC), Landfall Site and the relevant surrounding technical study areas for those issues scoped into the EIAR.

For the onshore EIAR Report topic chapters, the onshore baseline environment includes the OnTI Red Line Boundary (RLB) encompassing the Landfall Site, the ONEC, Onshore Substation Site and the relevant surrounding technical study areas for those issues scoped into the EIAR.

7.7.1.2 The baseline environmental receptors for each topic chapter have been determined through a combination of desk-based research, primary data gathering and consultation.

7.7.1.3 The specific approach to establishing a robust baseline (upon which impacts can be assessed) is set out within each topic assessment chapter of the EIAR. This has been guided by feedback gained through the Offshore Scoping Opinion, Onshore Scoping Opinion and consultation with relevant stakeholders. An overview of this process is provided below:

- Define study areas for each receptor based on the relevant characteristics of the receptor (e.g., mobility/range);
- Desk-based review of all publicly available information within the study area. Where appropriate, ground truthing of the publicly available baseline data (e.g., land-use surveys to confirm agricultural land holdings, areas of forestry, collection of benthic grab samples within the Caledonia Site, etc.);
- Considering the potential impacts and effects that might arise as a result of the Proposed Development;
- Consideration of the future baseline and potential changes in the baseline over the lifetime of the Proposed Development, including climate change, changes in practices and other reasonably foreseeable changes. Developments under construction in both the offshore and onshore areas are included within the baseline environment, with operational developments also considered as part of the existing baseline environment; and
- Gather and review further baseline data if required to ensure there is sufficient data to make robust judgements about the significance of potential effects.

7.7.1.4 Data gaps and limitations with the data collected to inform the baseline are described in each topic chapter. The ability of any identified data gaps and limitations to materially influence the outcome of the EIA are noted and commented on in the relevant EIAR chapter.

7.8 Assessment of Potential Significant Effects

7.8.1 Identification of Impacts and Assessment Process

7.8.1.1 The EIAR makes a distinction between the term ‘impact’ and ‘effect’. An impact is defined as the likely change to the characteristics and attributes

of the identified receptors caused by an action, whereas the 'effect' relates to the consequence of an impact. The identification of impacts and assessment of potential effects takes consideration of the 'source-pathway-receptor' model. In this model the source signifies the origin of an impact, the pathway represents the means by which an impact can travel through the environment to a receptor, and the receptor is the environment, resource or aspect that is being impacted. The interaction between source-pathway-receptor is what causes an effect on the receptor.

7.8.1.2 To assign significance of an effect, the EIAR considers the potential magnitude of change to the baseline conditions arising from the Proposed Development and the sensitivity of the particular receptor under consideration, as well as any embedded mitigation measures. The assessment process then considers the significance of the resulting effect on the environment, either adverse or positive, using the process outlined in Plate 7-2.

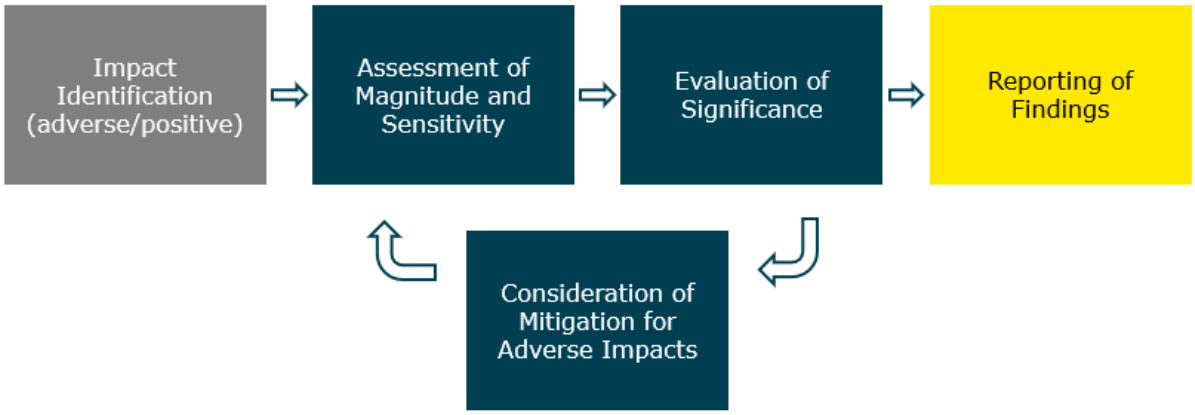


Plate 7-2: The EIA Process

7.8.1.3 Where data gaps or limitations in the impact assessment exist, these are noted within the relevant topic chapters of this EIAR. Where these data gaps or limitations present uncertainty in assigning the sensitivity of the receptor or the potential magnitude of impact this is also noted. In these instances, a precautionary approach is undertaken on the basis that an impact cannot be assigned as 'not significant' or 'negligible' where there is insufficient evidence to support this.

7.8.1.4 This approach represents standard EIA methodology and takes cognisance of best practice EIA principles and guidance including those outlined by Scottish National Heritage (SNH) (now NatureScot) in their handbook on EIA (SNH, 2018[16]) and the Guidelines for EcIA in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018[15]).

7.8.2 Impact Magnitude

7.8.2.1 The magnitude of an impact is the consideration of the spatial extent, duration, frequency and reversibility of an impact from the construction, O&M or decommissioning of the Proposed Development.

7.8.2.2 There are several scenarios being considered for the construction and subsequent operation of the Proposed Development. These scenarios are outlined in more detail in Volume 1, Chapter 5: Proposed Development Phasing. For the purposes of the EIA, to ensure a robust assessment of environmental impacts, a worst-case scenario is identified and assessed within each topic chapter of the EIAR. Where it is not necessarily clear which scenario will represent the worst-case for a particular topic, all relevant scenarios have been considered and reported within the EIAR.

7.8.2.3 The categorisation of magnitude of impact will vary for specific pathways, receptors and technical assessments, but will broadly follow the principles outlined in Table 7-3. Descriptions provided 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.

Table 7-3: Impact Magnitude

Impact Magnitude	Description
High	Complete loss and/or alteration to qualifying / key elements and features of the receptor or receiving environment.
Medium	Partial loss and/or alteration to qualifying / key elements and features of the receptor or receiving environment.
Low	Minor loss / divergence from baseline conditions.
Negligible	Very slight / no change to baseline conditions.

7.8.3 Receptor Sensitivity

7.8.3.1 The scale of sensitivity for a receptor is dependent on the specific environmental topic and receptor in question and considers the value of a receptor in the context of its ability to tolerate, adapt to and recover from impacts. In general, assigning receptor sensitivity is based on the following:

- Designations, value, and importance (e.g., based on legal protection or economic value);
- Prevalence/rarity – how widespread or common a receptor is;
- Vulnerability to change – ability to withstand or accommodate an impact;
- Recoverability from a temporary impact – ability to return to baseline state;
- Adaptability – to avoid or adapt to an impact; and
- Usage.

7.8.3.2 Sensitivity will be classed as 'High', 'Medium', 'Low' or 'Negligible' by considering the factors outlined above. The approach to defining sensitivity may also vary across individual technical topics and will be defined within each environmental topic section of the EIAR in accordance with best practice guidance relevant to that topic and receptor value attributed to elements through designation or legal protection.

7.8.4 Determining Significance of Effect

7.8.4.1 The consideration of the magnitude of a potential impact and sensitivity of the receptor determines an expression for the overall significance of the adverse or positive effect. This determination may be quantitative or qualitative and is often informed by expert judgement.

7.8.4.2 Table 7-4 below sets out how impact magnitude and receptor sensitivity interact to facilitate a judgement of significance of effect.

Table 7-4: Relationship Between Impact Magnitude and Receptor Sensitivity to Assign Significance of Effect

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

7.8.4.3 For example, a major adverse loss / alteration to key elements and features of a receptor of low value (sensitivity) will have an effect of lesser significance than the same impact on a receptor or site of high importance. Significance attributed to the effects will use Table 7-4 as a guide, however professional judgement will be equally important in deciding the suitability of this matrix for assessing effect significance.

7.8.4.4 Variations, which may be applicable to specific environmental topics, are detailed in the relevant methodology section in each environmental topic chapter.

7.8.4.5 Major or moderate effects are categorised as 'significant' in EIA terms, as highlighted in grey in Table 7-4. A typical categorisation for effect significance is provided in Table 7-5.

Table 7-5: Categorisation for Effect Significance

Expression	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	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

7.8.4.6 By applying professional judgement and by taking into account the Guidelines for Environmental Impact Assessment (IEMA, 2004[32]), the assessments within the EIAR will consider moderate or major effects to be significant, and minor or negligible effects to be not significant.

7.9 Mitigation

7.9.1.1 Two forms of mitigation are presented in the topic chapters of this EIAR, embedded mitigation (also identified as primary and tertiary mitigation) and secondary mitigation.

7.9.2 Embedded Mitigation

7.9.2.1 Embedded mitigation encompasses measures that have altered the design identified within the design process of the Proposed Development site selection and/or associated construction, operation, or decommissioning methodologies so as to avoid or reduce potential significant environmental effects. This mitigation is also known as primary mitigation.

7.9.2.2 Embedded mitigation can also take the form of tried and tested best practice mitigation required by legislation or industry practices, known as tertiary mitigation. Tertiary mitigation is defined by IEMA (2016[33]) as "actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage common environmental effects".

7.9.2.3 Where changes have been made to the design of Proposed Development during the iterative EIA process, these measures are clearly identified within relevant EIAR chapters.

7.9.3 Secondary Mitigation

7.9.3.1 Where there are significant effects identified which cannot be mitigated through the implementation of the embedded mitigation, secondary mitigation (actions that require further activity), has been identified to further avoid and/or reduce the significant adverse effects. For example, temporary acoustic screening could be used to reduce significant noise impacts to residential receptors during key activities such as Horizontal Directional Drilling.

7.9.3.2 Through consultation and agreement with stakeholders, the need for monitoring may also be required to validate the conclusions of the assessment or the effectiveness of mitigation. If required, secondary mitigation measures and proposed monitoring are outlined in topic chapters.

7.10 Residual Effects

7.10.1.1 Following the identification of any necessary secondary mitigation measures, effects have been re-assessed to determine and describe the residual effects using the same methodology as the assessment of the potential effects. Where no additional mitigation measure is proposed, the topic chapters explain why the significance of effect cannot be reduced through mitigation.

7.11 Cumulative Impact Assessment

7.11.1 Overview

7.11.1.1 As well as considering the impacts from the Proposed Development alone, the EIA Regulations require consideration of the potential impacts that could occur cumulatively with other relevant plans, projects and activities. Each topic chapter of the EIAR provides a Cumulative Impact Assessment (CIA) with regards to their respective receptors.

7.11.1.2 With regards to offshore receptors, the potential cumulative impacts of the Proposed Development (Offshore) are considered within respective EIAR chapters of Volume 2 (i.e., both Caledonia North and Caledonia South combined with other plans, projects and activities). To inform the two application areas for which consent is being sought, the CIA for Caledonia North presented in Volume 3 does not include consideration for Caledonia South. Conversely, the CIA for Caledonia South presented in Volume 4 does not include consideration for Caledonia North.

7.11.1.3 This section describes the approach taken for the identification and screening of other projects, plans and activities and outlines the approach taken in carrying out the CIA. A full description of how the CIA has been carried out for the onshore and offshore EIA can be found in Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology.

7.11.1.4 There are several guidance documents which have been considered in the development of the CIA, including:

- A Handbook on Environmental Impact Assessment: Guidance for Competent Authorities, Consultees and Others Involved in the Environmental Impact Assessment Process in Scotland (NatureScot, 2018[15]);
- Renewable UK Cumulative Impact Assessment Guidelines. Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms (Renewable UK, 2013[34]); and
- Advice Note Seventeen: Cumulative Effects assessment (PINS, 2017[35]).

7.11.2 Screening of other relevant plans, projects and activities

7.11.2.1 The CIA considers other relevant plans, projects and activities that are 'reasonably foreseeable', such as:

- Approved developments, awaiting implementation;
- Proposals awaiting determination within the planning process with design information in the public domain; and
- Developments which have submitted Scoping Reports (including other ScotWind OWFs) where there is sufficient information within the public domain.

7.11.2.2 Developments under construction are included in the baseline for the topic assessments, and not included in the CIA. Projects that were built and operational at the time that survey data were collected are also classified as part of the existing baseline environment.

7.11.2.3 The CIA has considered all other relevant plans, projects and activities where details are publicly available three months prior to the Proposed Development consent applications being submitted.

7.11.2.4 It should be noted that the CIA can only consider the publicly available project information, which may require certain assumptions, or qualitative assessments, to be made where information is not publicly available. In addition, some projects, predominantly those proposed or not yet determined, may not actually be taken forward.

7.11.2.5 In undertaking the CIA, therefore, there has been a need to build in a level of confidence with respect to the likely cumulative envelope that may result in cumulative effects, the approach to this is detailed in Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology.

7.11.2.6 The staged approach undertaken to identify relevant developments, plans and activities for consideration within the CIA is summarised in the following sections.

7.11.3 Stage One Development of Long List

7.11.3.1 An initial 'long list' of cumulative developments was collated, based on defined Zones of Influence (ZoI) for each EIA receptor.

7.11.3.2 The ZoI takes into consideration the areas / receptors likely to be affected by:

- the Proposed Development activities and facilities that are directly owned, operated, or managed (including by contractors) and that are a component of the Proposed Development;
- unplanned but predictable potential effects caused by the Proposed Development that may occur later or at a different location; and

- indirect effects (if appropriate).

7.11.3.3 For the onshore EIA, the search area for the long list of other existing development and/or approved development was set at 10 kilometres (km), this considers the varying ZoIs for the onshore assessment and presents a proportionate approach to the varying works proposed across the OnTI site.

7.11.3.4 For the offshore EIA, the long list was initially generated based on publicly available data for a range of industries, such as OWFs and other marine renewables, ports and harbours (including marine disposal sites), aggregate production, oil and gas licence blocks, subsea cables and pipelines, among others. This process largely focused on developments, projects and activities in close proximity to the Caledonia Site; however, it also captured a large spatial extent given the potential impact ranges for various receptors; e.g., marine mammal management units (which can extend to distances greater than 1,000km for certain marine mammal species from the Caledonia Site).

7.11.3.5 The CIA long list for the Proposed Development is provided in Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology. This long list has been developed using datasets from Aberdeenshire Council and MD-LOT.

7.11.4 Stage Two Identification of Short-List

7.11.4.1 The identified long list for the onshore and offshore assessment was then reduced to a short-list by taking potential pathways of impact (e.g., temporal and physical/spatial overlap of impacts) into account.

7.11.4.2 This screening of the long list was based on the experience and knowledge of technical specialists, and the current guidance and regulations. The plans, projects and activities that remain after review of the long list have then been taken forwards to the assessment stage.

7.11.4.3 Figure 7-1 identifies those developments taken forward for consideration within the onshore assessment.

7.11.4.4 Figure 7-2 and Figure 7-3 identify those developments taken forward for consideration within the offshore assessment on a local and international scale to reflect the different topic ZoIs.

7.11.4.5 Within each topic chapter, the short-list of developments relevant only to the receptors considered within that chapter are presented and assessed.

Onshore Transmission Infrastructure Red Line Boundary

10km Buffer of Red Line Boundary

Planning Application

8, APP/2023/1454

10, Greens Substation

11, Stromar Onshore Scoping Area

12, Proposed 400kv Connection Corridor (Beauly to Peterhead)

REV	DATE	DOC STATUS	ORIGIN	REVIEW	APP
04	30/08/2024	Approved	CW	AC	GS
03	20/08/2024	For Review	CW	AC	GS
02	05/03/2024	For Review	CW	AC	GS
01	06/03/2024	For Review	CW	BW	GS

CALEDONIA Offshore Wind Farm

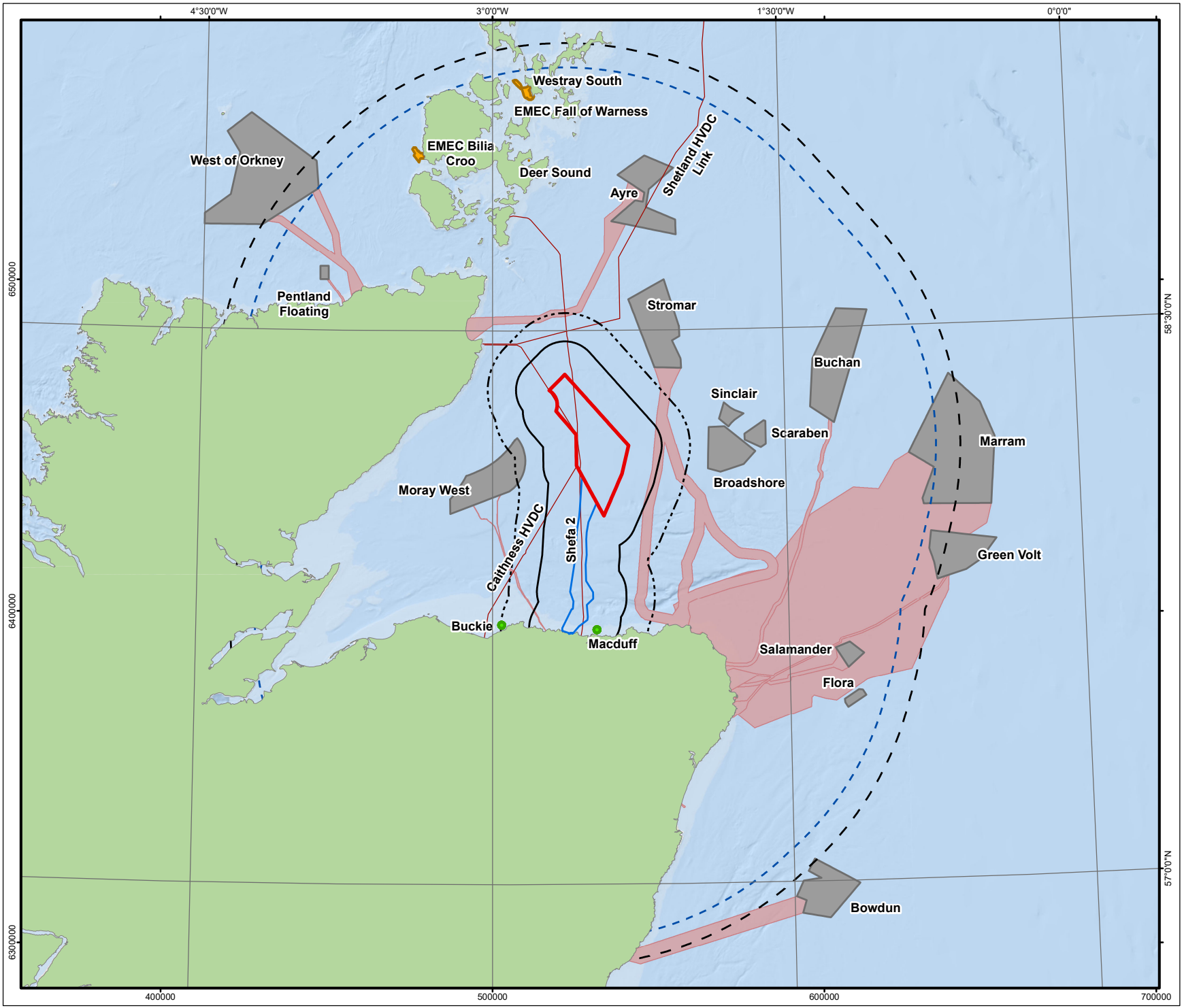
ARUP

CONTRACTOR DRAWING NO: UKCAL1_ARP_WNF_ENV_MAP_00488	CONTRACTOR REV: 04
GEODETIC PARAMETERS: OSGB36 / British National Grid (EPSG:27700)	

DRAWING TITLE

Figure 7-1: Proposed Development (Onshore) Short List of Other Relevant Plans

STATUS: Approved	SCALE: 1:250,000	
DRAWING NUMBER: N/A	SHEET NO: 01 of 01	REV: N/A



- Caledonia OWF
- Offshore Export Cable Corridor
- 10km Zone of Influence
- 10nm Zone of Influence
- 50nm Zone of Influence
- 100km Zone of Influence
- Offshore Wind Developments
- Wave and Tidal Offshore Developments
- Export Cable Corridors
- Telecommunications and Power Cables
- Disposal Sites

0 10 20 30 40 km

REV	DATE	DOC STATUS	ORIGIN	REVIEW	APP
01	09/09/2024	Approved	EV	BB	DH

CALEDONIA Offshore Wind Farm

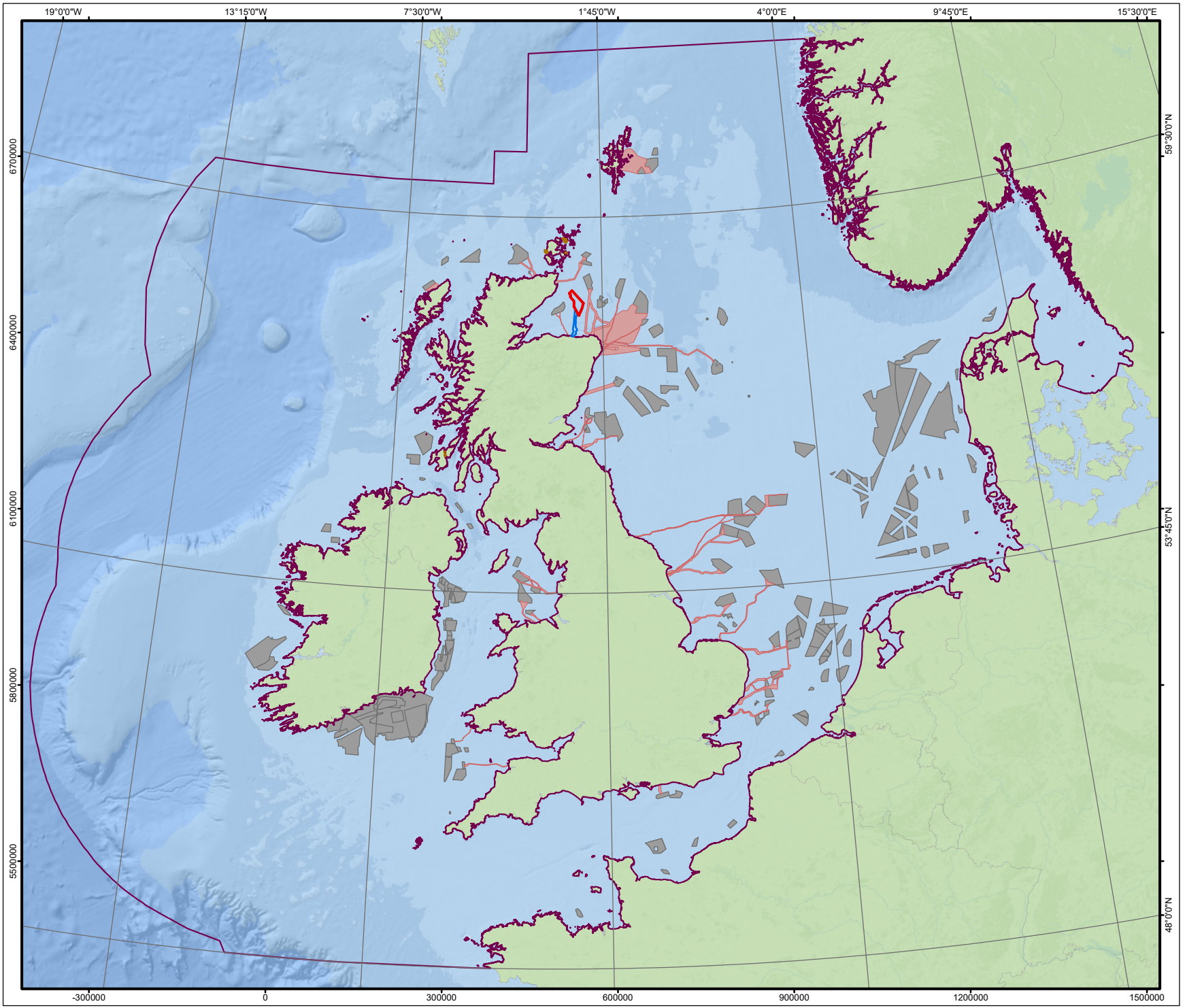
GoBe APEM Group

CONTRACTOR DRAWING NO: UKCAL1_GO_WNF_IOU_MAP_00449	CONTRACTOR REV: 01
GEODETIC PARAMETERS: WGS 84 / UTM zone 30N (EPSG: 32630)	

DRAWING TITLE

Figure 7-2: Short Listed Developments on a Local Scale within the Vicinity of the Proposed Development (Offshore)

STATUS: Approved	SCALE: 1:1,550,000	
DRAWING NUMBER: N/A	SHEET NO: 01 of 01	REV: N/A



- Caledonia OWF
- Offshore Export Cable Corridor
- International Zone of Influence
- Offshore Wind Developments
- Wave and Tidal Offshore Developments
- Export Cable Corridors

0 50 100 150 200 250 km

REV	DATE	DOC STATUS	ORIGIN	REVIEW	APP
01	17/09/2024	Approved	EV	BB	DH

CALEDONIA Offshore Wind Farm

GoBe APEM Group

CONTRACTOR DRAWING NO: UKCAL1_GO_WNF_IOU_MAP_00450	CONTRACTOR REV: 01
GEODETIC PARAMETERS: WGS 84 / UTM zone 30N (EPSG: 32630)	

DRAWING TITLE

Figure 7-3: Short Listed Developments on an International Scale within the Vicinity of the Proposed Development (Offshore)

STATUS: Approved	SCALE: 1:8,750,000	
DRAWING NUMBER: N/A	SHEET NO: 01 of 01	REV: N/A

7.12 In-Combination Effects

7.12.1.1 In-combination effects refer to the inter-relationships between EIA topics that may lead to different or greater environmental effects than in isolation.

7.12.1.2 In-combination effects relate to two effects:

- effects on a single receptor within a single technical topic occurring throughout the lifetime of the Proposed Development, across more than one phase (construction, O&M and decommissioning); and
- effects on a single receptor between and across different technical topics that interact to result in greater effects upon the receptor than when considered in isolation. For example, the combined effects of noise and air quality/ dust impacts during construction on local residents, or where all effects on benthic ecology, such as direct habitat loss or disturbance, sediment plumes, scour, jack-up vessel use etc., interact to produce a different, or greater, effect on this receptor than when the effects are considered in isolation.

7.12.1.3 Each of the topic chapters have been reviewed to identify receptors or receptor groups where individual effects may combine and a conclusion on likely significant effects on this receptor/receptor group has been identified.

7.13 Whole Project Assessment

7.13.1.1 This EIAR first presents an assessment of the Proposed Development (Offshore) in Volume 2, followed by individual assessments of Caledonia North and Caledonia South in Volumes 3 and 4, respectively. The assessment of the Proposed Development (Onshore) is then presented in Volume 5.

7.13.1.2 There is a direct overlap in jurisdiction of consenting and regulatory regimes within the intertidal area between MHWS and MLWS. Offshore works below MHWS will therefore take place alongside onshore works within the intertidal area (for which the onshore consenting boundary relates to works above MLWS). There is therefore the potential for in-combination effects resulting from onshore and offshore works in this area. Furthermore, potential impacts to the climate and socio-economics, tourism and recreation are less distinguishable between onshore and offshore settings compared to other receptors, and thus need to be assessed together. This is considered within the assessments presented within Volume 6, which allow for an assessment of both the onshore and offshore elements of the Proposed Development.

7.14 Transboundary Effects

7.14.1.1 Transboundary effects arise when impacts from a development within one European Economic Area (EEA) state's territory significantly affects the environment or interests of another EEA state(s). The EIA Regulations require the assessment of transboundary effects to be included within the EIAR.

7.14.1.2 Potential transboundary effects are identified and assessed within each topic chapter of the offshore volumes of this EIAR (Volumes 2, 3 and 4). Transboundary effects are not anticipated for the OnTI elements of the Proposed Development and are therefore not considered further.

7.15 The EIAR

7.15.1.1 The information resulting from the EIA process is presented in an EIAR so that a decision maker has full information on the likely significant environmental effects of Proposed Development, at the time that the decision on whether to grant consent is made. Within this EIAR, the assessment of the Proposed Development (Offshore) is presented within Volume 2, followed by Caledonia North (Volume 3) and Caledonia South (Volume 4). The assessment of the Proposed Development (Onshore) is presented in Volume 5 followed by Intertidal and Combined Assessments with Volume 6.

7.15.1.2 The assessment of each environmental topic is presented in a separate topic chapter in each relevant offshore and onshore volume. Within each of the topic chapters, the following matters have been considered:

- Legislation, Policy and Guidance: Provides a summary of the relevant legislation, policy and guidance that has been taken into account in assessing each topic;
- Stakeholder Engagement: Provides a summary of the consultation undertaken and responses received to date from statutory and non-statutory consultees through scoping and direct consultation;
- Baseline Characterisation: Provides a description of the existing environmental baseline condition, drawing on relevant data sources;
- EIA Approach and Methodology: Provides topic detail on the approach to assessment, particularly where this assessment methodology deviates from the general approach set out in this chapter;
- Key Parameters for Assessment: Provides a summary of the worst case scenario assessed based on the design envelope of the Proposed Development;

- Potential Effects: Presents an assessment of the significance of any identified effects during construction, O&M and decommissioning, taking account of the magnitude of impact, sensitivity of receptor and any embedded mitigation;
- Cumulative Effects: Provides an assessment of any cumulative effects arising from interaction between the Proposed Development and other plans, projects or activities (Refer to Section 7.11);
- In-combination Effects: Provides an assessment of the potential for significant effects resulting from multiple different effects upon the same receptor (Refer to Section 7.12);
- Transboundary effects: Provides an assessment of any impacts arising from the Proposed Development on the environment of other countries/territorial waters (Refer to Section 7.14);
- Mitigation Measures and Monitoring: Provides identification of any further (secondary) mitigation measures required;
- Residual Effects: Provides identification of residual effects, taking into account further mitigation (where necessary) and/ or monitoring requirements; and
- Summary of Effects: Provides a summary of the significant effects assessed.

7.16 References

[1] UK Parliament (1989) 'Electricity Act 1989'. Available at: https://www.legislation.gov.uk/ukpga/1989/29/contents (Accessed 01/10/2024).

[2] Scottish Government (2010) 'Marine (Scotland) Act 2010'. Available at: https://www.gov.scot/publications/marine-scotland-act/ (Accessed 01/10/2024).

[3] UK Parliament (2009) 'Marine and Coastal Access Act 2009'. Available at: https://www.legislation.gov.uk/ukpga/2009/23/contents (Accessed 01/10/2024).

[4] UK Parliament (1997) 'Town and Country Planning (Scotland) Act 1997'. Available at: https://www.legislation.gov.uk/ukpga/1997/8/contents (Accessed 01/10/2024).

[5] European Parliament and Council (2011) 'DIRECTIVE 2011/92/EU on the assessment of the effects of certain public and private projects on the environment'. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32011L0092 (Accessed 01/10/2024).

[6] UK Parliament (2007) 'Marine Works (Environmental Impact Assessment) Regulations 2007'. Available at: https://www.legislation.gov.uk/uksi/2007/1518/contents/made (Accessed 01/10/2024).

[7] Scottish Parliament (2017) 'Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017'. Available at: https://www.legislation.gov.uk/ssi/2017/115/contents/made (Accessed 01/10/2024).

[8] Scottish Parliament (2017a) 'Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017'. Available at: https://www.legislation.gov.uk/ssi/2017/101/contents/made (Accessed 01/10/2024).

[9] Scottish Parliament (2017b) 'Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)'. Available at: https://www.legislation.gov.uk/ssi/2017/102/contents/made (Accessed 01/10/2024).

[10] UK Parliament (1994) 'The Conservation (Natural Habitats, &c.) Regulations'. Available at: https://www.legislation.gov.uk/uksi/1994/2716/contents/made (Accessed 01/10/2024).

[11] UK Parliament (2017) 'The Conservation of Habitats and Species Regulations'. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made (Accessed 01/10/2024).

[12] UK Parliament (2017a) 'The Conservation of Offshore Marine Habitats and Species Regulations'. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made (Accessed 01/10/2024).

[13] UK Parliament (1981) 'The Wildlife and Countryside Act'. Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents (Accessed 01/10/2024).

[14] Marine Scotland (2018) 'Marine Scotland Consenting and Licensing Guidance: For Offshore Wind, Wave and Tidal Energy Applications'. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/consultation-paper/2018/10/marine-scotland-consenting-licensing-manual-offshore-wind-wave-tidal-

energy-applications/documents/00542001-pdf/00542001-pdf/govscot%3Adocument (Accessed 01/10/2024).

[15] Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) 'Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine'. Available at: https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.1Update.pdf (Accessed 01/10/2024).

[16] NatureScot (2018) 'A Handbook on Environmental Impact Assessment: Guidance for Competent Authorities, Consultees and Others Involved in the Environmental Impact Assessment Process in Scotland' Available at: https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/environmental-impact-assessment (Accessed 01/10/2024).

[17] BSI (2015) 'Environmental Impact Assessment for Offshore Renewable Energy Projects'.

[18] IEMA (2017) 'Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice'.

[19] RenewableUK (2013) 'Cumulative Impact Assessment Guidelines: Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Cumulative-Impact-Assessment-Guidelines.pdf (Accessed 11/10/2024)

[20] CEFAS (2012) 'Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects'. Available at: https://tethys.pnnl.gov/publications/guidelines-data-acquisition-support-marine-environmental-assessments-offshore (Accessed 01/10/2024).

[21] I.D. Maclean, L.J. Wright, D.A. Showler and M.M Rehfisch (2009) 'A Review of Assessment Methodologies for Offshore Wind Farms COWRIE METH-08-08)'. Available at: https://www.researchgate.net/publication/256461323_A_Review_of_Assessment_Methodologies_for_Offshore_Wind_Farms (Accessed 01/10/2024).

[22] UK Parliament (1994) 'The Conservation (Natural Habitats, &c.) Regulations'. Available at: https://www.legislation.gov.uk/uksi/1994/2716/contents/made (Accessed 01/10/2024).

[23] UK Parliament (1981) 'The Wildlife and Countryside Act'. Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents (Accessed 01/10/2024).

[24] Institute of Environmental Management and Assessment (IEMA) (2015) 'Environmental Impact Assessment Guide to Shaping Quality Development'

[25] IEMA (2016) 'Environmental Impact Assessment Guide to Delivering Quality Development'.

[26] Scottish Government (2017c) 'Planning Advice Note (PAN) 1/2013 Environmental Impact Assessment'. Available at: https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/ (Accessed 01/10/2024).

[27] Planning Inspectorate (2017) 'Advice Note Seventeen: Cumulative Effects assessment'. Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment (Accessed 01/10/2024).

[28] Energy Networks Association (2017) 'Electric and Magnetic Fields, the facts'. Available at: https://www.energynetworks.org/assets/images/Resource%20library/EMF_The_Facts_250917.pdf?1714556720 (Accessed 01/10/2024).

[29] ICNIRP (1998) 'ICNIRP Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields'. Available at: http://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf (Accessed 01/10/2024).

[30] Scottish Government (2022) 'Electricity Act 1989 - section 36 applications: guidance for applicants on using the design envelope'. Available at: https://www.gov.scot/publications/guidance-applicants-using-design-envelope-applications-under-section-36-electricity-act-1989/ (Accessed 01/10/2024).

[31] IEMA (2016) 'Environmental Impact Assessment Guide to: Delivering Quality Development'. Available at: https://www.iema.net/webinars/eia-shaping-and-delivering-quality-development/ (Accessed 01/10/2024).

[32] IEMA (2004) 'Guidelines for Environmental Impact Assessment'.

[33] IEMA (2016) 'Environmental Impact Assessment Guide to Delivering Quality Development'.

[34] Renewable UK (2013) 'Cumulative Impact Assessment Guidelines. Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms'. Available from: https://tethys.pnnl.gov/sites/default/files/publications/Cumulative-Impact-Assessment-Guidelines.pdf (Accessed 01/10/2024).

[35] Planning Inspectorate (2017) 'Advice Note Seventeen: Cumulative Effects assessment'. Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment (Accessed 01/10/2024).

Caledonia Offshore Wind Farm
5th Floor, Atria One
144 Morrison Street
Edinburgh
EH3 8EX

www.caledoniaoffshorewind.com

OCEAN WINDS