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Volume 7 Standalone Appendices

Appendix 5 Offshore Scoping Validation Report

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Volume 7 Appendix 5 Offshore Scoping Validation Report

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Acronyms and Abbreviations

AIS	Automatic Identification System
АТС	Air Traffic Control
САА	Civil Aviation Authority
CIA	Cumulative Impact Assessment
DAS	Digital Aerial Survey
DE	Design Envelope
DSFB	District Salmon Fishery Board
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMF	Electromagnetic Field
FWPM	Fresh Water Pearl Mussel
GBS	Gravity-Based Structures
HER	Historic Environment Record
НРАІ	Highly Pathogenic Avian Influenza
НVАС	High Voltage Alternating Current
INNS	Invasive Non Native Species
LAT	Lowest Astronomical Tide
LSE	Likely Significant Effect
MD-LOT	Marine Directorate – Licensing Operations Team
мнพѕ	Mean High Water Springs
MLWS	Mean Low Water Springs
MSL	Mean Sea Level



NLB	Northern Lighthouse Board
OECC	Offshore Export Cable Corridor
OnTI	Onshore Transmission Infrastructure
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAR	Search and Rescue
SLVIA	Seascape, Landscape and Visual Impact
SNH	Scottish Natural Heritage
SPA	Special Protection Area
UKCOS	UK Chamber of Shipping
UXO	Unexploded Ordnance
VMS	Vessel Monitoring System
WTG	Wind Turbine Generator

1 Introduction

1.1 Background

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- 1.1.1.1 In January 2022, as part of the ScotWind leasing round, Ocean Winds UK Ltd. (the Developer) was successfully awarded an Option Agreement granting exclusive rights to develop an Offshore Wind Farm (OWF) within the NE4 Plan Option, which is located within the outer Moray Firth, off the north-east coast of Scotland.
- 1.1.1.2 Ocean Winds is progressing the proposals for this OWF, which has been named the Caledonia OWF, via the newly incorporated limited company of Caledonia Offshore Wind Farm Ltd (the Applicant). The terms of the Option Agreement are dependent upon the Applicant being awarded all key consents and permissions to construct and operate the OWF from the relevant regulatory authorities.

1.2 Document Purpose and Structure

1.2.1 Document Purpose

- 1.2.1.1 This document serves as the Scoping Validation Report for the Proposed Development (Offshore). It builds upon the initial Offshore Scoping Report (Volume 7, Appendix 2) submitted in September 2022, in relation to the offshore scope of the Environmental Impact Assessment (EIA) and the content of the supporting Environmental Impact Assessment Report (EIAR) for the Proposed Development (Offshore). It aims to address the feedback provided in the Scoping Opinion (Volume 7, Appendix 3) received from Marine Directorate – Licensing Operations Team (MD-LOT)ⁱ in January 2023.
- 1.2.1.2 The need for a Scoping Validation Report was identified within the Scoping Opinion, where it was stated:

"In the event that the Developer does not submit applications for a s.36 consent under [The Electricity Act 1989] and marine licences under [The Marine (Scotland) Act 2010] and [The Marine and Coastal Access Act 2009] for the Proposed Development within 12 months of the date of this Scoping Opinion, the Scottish Ministers strongly recommend that the Developer seeks further advice from them regarding the validity of the Scoping Opinion".

1.2.1.3 This Scoping Validation Report has therefore been prepared in response to this recommendation within the Scoping Opinion.

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).

- 1.2.1.4 The primary objective of this Scoping Validation Report is to confirm and, if required, update or refine the scope of the EIA for the Proposed Development (Offshore) to reflect that the Scoping Opinion was issued over 12 months before consent application submission. It aims to verify the feedback from the Scoping Opinion, ensuring that the EIA process is comprehensive and effectively addresses all the potential environmental impacts that have been identified.
- 1.2.1.5 In order to engage in an informed manner, the Scoping Validation Report provides information on the following:
 - The Proposed Development (Offshore) including all offshore aspects comprising up to 140 wind turbine generators (WTGs), associated foundations (combination of bottom-fixed and floating foundations), interarray cables, interconnector cables, up to four offshore substation platforms (OSPs), offshore export cable corridor (OECC) and Landfall Site, up to Mean High Water Springs (MHWS);
 - Offshore topics considered and proposed for scoping into the EIA, where
 potentially significant effects may result from the Proposed Development
 (Offshore) on the physical, biological and human environment;
 - Offshore topics considered and proposed for scoping out of the EIA, where significant effects are not anticipated with consideration of embedded and industry best practice mitigation; and
 - An outline of the proposed approach to be adopted in order to gain a full understanding of existing baseline conditions associated with the Proposed Development (Offshore) (and the future baseline assuming that the Proposed Development (Offshore) is not progressed) and to allow a robust environmental assessment of potential effects through the EIA process.
- 1.2.1.6 For the purpose of EIA and provision of clarity regarding the onshore and offshore consenting regimes in relation to the intertidal area, located between MHWS and Mean Low Water Springs (MLWS), the following distinctions are made:
 - The Offshore Scoping Report (Volume 7, Appendix 2) considered all activities associated with the Proposed Development (Offshore) extending seawards from MHWS. This includes the Array Area, the inter-array and interconnector cabling, any OSP infrastructure requirements, the OECC and offshore export cables and Landfall Site; and
 - The Onshore Scoping Report (Volume 7, Appendix 1) considered all activities associated with the onshore transmission infrastructure (OnTI) aspects of the Proposed Development (Onshore) extending landwards from MLWS. This includes landfall infrastructure, onshore cabling, onshore substation and associated ancillary infrastructure (such as jointing pits, construction compounds and lay down areas).

1.2.1.7 Where there is an overlap in jurisdiction of consenting and regulatory regimes (i.e., within the intertidal area between MHWS and MLWS), both the Offshore Scoping Report and the Onshore Scoping Report, as well as the subsequent EIAR, are required to present relevant technical assessments.

1.2.2 Document Structure

- 1.2.2.1 The structure of this Scoping Validation Report is set out as follows:
 - Section 1: Introduction Sets out a brief background to the Proposed Development (Offshore) and explains the purpose of the document.
 - Section 2: Updates to the Proposed Development (Offshore) An overview of the key developments and milestones achieved since Offshore Scoping Report submission. Presents a comparison summary of the key differences in design between the Offshore Scoping Report and the EIAR, including location and infrastructure updates. Presents a comparison of any relevant legislation and policy changes since the Offshore Scoping Report was submitted. Provides a summary of the key points from the Scoping Opinion per receptor and justification for validity of the Scoping Opinion, or otherwise.
 - Section 3: Summary Provides a conclusion on the validity of the Scoping Opinion provided in January 2023 in relation to the Proposed Development (Offshore) that has been assessed within the EIAR and is included within the consent application.

2 Updates to the Proposed Development (Offshore)

2.1 Overview

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- 2.1.1.1 Since the submission of the Offshore Scoping Report (Volume 7, Appendix 2) to MD-LOT in September 2022, the Applicant has undertaken baseline characterisation surveys of the Proposed Development (Offshore), public consultation events and additional stakeholder consultations, which have all assisted in the refinement of the project design. Feedback from the Scoping Opinion (Volume 7, Appendix 3) has also been considered and/or incorporated.
- 2.1.1.2 The key developments and milestones achieved since submission of the Offshore Scoping Report have included:
 - Completion of site-specific baseline characterisation surveys including geophysical, metocean, benthic ecology, intertidal and digital aerial marine mammals and ornithological survey campaigns;
 - Development and refinement of the consenting strategy for a 2 gigawatt Proposed Development (Offshore) comprising of both bottom-fixed and floating infrastructure technology;
 - Potential phasing of development Caledonia North and Caledonia South;
 - Public consultation events and further (detailed) stakeholder engagement activities in relation to specific environmental topics and issues and consideration of outcomes; and
 - An iterative process of developing the project design from the high-level scoping design envelope to the more refined EIA design envelope presented within the EIA. This is based on the above key milestones as well as ongoing industry review of and detailed research into technology advancements.

2.2 Location and Infrastructure Updates

- 2.2.1 Array Area
- 2.2.1.1 This section summarises the location and Array Area updates since the initial Offshore Scoping Report (Volume 7, Appendix 2) was submitted. For more detailed information than presented here, reference should be made to Volume 1, Chapter 6: Site Selection and Alternatives. For full design envelope details, these are presented within Section 2.5 of this document.
- 2.2.1.2 Within the Offshore Scoping Report, the maximum number of WTGs was reported to be 150 within the Array Area which covered approximately



429km², describing an indicative split of up to 111 bottom-fixed foundations and 39 floating foundations (Figure 2-1). Following scoping, this has since been refined to a maximum of 140 WTGs across both Caledonia North and Caledonia South, with a total Array Area footprint of approximately 423km² (Figure 2-2 and Figure 2-3). This comprises the Caledonia North Site with a footprint of approximately 218.5km² (Figure 2-2) and the Caledonia South Site with a footprint of approximately 204.5km² (Figure 2-3). It is noted that this reflects a slight reduction in total size of the Array Area compared to the original NE4 Plan Option (see Section 2.2.3 for explanation).

2.2.1.3 Regarding WTGs, this will either involve all bottom-fixed foundations (i.e., 140) or a combination of bottom-fixed foundations and up to 39 floating foundations. While bottom-fixed foundations may be considered anywhere in the Array Area, floating development is only considered in part of the Caledonia South Site (Figure 2-3). The refinement also alters the depth range of the Array Area to approximately 39-88m relative to lowest astronomical tide (LAT).







2.2.2 Caledonia North

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- 2.2.2.1 The potential use of Gravity-Based Structures (GBS) as a WTG foundation type was included within the Offshore Scoping Report (Volume 7, Appendix 2); however, following further technical screening, this technology has been discounted mainly due to site conditions and water depths. Furthermore, it is recognised that GBS would represent the worst-case scenario for a number of environmental receptors (e.g., benthic subtidal habitats, physical processes) and therefore, removing this type of WTG foundation from the design envelope is considered to have materially reduced potential significant effects within the impact assessment and reduced stakeholder concern. Therefore, the potential options for WTG foundations within Caledonia North include the following bottom-fixed technology:
 - Jacket with pin piles;
 - Jacket with suction caissons; and
 - Monopile.
- 2.2.2.2 The Offshore Scoping Report (Volume 7, Appendix 2) indicated that the total number of OSPs required to export the power generated by the WTGs from the Array Area would be up to six. This has since been reduced to up to four OSPs, with two associated with Caledonia North and the remaining with Caledonia South. As above, the use of GBS foundation types has also been discounted with regards to OSPs for technical and environmental reasons.
- 2.2.2.3 Up to five interconnector cables linking the OSPs were included in the Offshore Scoping Report (Volume 7, Appendix 2), with a total length of up to 135km. This has since been refined down to two interconnector cables, one of which will be associated with Caledonia North connecting the two OSPs, with a total length of up to 30km. This has greatly reduced the number and length of interconnector cables to be installed since scoping, effectively due to the reduced number of OSPs included within the design envelope. It is also noted that it is not planned to connect OSPs between Caledonia North and Caledonia South.
- 2.2.2.4 At scoping, inter-array cables were identified at a maximum total length of 720km, noting this related to the full NE4 Plan Option. With regards to Caledonia North, it is assumed that up to 360km of inter-array cables will be installed.

2.2.3 Caledonia South

2.2.3.1 Caledonia South has been reduced by approximately 6km² in the context of the Array Area presented in the Offshore Scoping Report (Volume 7, Appendix 2). The area, at the eastern-most point of Caledonia South, was reduced following consultation with commercial fisheries stakeholders (including review of available Automatic Identification System (AIS), Vessel Monitoring

System (VMS) and landings data) in combination with the consideration of technical constraints. It was also recognised that additional significant engineering and operational challenges may be encountered. In particular, steep slopes can create challenges for anchoring and mooring of floating WTG foundation technology, and this area could present challenges with regards to a consistent mooring arrangement/design across the overall Caledonia South area. Furthermore, steep slopes may complicate the installation of anchoring systems or increase the risk of foundation instability. Similar challenges may be considered for cable installation, making it more difficult to achieve and maintain proper burial and protection from erosion.

- 2.2.3.2 As above with Caledonia North, of the two interconnector cables, one will be associated with Caledonia South connecting the two OSPs with a total length of up to 30km. Regarding inter-array cables associated with Caledonia South, it is assumed that up to 365km of inter-array cables will be installed.
- 2.2.3.3 The use of GBS foundation types has also been discounted with regards to WTGs and OSPs for technical and environmental reasons (note that OSP foundations will use bottom-fixed technology only). The potential options for WTG foundations within Caledonia South include the following:
 - Jacket with pin piles (bottom-fixed);
 - Jacket with suction caissons (bottom-fixed);
 - Monopile (bottom-fixed);
 - Fully-restrained platform (bottom-fixed);
 - Semi-submersible (floating); and
 - Tension leg platform (floating).

2.2.4 Offshore Export Cable Corridors

2.2.4.1 The OECC has been refined since scoping, informed by feasibility studies undertaken to identify suitable landfall locations, in addition to an OECC routeing study based on environmental considerations (e.g., benthic habitat types) and engineering constraints (e.g., bathymetry/topography and ground conditions (Figures 2-2 and 2-3). Caledonia North and Caledonia South did not have separate OECCs identified at the time of scoping, but these are now presented and assessed within the EIAR. The Caledonia North OECC has a footprint of approximately 390.8km² (Figure 2-2) and the Caledonia South OECC has a footprint of approximately 221.3km² (Figure 2-3). The OECC at scoping was approximately 765km², thus an overall reduction in footprint of 543.7km².

2.3 Legislation and Policy

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- 2.3.1.1 The legislation and policy considerations detailed in the Offshore Scoping Report (Volume 7, Appendix 2) remain valid at the time of writing this Scoping Validation Report.
- 2.3.1.2 There have been some new proposals to policy such as progression of the National Marine Plan 2 which is underway but this document has not yet been published. This updated plan aims to deliver a framework for licensing/ consenting decisions that reflect changes since 2015 (including global climate, net zero and nature crisis). In addition, the iterative sectoral marine plan and Habitats Regulations Appraisal (HRA) process has been progressing however no new documentation has been published. None of this documentation currently affect the validity of the Scoping Opinion (Volume 7, Appendix 3).
- 2.3.1.3 National Planning Framework 4 (Scottish Government, 2023¹) was published in February 2023 and, although primarily terrestrial related, this document also considers coastal and energy development and introduced policy that when development proposals are being considered significant weight will be given to the global climate and nature crisis. It also identifies the need to ensure biodiversity enhancement plans are part of Project designs. These policies do not affect the validity of the Scoping Opinion directly.
- 2.3.1.4 The revised National Policy Statements were introduced in November 2023, including EN-1, EN-3 and EN-5 (Department for Energy Security and Net Zero, 2024a²; 2024b³; 2024c⁴). These policies do not affect the validity of the Scoping Opinion (Volume 7, Appendix 3).
- 2.3.1.5 The most recent passing of the Energy Act 2023 (UK Parliament, 2023⁵) does not directly alter the content of the Scoping Opinion. Relevant marine sections of the Energy Act content are yet to be fully incorporated by Scottish Government such as a Scottish system for Marine Recovery Fund (MRF) and consideration of whether this will be adopted in a similar manner to England and Wales. As such this legislation does not affect the validity of the Scoping Opinion.
- 2.3.1.6 Further details of current legislation and policy applicable to the Proposed Development (Offshore) can be found within Volume 1, Chapter 2: Legislation and Policy of the EIAR. This provides a comprehensive overview of the relevant policy and legislation from an international, UK and Scottish perspective. Key policy and legislation are also highlighted below in Table 2-1.



Table 2-1: Key UK and Scottish Marine Policy.

Subject Matter	Policy				
	UK Renewable Energy Roadmap: 2013 update (HM Government, 2013 ⁶)				
	UK Clean Growth Strategy (2017) (HM Government, 2017a ⁷)				
	UK Industrial Strategy (2017) (HM Government, 2017b ⁸)				
	UK Marine Policy Statement (HM Government, 2011 ⁹)				
	National Planning Framework 4 (Scottish Government, 2023 ¹)				
	Scottish Planning Policy (Scottish Government, 2014b ¹⁰)				
All Topic Areas	National Marine Plan (Scottish Government, 2015a ¹¹)				
	Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020a ¹²)				
	Scottish Electricity Generation Policy Statement 2013 (Scottish Government, 2013 ¹³)				
	The Future of Energy in Scotland: Scottish Energy Strategy (Scottish Government, 2017 ¹⁴)				
	Climate Change Plan, Third Report on Proposals and Policies (2018- 2032) (Scottish Government, 2018a ¹⁵) and update (Scottish Government, 2020b ¹⁶)				
Ornithology	The European Biodiversity Strategy for 2030 (European Commission, 2020^{17})				
	The Scottish Biodiversity Strategy (Scottish Government, 2023 ¹⁸)				
	Scottish Priority Marine Features (NatureScot, 2020a ¹⁹)				
Marine Mammals	The Scottish Biodiversity Strategy (Scottish Government, 2022a ¹⁸)				
Benthic Ecology	As above for Marine Mammals				
Landscape and Seascape	Position Statement on Renewable Energy and the Natural Heritage (SNH, 2014^{20})				
Commercial Fishing	Assessments have made reference to general policy and topic specific guidance rather than topic-specific policy				

2.4 Approach to Consent Applications

2.4.1 Consenting Process

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2.4.1.1 Where an offshore energy project, such as an OWF, requires Section 36 Consent and a Marine Licence(s) (see Volume 1, Chapter 2: Legislation and Policy), MD-LOT, on behalf of the Scottish Ministers, are able to process both consent applications jointly. Table 2-2 outlines the high-level consenting process that will be followed.

Table 2-2: Consenting process summary for OWF developments in Scotland.

Development Stage	Activities Undertaken
Pre-application	Undertaking of preparatory works, scoping, EIA and consultation on the proposed project.
Application	Submission of application to MD-LOT, circulation of information to consultees and public advertisement of the application.
Consideration of Application	Consultees make representations on the application.
Application of Evaluation	Consultation responses and the application are reviewed by MD-LOT and recommendation provided to the Scottish Ministers.
Application Determination and Announcement	Scottish Ministers provide the determination on the application, which is then publicly announced and published.
Post-decision	Developer compliance with conditions associated with consent under Section 36 of the Electricity Act 1989 (as amended) (UK Parliament, 1989 ²¹) and relevant Marine Licence(s).

2.5 EIAR Design Envelope

- 2.5.1.1 In the Scoping Opinion (Volume 7, Appendix 3), concerns raised by NatureScot and the Scottish Ministers related to the broad design envelope and lack of detail regarding the construction and operational phases, and the assessment methods, including how data will be analysed and the determination of significance. The Design Envelope (DE) has since been reviewed, updated and further refined in accordance with the outcome of the Scoping Opinion, as well as taking into consideration more site-specific information that is now available from environmental, engineering and technical surveys, modelling outputs and subsequent project-level discussions with the relevant stakeholders.
- 2.5.1.2 For the Proposed Development (Offshore) and the creation of the DE, the 'Rochdale Envelope' concept has been applied in accordance with the Scottish Government 'Guidance for applicants on using the design envelope for applications under Section 36 of the Electricity Act 1989' (Scottish

Government, 2022²²). Further details on how this is applied are provided in Volume 1, Chapter 3: Proposed Development Description (Offshore).

2.5.1.3 Table 2-3 to Table 2-5 present the updated information pertaining to key components and design parameters, specific to the Caledonia North and Caledonia South application areas, as well as to the Proposed Development (Offshore). This should be read in conjunction with Volume 1, Chapter 3: Proposed Development Description (Offshore) for full context, particularly regarding justifications for design choices.

		Design Envelope				
Design Parameters	Units	Caledonia North	Caledonia South	Proposed Development (Offshore)		
WTG Foundation type	-	Bottom-fixed	Bottom fixed; Bottom-fixed and floating	Bottom-fixed; Bottom fixed and floating		
Maximum number of WTGs)	-	77	78	140*		
WTG foundation technology composition – Bottom-fixed*	-	Up to 77	Up to 78 (bottom- fixed only; assumes no floating component)	Up to 140 (bottom- fixed only; assumes no floating component)		
WTG foundation technology composition – Floating*		Not applicable (no floating component)	Up to 39 (assumes remaining composition bottom- fixed up to a combined total of 78)	Up to 39 (assumes remaining composition bottom- fixed up to a combined total of 140)		
Number of OSPs	Number of OSPs - 2 2		2	4		
OSP foundation type	-	Bottom-fixed	Bottom-fixed	Bottom-fixed		
Transmission system	-	High Voltage Alternating Current (HVAC)	HVAC	HVAC		
Number of interconnector cables	-	1	1	2		
Maximum length of interconnector cables	km	30	30	60		

Table 2-3: Outline description of the Proposed Development (Offshore).

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		Design Envelope				
Design Parameters	Units	Caledonia North Caledonia South		Proposed Development (Offshore)		
Maximum number of inter- array cables	-	77	78 (bottom-fixed foundations) 39 (floating foundation)	140 (up to 39 floating, assumes remaining composition bottom- fixed up to a combined total of 140)		
Maximum length of inter-array cables (total)	km	360	365 for bottom-fixed foundations; up to 182.5 for floating foundations (assumes combined with bottom-fixed foundations up to a total of 365)	655 for bottom-fixed foundations; up to 182.5 for floating foundations (assumes remaining compositions combined with bottom-fixed foundations up to a combined total of 655)		
Maximum number of offshore export cables	-	2	2	4		
Maximum length of offshore export cables (total)	km	180	150	330		
* Refer to Volume 1, Chapter 3: Proposed Development Description (Offshore) for further						

* Refer to Volume 1, Chapter 3: Proposed Development Description (Offshore) for further details explaining the maximum number of WTGs for Caledonia North and Caledonia South, as well as maximum number of WTGs for the Proposed Development (Offshore), noting this is less than the sum of the maximum number of WTGs for Caledonia North and Caledonia South.



Table 2-4: WTG design envelope.

		Design Envelope				
Design Parameters	Units	Caledonia	Caledon	Proposed		
		North	Fixed	Floating	(Offshore)	
Minimum blade tip height (air gap)	m above Mean Sea Level (MSL)	35	35	35	35	
Maximum blade tip height	m above MSL	355	355	325	355	
Maximum hub height	m above MSL	190	190	170	190	
Maximum rotor diameter	m	310	310	290	310	
Maximum blade length	m	151	151	140	151	
Maximum swept area per turbine	m²	75,500	75,500	66,000	75,500	
Minimum downwind and crosswind spacing	m	944	944	944	944	
Maximum downwind and crosswind spacing	m	1,860	1,860	1,740	1,860	
Anticipated operational life	Years	35	35	35	35	
Markings and lighting	 The Proposed Development (Offshore) will be constructed to satisfy the requirements of the Civil Aviation Authority (CAA), MCA, and the Northern Lighthouse Board (NLB) in respect of marking and lighting specifications. Maritime navigational marking and lighting for the final layout design will be agreed post-consent with the NLB. As a minimum, lighting will comply with requirements of the International Association of Marine Aids to Navigation and Lighthouse Authorities Recommendation O-117 or similar, and during operations will take into account any new guidance from the Navigation and Offshore Renewable Energy Liaison group. 					
Colour	The colour scheme for nacelles, blades and towers is generally RAL 703 (light grey). Foundation steelwork is generally RAL 1023 (traffic light yellow) up to Highest Astronomical Tide plus 15m or to Aids to Navigations, whichever is higher.					



Table 2-5: WTG foundation options.

		Design Envelope			
	Foundation	WTG	OSP	Caledonia North	Caledonia South
Bottom-fixed	Jackets with pin piles	\checkmark	\checkmark	\checkmark	\checkmark
Bottom-fixed	Jackets with suction caissons	\checkmark	\checkmark	\checkmark	\checkmark
Bottom-fixed	Monopiles	\checkmark	\checkmark	\checkmark	\checkmark
Bottom-fixed	Fully-restrained platforms	\checkmark	x	x	\checkmark
Floating	Semi-submersible platforms	\checkmark	x	x	\checkmark
Floating	Tension leg platforms	\checkmark	x	х	\checkmark

2.6 Consultation and Survey Work

- 2.6.1.1 As stated within Section 2.1, specific consultation and survey work has been undertaken to inform the development of the project design. This has included the following:
 - Survey Campaigns Completion of detailed geophysical, metocean, benthic ecology, intertidal and digital aerial marine mammals and ornithological survey campaigns in order to obtain detailed understanding of the existing environment and characteristic features of the seabed and marine environment; and
 - Consultation and Stakeholder Engagement Public consultation events and further (detailed) stakeholder engagement activities in relation to specific environmental topics and issues raised during the full EIA process, including consultation responses received during the scoping process.
 Examples include detailed consultation with the Ministry of Defence, commercial fisheries interests, marine traffic operators, aviation stakeholders and statutory nature conservation bodies. Feedback has been considered and actioned appropriately.
- 2.6.1.2 Following completion and modelling/analysis of survey campaign data, alongside ongoing consultation input, an iterative process of developing the project design from the high-level scoping design envelope to the more refined EIA design envelope presented within the EIA has taken place. Detailed engineering and technical evaluation and experience has driven this process to deliver a robust but flexible DE as refined as possible to allow a robust and considered EIA to be undertaken on the worst-case scenario resulting from this DE.

2.7 **Potential Implications for EIA Receptors**

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2.7.1.1 A review of the Scoping Opinion (Volume 7, Appendix 3) has been undertaken for each EIA receptor in relation to project design changes. This exercise has been undertaken to determine whether any of the potential significant effects have changed and whether these should remain scoped in or scoped out as determined previously. Table 2-6 summarises this validation exercise and the findings of this review.



Table 2-6: Potential implications for EIA receptors.

ReceptorSummary of Key Points from Scoping Opinion (Extracted)Justi	stification for Validity of Scoping Opinion
Marine and Coastal ProcessesBaseline DataScopThe Scottish Ministers are broadly content with the baseline data sources regarding marine and coastal processes used by the Developer in Table 6.1 of the Scoping Report. Advise that the baseline conditions for the Proposed Development should be informed by the EIA Reports of existing projects. The Scottish Ministers are otherwise content with the approach to the baseline environment.The Id devel The n (from found been have erefined inters disagree that 'modifications to the wave and tidal regime, and associated impacts to morphological features' and 'cumulative modifications to the wave and tidal regime and associated potential impacts to the sediment transport regime' are scoped out of the EIA Report.The c atter modifications to the Wave and tidal regime, and associated impacts to seabed morphology' must be scoped in for all aspects in line with the NatureScot representation. In line with the NatureScot representation, the Scottish Ministers advise that there should be further consultation with NatureScot on methods for numerical modelling and definition of the Zone of Influence in advance of submission of the EIA Report.With regards to mitigation, the Scottish Ministers agree with the NatureScot representation that for the impact pathways scoped in for marine and coastal processes, the full range of mitigation techniques and published guidance should be considered and discussed in the EIA Report. With regards to the Cumulative Impact Assessment (CIA), the Scottish Ministers draw attention to the NatureScot representation which advises that operational effects of existing projects on the wave, tidal and sediment transport regime should be explicitly included within the CIA.	 bping Opinion remains valid. a location of the Array Area has not inged, although the footprint for velopment has slightly reduced. a number of WTGs has been reduced on 150 to 140 WTGs) since scoping and ndations types within the DE have also an reduced. No new potential impacts we been identified as a result of the ned DE. a option to phase development does not are the Scoping Opinion as cumulative difications to the wave and tidal regime associated potential impacts to the liment transport regime remain scoped o the assessment.



Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
Marine Water and Sediment Quality	Baseline Data	Scoping Opinion remains valid.
	The Scottish Ministers are content with the baseline data sources regarding marine water and sediment quality used by the Developer in Table 7.1 of the Scoping Report. The Scottish Ministers advise in line with the NatureScot representation that a blue carbon assessment should be undertaken to expand on the information and assessment conducted for benthic ecology to focus on the potential impacts of the proposed development on marine sediments. The Developer must fully address the representation from NatureScot in the EIAR. The Scottish Ministers are otherwise content with the approach to the baseline environment. In Table 7.7 of the Scoping Report the Developer summarises the potential	The location of the Array Area has not changed, although the footprint for development has slightly reduced. The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping and foundations types within the DE have also been reduced. No new potential impacts have been identified as a result of the refined DE. The option to phase development does not
	impacts to marine water and sediment quality during the different phases of the Proposed Development. The Scottish Ministers agree with the impacts scoped in to and out of the EIAR and provide no further comments.	alter the Scoping Opinion as cumulative effects are scoped in to the assessment.
Benthic	Baseline Data	Scoping Opinion remains valid.
Subtidal and Intertidal Ecology	The Scottish Ministers are content with the proposed study area and broadly content with the baseline data sources (Table 8.1 of the Scoping Report).	The location of the Array Area has not changed, although the footprint for
	Survey Considerations	development has slightly reduced.
	Scottish Ministers (in line with NatureScot) advise that consideration should be given to the use of innovative environmental DNA sampling to complement the traditional methods planned for site-specific survey data collection.	the OECC identified within the Offshore Scoping Report.
	Scope	The number of WTGs has been reduced
	The Scottish Ministers broadly agree with the impacts scoped into the EIA Report but disagree with some of the impacts scoped out:	foundations types within the DE have also been reduced. No new potential impacts
	The Scottish Ministers advises that increased risk of invasive non-native species, changes in physical processes, Electromagnetic Field (EMF) effects and thermal load should be scoped in. The NatureScot and the Highland Council representation must be fully addressed by the Developer in this regard.	have been identified as a result of the refined DE.
		The option to phase development does not alter the Scoping Opinion as cumulative effects in relation to temporary increase in

Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	The Scottish Ministers highlight the Aberdeenshire Council representation which advises that any impacts of the cable landfall on SSSIs in the area of search from Sandend to Macduff should be considered in the EIA Report.	suspended sediment and sediment deposition are scoped in to the assessment.
	Regarding the HRA Screening Report, the Scottish Ministers agree with the conclusions specific to benthic subtidal and intertidal ecology which is supported by the NatureScot representation.	
Fish and	Baseline Data	Scoping Opinion remains valid.
Shellfish Ecology	The Scottish Ministers are broadly content with the proposed baseline data sources but advise that the additional data sets identified by NatureScot must be used in the assessment in the EIAR and the NatureScot representation must be	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
	implemented in full in the EIAR.	The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping and
	With regards to the study area, the Scottish Ministers are broadly content but advise that the NatureScot and Spey District Salmon Fishery Board (DSFB) representations regarding noise modelling for sandeel, herring and Atlantic salmon are implemented in full in the EIAR.	foundations/cabling/anchoring types have also been reduced/not altered. No new potential impacts have been identified as a result of the refined DE.
	The Scottish Ministers advise that underwater noise should be scoped into the EIAR for the operation and maintenance phases of the Proposed Development in line with the NatureScot representation, for both fixed and floating foundations.	The option to phase development does not alter the Scoping Opinion as cumulative effects in relation to temporary increase in suspended sediment and sediment
	UXO clearance and depending on the foundation type, disturbance cause by underwater noise during the construction phase, should be scoped in.	deposition/mortality, injury and behavioural changes resulting from underwater noise arising from construction activity are scoped in to the assessment.
	EMF	
	The Scottish Ministers disagree with the Developers proposal to scope out EMF effects which is a view supported by NatureScot and the Highland Council. Impacts from EMF from subsea electromagnetic cabling should be scoped into the EIAR for the operational phase of the Proposed Development (Offshore) and should be considered for all relevant fish species, including elasmobranch species, nephrops, diadromous fish, including migratory fish.	,

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Receptor

Summary of Key Points from Scoping Opinion (Extracted)

Justification for Validity of Scoping Opinion

INNS

The Scottish Ministers also disagree with the Developers proposal to scope out increased risk of introduction and/or spread of Invasive Non-native Species (INNS). In line with the NatureScot and the Highland Council representations this must be scoped in for all phases of the Proposed Development due to an increase in vessel traffic and opportunities for hard structures on which to colonise.

Due to the novel nature of floating offshore wind foundations and the FRP fixed foundations, colonisation of hard structures should be scoped into the EIAR for the operation and maintenance phase of the Proposed Development.

Spey DSFB Concern – Prey and Migration Impacts

Scottish Ministers advise that more consideration of changes in prey species and their habitats is required in the EIA Report. This view is in line with the NatureScot representation, which must be fully addressed in this regard.

The Scottish Ministers highlight the Spey DSFB representation which identifies that the proposed cable route runs through an area of kelp forest that may be an important overwintering habitat to sea trout. Spey DSFB also notes potential to create additional hunting grounds for piscivorous birds, seals and large predatory fish (due to WTGs) thus, pressure on migrating salmonids in the Moray Firth. It also notes the potential impact to Atlantic salmon smolt migration due to construction.

Approach to Assessment

The Scottish Ministers agree with the remaining impacts scoped in to and out of the EIAR. The Developer must fully address the representation from the Spey DSFB and NatureScot in the EIAR.

Approach to Nitigation

With regards to mitigation, the Scottish Ministers agree with the NatureScot representation that the full range of mitigation techniques and published guidance should be considered and discussed in the EIAR.



Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	Cumulative Impacts	
	The Scottish Ministers advise in line with the NatureScot representation that the Developer should consider the cumulative effects of key impacts such as habitat loss or change, especially in relation to diadromous fish as well as key fish and shellfish species that contribute to ecological importance as a prey resource.	
	HRA	
	Scottish Ministers advise that all SACs designated for Atlantic salmon in Scotland are screened in at this stage for further assessment, in line with the NatureScot representation. The Scottish Ministers also agree with the NatureScot representation that all SACs with Fresh Water Pearl Mussels (FWPM) as a qualifying feature should also be screened in for further assessment as Atlantic salmon are a host species for FWPM during a critical parasitic phase of the FWPM life cycle and therefore indirect impacts require consideration to ensure populations are not adversely affected. The Developer should discuss with NatureScot how this will be assessed in the next stage of the HRA process.	
	Further consideration is required for incombination impacts in relation to the HRA Screening given the 100km approach is not appropriate for migratory fish. The Developer must fully address the NatureScot representation with regards to HRA.	
	The Scottish Ministers agree with the Developer to screen in the River Spey SAC for sea and river lamprey as it is possible migration routes may overlap the Proposed Development which is in line with the NatureScot representation.	
Offshore	Baseline Data	Scoping Opinion remains valid.
Ornithology	The Scottish Ministers are broadly content with the data sources listed, however in line with the NatureScot representation advise that caution should be applied when considering data exceeding 5 years. This data should be treated as contex	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
	only and should not be used to determine baseline characterisation.	The number of WTGs has been reduced
	Baseline Characterisation	(from 150 to 140 WTGs) since scoping, the minimum air gap remains at 35m and the
	Ministers cannot provide comment because the Scoping Report does not include any data from the initial 12 months of Digital Aerial Surveys (DAS). Additionally, the Scoping Report does not include a description of the proposed analysis of the	maximum rotor diameter has not altered. The maximum blade tip height has

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	DAS or how additional data from other Moray Firth OWFs will be incorporated. further discussion should be had with NatureScot in this regard. However, in line with the Royal Society for the Protection of Birds (RSPB) representation, the Scottish Ministers request that any deceased birds are recorded to help better understand the impacts of the Highly Pathogenic Avian Influenza (HPAI) outbreak.	increased by 5m. No new potential impacts have been identified as a result of the refined DE.The option to phase development does not alter the Scoping Opinion as cumulative effects are scoped in to the assessment.
	Impact Pathways	
	The Scottish Ministers broadly agree with the Developer's proposals, however in line with the NatureScot representation, impacts from wet storage must be scoped in for further assessment in the EIAR.	
	The Scottish Ministers agree with the NatureScot and RSPB representations that barrier effects must be scoped into the EIAR. However, the Scottish Ministers are content for the Developer to consider these effects alongside the displacement pathways that are already being scoped into the EIAR. Additionally, the displacement analysis should also consider kittiwake.	
	Operational disturbance and displacement within the OECC should not be scoped out of the EIAR. This impact pathway should be scoped in and the NatureScot representation in this regard fully addressed.	
	Impacts of lighting on ornithological receptors must be scoped into the EIAR for both fixed WTGs and OSP and floating WTGs for all phases of the Proposed Development (Offshore).	
	Where significant impact pathways have been identified, the full range of mitigation techniques and published guidance is considered and discussed in the EIAR. In line with the NatureScot representation, the Scottish Ministers advise that the embedded mitigation looks appropriate, but a wet storage plan is included within the embedded mitigation and that operational and maintenance activities are included within the vessel management plan.	
	Site-specific Data	
	In line with the NatureScot and RSPB representations, the Scottish Ministers advise that in the absence of site-specific data having been included in the Scoping Report, no species can be scoped out of further consideration. The	



Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	NatureScot and RSPB representations regarding 'important ornithological features' must be addressed in full by the Developer in the EIAR.	
	Indirect Impacts - Poliution	
	Scottish Ministers are content for indirect impacts of accidental pollution on bird species to be scoped out of the ornithological receptor chapter within the EIAR provided the effects of accidental pollution are adequately addressed in another relevant chapter.	
	Approach to Assessment	
	Advise that the Developer must refer to breeding and non-breeding season definitions as NatureScot refer to them in its guidance. This will require Table 10.3 to be updated in the EIAR with any reference to "bio-seasons" amended.	
	Displacement and Barrier Effects	
	The SeabORD tool should be used for Atlantic puffin, common guillemot, razorbill and blacklegged kittiwake during the breeding seasons. The Scottish Ministers also highlight the advice regarding the use of SeabORD within NatureScot's representation. All other species should be assessed using the matrix approach. If it is possible to undertake a bespoke individual based model, agreement from NatureScot is required. For the species where SeabORD is used during the breeding season, the matrix approach should be used during the non-breeding season, with the exception of common guillemot where the population and impacts should be based on an assessment derived from the breeding season foraging range.	
	In regard to displacement the Scottish Ministers advise that the displacement and mortality ranges contained within with the NatureScot representation must be used for the assessment in the EIA Report. The Scottish Ministers advise that the NatureScot representation in regard to barrier and displacement is addressed in full in the EIA Report. The Developer must also make it clear which approach has been applied to which species, for both breeding and non-breeding seasons.	
	Collision Risk	
	Advise that in addition to deterministic Collision Risk Modelling, stochastic models	

should also be presented. Flight height distribution from Johnson *et al.* (2014²³)

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	with corrigendum should be used, in line with the RSPB and NatureScot representations. In regard to flight speed, the Developer should engage with NatureScot to discuss appropriate, evidence-based values to be used.	
	In regard to avoidance rates the Scottish Ministers advise that the Statutory Nature Conservation Body guidance (2014) on avoidance rates should be used with a standard deviation of +/- 2. For species where there are no agreed avoidance rates, The Scottish Ministers recommend use of 98% as default and where there are terrestrial estimates based on the species in question, those rates should be used. Outputs from each model should be supplied in full as appendices with input parameters stored. This advice is in line with the NatureScot representation and for the avoidance of doubt, the NatureScot representation in regard to collision risk, avoidance rates, presentation of outputs and strategic collision risk must be addressed in full in the EIAR by the developer.	
	Potential collision risk to migratory species should be assessed qualitatively with reference to the survey results and the Marine Scotland commissioned strategic level report. Marine Scotland are also in the process of commissioning an updated strategic review of migratory routes via ScotMER. This update should be used if available within assessment timescales.	
	Apportioning	
	Advise that in order to consider any population consequences arising from displacement and estimated collisions, the overall impacts will need to be apportioned by season, between SPAs and across age classes. The NatureScot representation regarding apportioning must be addressed in full by the Developer in the EIAR.	
	With regards to population consequences the Scottish Ministers agree with the intention to use the Natural England Population Viability Analysis tool.	
	Cumulative Effects	
	The Scottish Ministers are content with the use the Cumulative Effects Framework. The Developer should agree the proposed list for the cumulative assessment with NatureScot and Marine Scotland. The Developer must implement	



Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	the NatureScot representation regarding the cumulative assessment for breeding and non-breeding seasons. HPAI	
	The Scoping Report does not make reference to the recent outbreak of HPAI. In line with the NatureScot representation, a qualitative assessment of the Proposed Development in light of HPAI should be presented in the EIAR.	
	HRA	
	The Scottish Ministers note the NatureScot representation that derogations will likely be required under the Habitats Regulations. The Developer must provide evidence in the EIAR of how all associated tests are met and present a suitable compensation package.	
	In addition to the impact pathways identified, impacts of wet storage have not been sufficiently addressed. The Scottish Ministers advise further assessment of potential impacts is required in the HRA, in line with the NatureScot representation.	
	The Scottish Ministers broadly agree with the use Woodward <i>et al.</i> (2019 ²⁴) in regard to foraging ranges, with the exception of gannets, guillemots and razorbills. The NatureScot advise contained in Annex 1 of its representation must be fully addressed by the Developer in the EIA Report. Additionally, the Scottish Ministers advise that shag must be scoped in for further assessment for the Moray Firth SPA. Impacts on Sandwich tern at Ythan Estuary SPA must also be scoped in for assessment during the construction phase within the export cable corridor.	
	In line with the NatureScot representation, The Scottish Ministers advise that the mean foraging ranges for Leach's petrel should be in line with Woodward <i>et al.</i> (2019 ²⁴). Therefore, in addition to those identified North Rona and Sula Sgeir SPA, Foula SPA, Flannan Isles SPA, Sule Skerry and Sule Stack SPA, St Kilda SPA and Ramna stacks and Gruney SPA must be scoped in the HRA for further assessment.	
	The Scottish Ministers disagree that SPAs should be scoped out on the basis that they are located on the west coast of the UK. The screening process for HRA requires that all species with theoretical connectivity are screened in for further	

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	consideration – taking into account at sea connectivity distances. Therefore, the following species and sites must be considered to have Likely Significant Effect (LSE); Handa SPA for Great skua, Fulmar and Kittiwake, Guillemot and Razorbill; Priest Island (Summer Isles) SPA for Storm Petrel; Shiant Isles SPA for Kittiwake, Fulmar and Puffin; Rum SPA for Manx shearwater; Canna and Sanday SPA for Kittiwake and Puffin; Flannan Isles SPA for Kittiwake, Fulmar and Leach's Petrel; Treshnish Isles SPA for Storm petrel; Mingulay and Berneray SPA for Fulmar and St Kilda SPA for Gannet, Fulmar, Manx shearwater, Great skua, and Leach's petrel. The Developer should refer to Annex 1 of the NatureScot representation for guidance on establishing connectivity.	
	In regard to connectivity and identification of key sites for migratory birds (non- seabirds), the Scottish Ministers highlight the NatureScot representation and advise that is this is considered by the Developer in the HRA.	
	In regards to transboundary impacts, in addition to those identified, in line with the NatureScot representation, the Scottish Ministers advise that the following SPAs should be considered to have LSE and be screened in for assessment in the HRA: Rathlin Island SPA for Fulmar; Copelin Islands SPA for Manx shearwater; Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast SPA and Bardsey Island SPA for Manx shearwater; Skomer, Skokholm and the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA for Manx shearwater; Isles of Scilly SPA for Fulmar and Manx shearwater.	
	The Developer should also note the RSPB HRA representation in regard to the exclusion of Sooty shearwater, Manx shearwater, European storm petrel and Leach's storm petrel. This must be addressed in full by the Developer in the HRA.	
	The Developer should consider the RSPB HRA representation, in regard to the request for matrix tables to be provided showing evidence supporting conclusions for HRA screening assessments.	
Marine Mammals and Other Megafauna	Baseline Study The Scottish Ministers are content with the study area listed in section 11.2 of the Scoping Report and are broadly content with the baseline data sources identified in 11.3 of the Scoping Report. The Developer should, however, make	Scoping Opinion remains valid. The location of the Array Area has not changed, although the footprint for development has slightly reduced.

 amendments to references identified and ensure that the citations included in the representation from the University of Aberdeen Lighthouse Field Station are included in the EIAR. The Scottish Ministers confirm, in line with the NatureScot representation that passive acoustic monitoring, in addition to DAS is not required for baseline characterisation, given the extensive acoustic survey work already undertaken in the region. In line with the NatureScot representation, the Scottish Ministers advise using the regional content e.g., SCANS survey blocks. Impact Pathways The Scottish Ministers advise, potential impacts from electromagnetic fields (EMF) on cetaceans and basking sharks, and operational noise must also be scoped in and the NatureScot representation in this regard addressed in full in the EIAR. Additionally, indirect entanglement must also be considered for the fully restrained platform foundation design. Increased vessel disturbance in coastal areas should also be assessed in the EIAR, in line with the University of Aberdeen Lighthouse Field Station representation. 	WTGs has been reduced 0 WTGs) since scoping, ing technology has not ig foundations are only aledonia South. GBS have
The Scottish Ministers confirm, in line with the NatureScot representation that passive acoustic monitoring, in addition to DAS is not required for baseline characterisation, given the extensive acoustic survey work already undertaken in the region. In line with the NatureScot representation, the Scottish Ministers advise using the UK portion of the management Unit (MU) as the reference population, and where appropriate, the assessment should also look at smaller units to provide a regional content e.g., SCANS survey blocks. Impact Pathways The Scottish Ministers advise, potential impacts from electromagnetic fields (EMF) on cetaceans and basking sharks, and operational noise must also be scoped in and the NatureScot representation in this regard addressed in full in the EIAR. Additionally, indirect entanglement must also be considered for the fully restrained platform foundation design. Increased vessel disturbance in coastal areas should also be assessed in the EIAR, in line with the University of Aberdeen Lighthouse Field Station representation.	ng foundations are only aledonia South. GBS have
In line with the NatureScot representation, the Scottish Ministers advise using the UK portion of the management Unit (MU) as the reference population, and where appropriate, the assessment should also look at smaller units to provide a regional content e.g., SCANS survey blocks. Impact Pathways The Scottish Ministers advise, potential impacts from electromagnetic fields (EMF) on cetaceans and basking sharks, and operational noise must also be scoped in and the NatureScot representation in this regard addressed in full in the EIAR. Additionally, indirect entanglement must also be considered for the fully restrained platform foundation design. Increased vessel disturbance in coastal areas should also be assessed in the EIAR, in line with the University of Aberdeen Lighthouse Field Station representation. The Scottish Ministers welcome the Developer's recognition of the minke whale	changed. Floating foundations are only located within Caledonia South. GBS have been removed. No new potential impacts have been identified as a result of the refined DE. Previously scoped out impacts
The option of the management of the field also look at smaller units to provide a regional content e.g., SCANS survey blocks. Impact Pathways The Scottish Ministers advise, potential impacts from electromagnetic fields (EMF) on cetaceans and basking sharks, and operational noise must also be scoped in and the NatureScot representation in this regard addressed in full in the EIAR. Additionally, indirect entanglement must also be considered for the fully restrained platform foundation design. Increased vessel disturbance in coastal areas should also be assessed in the EIAR, in line with the University of Aberdeen Lighthouse Field Station representation.	ed in as recommended.
Impact PathwaysiPCoD modellingThe Scottish Ministers advise, potential impacts from electromagnetic fields (EMF)inform the cumion cetaceans and basking sharks, and operational noise must also be scoped in and the NatureScot representation in this regard addressed in full in the EIAR. Additionally, indirect entanglement must also be considered for the fully restrained platform foundation design. Increased vessel disturbance in coastal areas should also be assessed in the EIAR, in line with the University of Aberdeen Lighthouse Field Station representation.within the Fish a ministers welcome the Developer's recognition of the minke whale	The option to phase development does not alter the Scoping Opinion as cumulative effects are scoped in to the assessment. iPCoD modelling is also being used to inform the cumulative assessment. It is noted that since scoping, 'Other Megafauna' has now been incorporated within the Fish and Shellfish Ecology.
The Scottish Ministers advise, potential impacts from electromagnetic fields (EMF) Inform the cum on cetaceans and basking sharks, and operational noise must also be scoped in and the NatureScot representation in this regard addressed in full in the EIAR. Additionally, indirect entanglement must also be considered for the fully restrained platform foundation design. Increased vessel disturbance in coastal areas should also be assessed in the EIAR, in line with the University of Aberdeen Lighthouse Field Station representation. The Scottish Ministers welcome the Developer's recognition of the minke whale	
The Scottish Ministers welcome the Developer's recognition of the minke whale	
qualifying interest for Southern Trench Nature Conservation Marine Protected Area within Table 11.2. Consideration of the Proposed Development's effects on the minke whales of Southern Trench Nature Conservation Marine Protected Area should cover all impact pathways but pay particular attention to potential effects arising from the export cable corridor route.	
The Scottish Ministers advise that, where impact pathways have been identified, a full range of mitigation techniques and published guidance should be considered in the EIAR. The Developer must also develop and adhere to a Marine Mammal Mitigation Protocol as part of the EIAR. This advice is in line with the NatureScot representation.	

Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	Additionally, the Scottish Ministers also highlight the NatureScot representation that the approach to cumulative impact assessments for marine mammal interests, must be discussed with NatureScot, prior to the submission of the EIAR.	
	HRA	
	The Scottish Ministers are content with the protected sites scoped in and out for bottlenose dolphins and harbour porpoise. The Scottish Ministers do not agree with the sites scoped in for grey seals and harbour seals. The NatureScot representation in regard to grey seals and harbour seals must be implemented in full by the Developer in the HRA.	
Commercial	Baseline Data	Scoping Opinion remains valid.
Fisheries	In addition to those identified the Scottish Ministers advise that the 2021 fisheries data is now available and should be utilised, in line with the Marine Scotland Science advice.	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
	The Scottish Ministers agree with all the impacts scoped in and out of the EIAR in line with the Marine Scotland Science advice.	The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping and
	The Scottish Ministers highlight the Scottish Fishermen's Federation representation in regard to displacement on whitefish, nephrops, scallops and squid fishers and advise that the Developer should consider this in the EIAR. Additionally, assessments for king scallop should take place over a minimum of 7 years, though ideally 10 if the data is available, to present the fullest picture of the fishery possible.	foundations/cabling/anchoring types have also been reduced/not altered. No new potential impacts have been identified as a result of the refined DE.
		The option to phase development does not alter the Scoping Opinion as cumulative effects are scoped in to the assessment.
Shipping and Navigation	Baseline Data	Scoping Opinion remains valid.
	The Scottish Ministers are content with the study area identified in section 13.2 of the Scoping Report. With regards to baseline data listed in table 13.1 of the Scoping Report, the Scottish Ministers direct the Developer to the representation to the UKCoS. The Scottish Ministers advise that the Marine Accident Investigation Branch spatial accident data included within the EIAR must be increased from 10 years to 20 years to fully assess trends and historic incidents.	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
		The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping and foundations/cabling/anchoring types have

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In line with the representation from the MCA, the Scottish Ministers are content that the two separate 14 day periods of AIS data set out in the Scoping Report meets the standard MGN 654, however highlight the advice from the UKCoS that an additional full 12 months of AIS data should be included in the EIAR. The Scottish Ministers advise that the Developer must engage further with the MCA and UKCoS to reach a suitable agreement on the provision of AIS data and document the rationale for the final approach within the EIA Report. Only AIS data from either 2019 or 2021 must be utilised within the EIAR due to the impact of the Covid-19 pandemic on shipping, and in particular on cruise and passenger traffic during 2020.

Scope

The Scottish Ministers broadly agreed with the impacts scoped in and out however, advise that cumulative and transboundary effects must also be scoped into the EIAR. This is in line with the UKCoS, MCA and RYA representations.

Cabling Routes and Cable Burial

The Scottish Ministers advise that a Burial Protection Index should be completed and, subject to the traffic volumes, an anchor penetration study may be necessary. The Scottish Ministers advise that this should be fully addressed in the EIAR and highlight the MCA advice on a maximum 5% reduction in surrounding depth referenced to Chart Datum if cable protection measures are required and in particular where depths are decreasing towards shore.

EMF

Developer must give consideration within the EIAR for the potential effect of electromagnetic deviation on ships' compasses should High-Voltage Direct Current transmission infrastructure be installed. For completeness, the Scottish Minsters highlight the advice from the MCA regarding the maximum deviation from the cable route.

Search and Rescue (SAR)

The Scottish Ministers also highlight the MCA representation regarding SAR, Emergency Response Co-operation Plans, levels of radar surveillance, AIS and shore-based VHF radio coverage. The Scottish Ministers advise that the MCA also been reduced/not altered. No new potential impacts have been identified as a result of the refined DE.

The NRA has assessed 12 months of AIS data from November 2022 to October 2023.

The option to phase development does not alter the Scoping Opinion as cumulative effects are scoped in to the assessment.

Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	representation must be fully addressed in the EIAR and that a SAR checklist must be completed by the Developer in consultation with the MCA. In relation to the proposed embedded mitigation measures, the Scottish Ministers highlight the representations from the MCA, CoS and NLB which must be fully addressed by the Developer.	
	Foundations	
	If floating foundations are selected the MCA confirmed that compliance with regulatory expectations for floating infrastructure is required and Third-Party Verification of the mooring arrangements will be required. The MCA highlighted that the International Association of Marine Aids to Navigation and Lighthouse Authorities recommendations 0-139 Marking of Man-Made Offshore Structures has been replaced by G1162 ED1.0.	
	Ports	
	Should the Developer plan to use any ports within the Highland Council area for construction or supply chain components, this must be assessed within the EIAR.	
Marine	Baseline Data	Scoping Opinion remains valid.
Archaeology and Cultural Heritage	The Scottish Ministers are content with the proposed study area as described in paragraph 14.2.1.1 of the Scoping Report. The Developer sets out the baseline data sources regarding marine archaeology and cultural heritage in Table 14.1 of the Scoping Report. The Scottish Ministers advise that the list of baseline data sources set out in paragraph 14.8.1.1 of the Scoping Report should be broadened for the marine component of the Proposed Development (Offshore) to also include nautical charts and site-specific survey work in line with the HES representation. The HES representation also reiterates the importance that site surveys should be designed so that the presence or absence of submerged or semi-submerged paleo landscapes can be identified.	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
		The location of the OECC remains within the OECC identified within the Offshore Scoping Report.
		The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping and foundations/cabling/anchoring types have
	The Scoping Report identifies the Aberdeenshire and Moray Historic Environment Records (HER) as unavailable. In line with the Aberdeenshire Council representation, the Scottish Ministers advise that the HER is available, and the Developer should include the HER data in the EIAR. If the data is unavailable, the Developer should contact Aberdeenshire Council prior to submission of the EIAR	potential impacts have been identified as a result of the refined DE.

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	to discuss and agree its approach. The Scottish Ministers are otherwise content with the baseline data sources and the approach to the baseline environment. Scope	The option to phase development does not alter the Scoping Opinion as cumulative effects are scoped in to the assessment.
	The Scottish Ministers agree with the impacts scoped in to and out of the EIA Report. However, the Scottish Ministers advise, in line with the HES representation that onshore heritage assets as an impact pathway, should in scoped in for further assessment in the EIAR. Assessment of the impacts of the Proposed Development on onshore heritage assets including A-listed buildings, inventory gardens and designed landscapes and scheduled monuments should be included in the EIAR. If these impacts are excluded after assessment, a written explanation of the process and results of the assessment and reasons for their exclusion should be provided in the EIA Report.	
	Listed buildings and conservation areas on the coastal edge, from at least Noss Point to Dunbeath Castle should be considered and tested for impacts arising upon their seaward setting. The Scottish Ministers further highlight the Highland Council representation which advises that the Developer should identify all designated sites which may be affected by the Proposed Development. Any assessment should contain a full appreciation of the setting of the historic environment assets and the likely impact on their settings. Where significant impacts are likely, the Developer should provide appropriate visualisations in the EIAR.	
	Approach to Assessment	
	During any UXO clearance activities there should be provisions for archaeological assessment and recording should a target be identified as not being a UXO but still requires removal.	
	Approach to Mitigation	
	In addition to that set out in paragraph 14.4.1.2 and in line with the HES representation, the Scottish Ministers advise that further mitigation is necessary. Specifically, that the EIAR include: avoidance of known/identified heritage features using Archaeological Exclusion Zones and a pre-defined buffer; archaeological monitoring of works in the intertidal zone at potentially sensitive	

Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	landfalls, covered by a Written Scheme of Investigation and; implementation of a Protocol for Archaeological Discoveries for works below the low water mark where a watching brief would not be feasible.	
Military and Civil Aviation	 Baseline Data The Scottish Ministers are broadly content with the study area and that the baseline data gathered for the assessment is appropriate. However, The Scottish Ministers highlight the MOD representation which identifies that there are two primary air traffic control surveillance radars active at RAF Lossiemouth and the impacts of the Proposed Development on these radars must be considered and appropriate mitigation proposed, in the EIA Report. Impacts on these arising from the Proposed Development must be considered within the EIA Report. The precision approach radar which is present at RAF Lossiemouth must also be included in the assessment. Radar Infrastructure Impact The Scottish Ministers highlight the representation by NATS which predicts that the Proposed Development is likely to generate an unacceptable level of clutter to its Radar infrastructure. The Scottish Ministers advise that the Developer validates this position in relation to the generation of radar clutter and explore how this could be mitigated in the EIA Report. NATS has also advised that the Proposed Development will likely have unacceptable impacts to Prestwick Air Traffic Control ("ATC"), Aberdeen Offshore ATC and Military ATC. The Scottish Ministers recommend the Developer engage further with NATS on these points and advise that these impacts must be assessed, including mitigation, if necessary, in the EIA Report. 	Scoping Opinion remains valid. The location of the Array Area has not changed, although the footprint for development has slightly reduced. The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping. No new potential impacts have been identified as a result of the refined DE. Detailed consultation has been taking place with aviation stakeholders. The option to phase development does not alter the Scoping Opinion as cumulative effects are scoped in to the assessment.
	Developer must ensure that no intrastructure related to the Proposed Development is installed within the boundary identified in the MOD representation. Military training activities are conducted in this Danger Area and EIA Report should consider the effects of vessels, barges, platforms and associated traffic present during the construction of the Proposed Development to ensure it does not interfere with these activities.	

Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	Consideration of Community Interests	
	The Developer must demonstrate consideration of community interests it has identified relating to aviation, radar and telecommunications as part of the EIA Report. Written records of discussions and outcomes of consultations with any relevant authorities, as detailed in the Highland Council representation within Appendix I, must be included within the EIA Report. In the event that no such effects are identified, the rationale must still be included in the EIA Report.	
	The Scottish Ministers note that HIAL have submitted a holding objection, pending the Developer's completion of an Aviation Impact Feasibility Study ("AIFS") to consider potential effects of the Proposed Development on Wick airport. The Developer must address the HIAL representation in regard to the AIFS in full in the EIA Report.	
Seascape,	Baseline Data	Scoping Opinion remains valid.
Landscape and Visual Impact (SLVIA)	The Developer should consider the night-time component of the character and visual amenity, in line with the NatureScot representation. The Scottish Ministers are otherwise content with the baseline data sources and the approach to the baseline environment. In line with the NatureScot representation, the landscape baseline assessment should include the Proposed Development in addition to existing and/or under construction OWFs (terrestrial and marine).	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
		The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping. No new potential impacts have been identified
	Study Area	as a result of the refined DE.
	The Scottish Ministers advise that the study area should be a radius of 60km from the boundary of the Proposed Development which is in line with the Highland Council representation. The SLVIA should be completed in full across the entire study area and the Developer should note the Highland Council does not consider it to be acceptable to screen out viewpoints for a full assessment based on distance.	The option to phase development does not alter the Scoping Opinion as cumulative effects are scoped in to the assessment.
	The Scottish Ministers advise that two additional viewpoints are required, Dunnet Head and a night-time visualisation from VP6 Lybster. Additionally, the Scottish Ministers advise that viewpoints and wireframes for the SLVIA must be agreed in advance of preparation of any visuals with the Highland Council.	

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Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	In addition, the Scottish Ministers highlight the Moray Council representation which requests that a viewpoint is selected from within Moray, such as from Cullen viaduct or some other coastal viewpoint at the eastern side of Moray. The Developer should also note that Community Councils may request additional viewpoints and therefore the Scottish Ministers advise the Developer to discuss this with the local community and Community Councils prior to submission of the EIA Report.	
	The detailed location of viewpoints should be informed by site surveys, mapping and predicted Zones of Theoretical Visibility and the purpose of the selected and agreed viewpoints must be clearly identified and stated in the EIA Report. The Scottish Ministers also highlight the detailed advice for the photographer within the Highland Council representation.	
	Scope	
	The Scottish Ministers agree with the impacts scoped into the EIA Report but disagree with some of the impacts scoped out. The Developer must fully address the NatureScot, the Moray Council and the Highland Council representations in this regard, in the EIA Report.	
	Impacts during the construction and decommissioning phase should be scoped into the EIA Report. In addition, effects beyond 50km should not be scoped out of the EIA Report and instead this should be updated to a 60km radius, and these impacts should be scoped into the EIA Report.	
	The Scottish Ministers disagree with the proposal to scope out the impact of the operation and maintenance of the Proposed Development experienced by offshore visual receptors and this impact should therefore be scoped into the EIA Report. This is in line with the Highland Council representation.	
	Approach to Assessment	
	The Developer should ensure that the Highland Council representation is addressed with regards to the requirements for route assessments including impacts on tourist and recreational routes and sequential route assessments.	
	The Scottish Ministers advise that the assessment should include impacts on any landscapes designated at a national and local scale including the impact on	



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Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	Special Landscape Area which should be undertaken using the citations available from the Highland Council website. Cumulative Impacts	
	NatureScot considers that the most likely significant effects are to be derived from the cumulative design relationship between the existing and/or under construction OWFs in the Moray Firth and the Proposed Development. The Scottish Ministers agree with NatureScot and encourage that, as part of design iteration, consideration is given to alternative heights and locations within the Array Area to mitigate potential significant effects from poor cumulative composition and higher turbines on sensitive coastal receptors, in particular on the closest east Sutherland coast. The Developer should assess the cumulative seascape, landscape and visual impacts in the EIA Report in line with the NatureScot representation. Additionally, the Developer should review the wind energy map provided by the Highland Council and also note the requirements for images for presentation within the Panoramic Digital Viewer.	
	The Scottish Ministers further highlight the NatureScot representation which identifies that the use of both fixed and floating WTG technologies could potentially avoid or reduce the appearance of illogical gaps or breaks in the layout and that the use of different turbine heights within the Array Area could reduce significant cumulative effects arising from the substantial difference in turbine heights proposed against those of existing OWFs (in particular Beatrice and Moray East). As part of design iteration, the Developer must aim to produce a cohesive composition with the existing Moray OWFs in line with the NatureScot representation.	
Socio- economics, Tourism and Recreation	Baseline Data With regards to the baseline environment, in addition to the indicators identified, the Scottish Ministers advise that the Developer must include the additional indicators identified by the MAU in its advice. The Developer should engage with Marine Scotland on the planned stakeholder engagement and social research methods for primary data collection in line with the MAU advice.	Scoping Opinion remains valid. The location of the Array Area has not changed, although the footprint for development has slightly reduced. The location of the offshore export cable route and landfall remains within the

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Summary of Key Points from Scoping Opinion (Extracted)

Justification for Validity of Scoping Opinion

Study Area

With regards to the study area identified in section 17.2 of the Scoping Report, the Scottish Ministers advise that the local study area may be too large to enable sufficiently granular analysis for certain socio-economic impacts. The Developer should refer to Annex 1 of the MAU advice and consider how to define the impact area in line with this.

With regards to the study area for Tourism and Recreation, sea cliff climbing should be considered in Table 17.7. Particular attention should be paid to cable landfall locations. With regards to the Proposed Development's effects on tourism and recreation, the Scottish Ministers highlight the representation of Mountaineering Scotland. The Developer must consider potential effects of the works, particularly landfall points for export cables, on local sea cliff climbing interests.

Scope

The Scottish Ministers are broadly content with the impacts listed in Table 17.9 of the Scoping Report, which the Developer proposes to scope in and out of the EIA Report. However, the Scottish Ministers advise that the MAU advice in relation to scoping of impacts, specifically GVA and Employment Impacts, Commercial Fisheries and Social Impacts, and the Highland Council's representation is addressed in full by the Developer in the EIA Report. For the avoidance of doubt, the Scottish Ministers advise that the Developer should undertake a full Socio-Economic Impact Assessment and in completing this, direct the Developer to the principles outlined in the "Annex 1: General Advice for Socio-Economic Impact Assessment Marine Analytical Unit, December 2022" advice from MAU.

The Scottish Ministers recommends the Developer using the wind farm and transmission network development experience to help assess the bases of any likely impacts, setting out these impacts and their consequent mitigations to local, regional and national economies where necessary.

offshore export cable corridor identified within the Offshore Scoping Report.

No new potential impacts on supply chain have been identified as a result of the refined DE.

The option to phase development does not alter the Scoping Opinion as potential timing of the Proposed Development (Offshore) is relation to cumulative effects is scoped in to the assessment.

Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
Climate	Baseline Data	Scoping Opinion remains valid.
	The Scottish Ministers agree with the NatureScot representation that a blue carbon assessment should be undertaken in addition to the assessments listed in paragraph 18.1.1.2 of the Scoping Report as outlined above in section 5.3 of this Scoping Opinion. The Scottish Ministers are otherwise content with the baseline data sources and the approach to the baseline environment. Scope The Scottish Ministers agree with the impacts scoped into the EIA Report but advise that consideration of the carbon cost of the wind farm (including supply chain) and to what extent this is offset through the production of green energy should also be scoped into the EIA Report in line with the NatureScot representation. The Developer must fully address the representation from NatureScot in the EIA Report.	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
		The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping and foundations/cabling/anchoring types have also been reduced/not altered. No new potential impacts have been identified as a result of the refined DE.
		The location, construction and installation of the OECC and landfall remains within the OECC identified within the Offshore Scoping Report.
Other Human	Baseline Data	Scoping Opinion remains valid.
Activities	The Scottish Ministers are content with the baseline data sources regarding other human activities identified by the Developer in Table 19.1 of the Scoping Report and are content with the approach to the baseline environment. The Scottish	The location of the Array Area has not changed, although the footprint for development has slightly reduced.
	Ministers emphasise the importance of engaging with other marine users, including developers of ScotWind projects, throughout all phases of the Proposed Development.	The number of WTGs has been reduced (from 150 to 140 WTGs) since scoping and foundations/cabling/anchoring types have also been reduced/not altered. No new potential impacts have been identified as a result of the refined DE.
	Scope	
	The Scottish Ministers agree with the impacts scoped in to and out of the EIA Report. In addition, the Developer must fully address the representations from BT, SSE and the Highland Council in the EIA Report.	
		The location, construction and installation of the OECC and landfall remains within the OECC identified within the Offshore Scoping Report.
	The Scottish Ministers direct the Developer to the Highland Council representation which suggests it is possible that aspects of the Proposed Development associated with the supply chain and construction may directly utilise the areas within its boundaries. Therefore, the Scottish Ministers advise in line with the Highland	



Receptor	Summary of Key Points from Scoping Opinion (Extracted)	Justification for Validity of Scoping Opinion
	Council representation that where this is confirmed to be the case, the relevant assessments should be updated.	
	As there is no appropriate specific receptor, the Developer should address the Highland Council representation regarding land use in the other human activities chapter of the EIA Report. This should include recognising the existing land uses affected by the Proposed Development with particular regard for the Highland Council's development Plan inclusive of all statutorily adopted supplementary guidance.	
	The Scottish Ministers highlight the SSE representation which requires the Developer to engage with Scottish Hydro-Electric Transmission regarding the Caithness – Moray High Voltage Direct Current link which is situated within the Proposed Development area. Consideration should also be given to the cable landfall selection so as not to unnecessarily exclude future potential cable landfalls within the proposed export cable corridor. The Scottish Ministers also highlight the representation from BT that grid references and structure heights should be provided.	

3 Summary

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- 3.1.1.1 At the time of submission of the Offshore Scoping Report (Volume 7, Appendix 2), a central theme is the limited development of detailed project design and, therefore, inability to refine the project design to any level of detailed certainty without introducing risk to the consenting process. Detailed design is not possible at the start of the EIA process due to limited availability of site-specific data (project specific surveys are not usually completed before there is more certainty in grid connection, potentially landfall and offshore routing options) and due to continued advancement of engineering and technical design aspects. In addition, technology itself develops significantly over short timeframes as new technology is designed, tested, researched, enhanced and deployed. This leads to relatively high level project DE during scoping which can then create areas of uncertainty, particularly from the perspective of the Ministers and other relevant stakeholders in their capacity to provide a fully informed opinion.
- 3.1.1.2 For the Proposed Development (Offshore) and the creation of the DE, the 'Rochdale Envelope' concept has been applied in accordance with the Scottish Government 'Guidance for applicants on using the design envelope for applications under Section 36 of the Electricity Act 1989' (Scottish Government, 2022²²). Further details on how this is applied are provided in Volume 1, Chapter 3: Proposed Development Description (Offshore).
- 3.1.1.3 Since the submission of the Offshore Scoping Report (Volume 7, Appendix 2) and issue of the subsequent Scoping Opinion (Volume 7, Appendix 3), the Applicant has undertaken additional stakeholder consultations, public consultation events, baseline characterisation surveys which has all then been gathered to inform and iteratively develop a detailed DE for the EIA.
- 3.1.1.4 The information presented within Section 2 of this report confirms that the DE assessed within the EIAR falls within the high level DE included within the Offshore Scoping Report (Volume 7, Appendix 2) and that the design itself does not change the outcome in terms of those potential receptors and impacts scoped in and scoped out. The infrastructure remains within the project boundary identified within the Offshore Scoping Report.
- 3.1.1.5 In addition, the technology being proposed also remains within the original DE contained within the Offshore Scoping Report (Volume 7, Appendix 2), with any changes being associated with the reduction of elements, such as a reduction in development area, reduction in infrastructure (e.g., reduced offshore cabling requirements) or removal of certain foundation types with a potential for more significant environmental impact.
- 3.1.1.6 The introduction of the option for phased development, through Caledonia North and Caledonia South does not introduce any new potential significant effects, with potential cumulative impacts already being included within the EIAR.



3.1.1.7 In conclusion, this Offshore Scoping Validation Report concludes that the Scoping Opinion (Volume 7, Appendix 3) issued by MD-LOT in January 2023 remains valid for the Proposed Development (Offshore) and no additional requirements for the EIAR have been identified and are considered necessary.

4 References

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¹⁴ Scottish Government (2017) 'The Future of Energy in Scotland: Scottish Energy Strategy'. Available at: <u>https://www.gov.scot/publications/scottish-energy-strategy-future-energy-</u> <u>scotland-9781788515276</u> (Accessed 16/10/2024)

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