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Volume 4 Caledonia South

Chapter 13 Other Human Activities

Caledonia Offshore Wind Farm Ltd

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Volume 4 Chapter 13 Other Human Activities

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Acronyms and Abbreviations

BPEO	Best Practical Environmental Option
BT	British Telecommunications
CaP	Cable Plan
CCS	Carbon Capture Storage
CIA	Cumulative Impact Assessment
CMS	Construction Methods Statement
CTG	China Three Gorges
DE	Design Envelope
DP	Decommissioning Programme
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMC	Electromagnetic Compatibility
EMP	Environmental Management Plan
ERCoP	Emergency Response Cooperation Plan
ESCA	European Subsea Cable Association
HDD	Horizontal Directional Drilling
HVDC	High Voltage Direct Current
ICPC	International Cable Protection Committee
INTOG	Innovation and Targeted Oil & Gas
LAT	Lowest Astronomical Tide
LMP	Lighting and Marking Plan
MCA	Maritime and Coastguard Agency

MD-LOT	Marine Directorate - Licensing Operations Team
MHWS	Mean High Water Springs
MPCP	Marine Pollution Contingency Plan
nm	Nautical Mile
NMP	National Marine Plan
NSP	Navigational Safety Plan
NtM	Notice to Mariners
O&M	Operation and Maintenance
OECC	Offshore Export Cable Corridor
OHA	Other Human Activities
OREI	Offshore Renewable Energy Installations
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
SCDS	Supply Chain Development Statement
SSEN	Scottish and Southern Electricity Network
UNCLOS	United Nations Convention on the Law of the Sea
UXO	Unexploded Ordnance
WTG	Wind Turbine Generator

Executive Summary

This chapter of Volume 4 of the Environmental Impact Assessment Report (EIAR) assesses the potential environmental effects from Caledonia South on Other Human Activities (OHA) receptors. These impacts include direct impacts upon a number of different developments and projects in the area, including the relevant cumulative and inter-related effects and inter-relationships with other disciplines.

The assessment considers the impacts to OHA receptors and any resulting environmental effects. Caledonia South is within the vicinity of multiple offshore wind farms, wave and tidal energy developments, utilities developments, oil and gas infrastructure and a number of other marine infrastructure sites.

The assessment has taken account of embedded mitigation measures including:

- The development of a number of plans, including a Cable Plan, a Construction Method Statement, an Environmental Management Plan, a Marine Pollution contingency Plan, a Lighting and Marking Plan, a Navigational Safety Plan and an Emergency Response Cooperation Plan;
- Advance warning and accurate location details of construction, maintenance and decommissioning operations, including safety zones and advisory passing distances will be given via Notice to Mariners and Kingfisher Bulletins;
- Any objects accidentally deposited on the seabed during works associated with Caledonia South will be reported and recovered where possible;
- Marine coordination and communication will be implemented to manage project vessel movements; and
- Crossing and proximity agreements with known existing pipeline and cables operators will be sought.

Consultation has been advanced with relevant stakeholders to detail additional appropriate mitigations to safeguard other developments and projects.

No significant effects were identified for OHA receptors. This is both in terms of Caledonia South and cumulatively with other developments. As a result, no additional mitigation has been proposed above and beyond the embedded mitigation outlined in this chapter. Overall, no significant residual effects to any of the identified receptors are identified.

13 Other Human Activities

13.1 Introduction

- 13.1.1.1 This chapter of the Environmental Impact Assessment Report (EIAR) identifies the potential effects on Other Human Activities (OHA) associated with the construction, operation and maintenance (O&M) and decommissioning of the Caledonia Offshore Wind Farm (OWF), specifically Caledonia South. This includes the Caledonia South Site (i.e., array area) as well as the Caledonia South Offshore Export Cable Corridor (OECC) seaward of Mean High Water Spring (MHWS).
- 13.1.1.2 This chapter is supported by the following Technical Appendices:
- Volume 7B, Appendix 13-1: Major Accidents and Disasters.
- 13.1.1.3 The following supporting studies relate to and should be read in conjunction with this chapter:
- Volume 4, Chapter 8: Commercial Fisheries;
 - Volume 4, Chapter 9: Shipping and Navigation;
 - Volume 4, Chapter 11: Military and Civil Aviation; and
 - Volume 6, Chapter 2: Socio-economics, Tourism and Recreation
- 13.1.1.4 The above chapter assessments are interrelated to OHA, as they cover overlapping topics such as the use of vessels, and subsea infrastructure with similar, and/or identical stakeholders, therefore consultation responses and assessment approaches in some cases overlap.

13.2 Legislation, Policy and Guidance

- 13.2.1.1 Volume 1, Chapter 2: Legislation and Policy, of this EIAR sets out the policy and legislation associated with Caledonia South.
- 13.2.1.2 Legislation, Policy and Guidance that relate to the OHA assessment are identified and described in Table 13-1.

Table 13-1: Legislation Policy and Guidance.

Relevant Legislation, Policy and Guidance	Description
Legislation	
United Nations Convention on the Law of the Sea (UNCLOS) – Article 79: Submarine cables and pipelines on the continental shelf (United Nations, 1982 ¹)	This article protects submarine cables and requires Caledonia South to have due regard for any existing cables or pipelines in position and not prejudice the possibilities of repair.
The Submarine Telegraph Act (1885) (UK Parliament, 1885 ²)	This act protects submarine telegraph cables.
Energy Act (2004) (UK Parliament, 2004 ³) (Scotland Act (2016)) (Scottish Parliament, 2016 ⁴)	This act sets out the basic requirements for applying a safety zone to be placed around or adjacent to an Offshore Renewable Energy Installation (OREI).
Policy	
The Scottish National Marine Plan (NMP), (Scottish Government, 2015 ⁵)	<p>The NMP includes a number of General Planning Principles. According to Planning Policy Principle GEN 1, there is a presumption in favour of sustainable development and use of the marine environment when consistent with the policies and objectives of the plan. GEN 4 also emphasises that development proposals which enable multiple uses of marine space are encouraged.</p> <p>The NMP also provides sector-specific marine planning policies which variously support the economic growth of sectors, and aim to manage conflicts between marine users and manage environmental impacts. Sectors included in the NMP and relevant to this assessment include:</p> <ul style="list-style-type: none"> ▪ Oil and Gas (Chapter 9 of the NMP); ▪ Carbon Capture and Storage (Chapter 10 of the NMP); ▪ Offshore Wind and Marine Renewable Technology (Chapter 11 of the NMP); ▪ Shipping, Ports, Harbours and Ferries (including dredging and disposal) (Chapter 13 of the NMP); ▪ Submarine Cables (Chapter 14 of the NMP); and ▪ Defence (Chapter 15 of the NMP).
Guidance	
Assessment of Impact of Offshore Wind Energy Structures on the Marine Environment (Marine Institute, 2000 ⁶)	This study assesses the impact of offshore wind energy structures (wind farms) on the marine environment.

European Subsea Cable Association (ESCA) Guideline No.06: The Proximity of Offshore Renewable Energy Installations and Subsea Cable Infrastructures (ESCA, 2023 ⁷)	This document (referred to as the "Guidelines") provides guidance on the considerations that should be given by all Stakeholders in the development of projects requiring proximity agreements between OWF projects and subsea cable projects. The Guidelines address installation and maintenance constraints related to OWF structures, associated cables and other subsea cables, where such structures and subsea cables will occupy proximate areas of seabed.
International Cable Protection Committee (ICPC) Recommendations (ICPC, 2019 ⁸)	A collection of recommendations for cable owners and other seabed users in ensuring the highest goals of reliability and safety in the submarine cable environment.
The Crown Estate Export transmission cables for offshore renewable installations – Principles of cable routeing and spacing, (The Crown Estate, 2012 ⁹)	This guidance provides cable owners with a technical, environmental and commercial overview of the effects of routeing transmission cables in relative close proximity.

13.3 Stakeholder Engagement

13.3.1 Overview

- 13.3.1.1 The Offshore Scoping Report (Volume 7, Appendix 2) was submitted to Marine Directorate - Licensing Operations Team (MD-LOT)ⁱ in September 2022, who then circulated the report to relevant consultees. A Scoping Opinion (Volume 7, Appendix 3) was received from MD-LOT on 13 January 2023. Relevant comments from the Scoping Opinion specific to OHA are provided in Table 13-2.
- 13.3.1.2 Further consultation has been undertaken throughout the pre-application stage. Table 13-3 summarises the consultation activities carried out relevant to OHA.

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).

Table 13-2: Scoping Opinion Response.

Consultee	Comment	Response
MD-LOT	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 Ministers emphasise the importance of engaging with other marine users, including developers of ScotWind projects, throughout all phases of the Proposed Development.	Consultation with other marine users, including developers of ScotWind projects, has been ongoing throughout the Environmental Impact Assessment (EIA) process and a summary of consultation has been presented in Table 13-3.
MD-LOT	In Table 19.3 of the Scoping Report the Developer summarises the potential impacts to other human activities during the different phases of the Proposed Development. 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 impacts proposed to be scoped in or out of the EIAR at scoping have been carried through to this OHA assessment. This chapter also fully addresses the representations from relevant stakeholders in Section 13.3 and Table 13-3.
MD-LOT	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 Council representation that where this is confirmed to be the case, the relevant assessments should be updated.	<p>Supply chain commitments have been made by Caledonia Offshore Wind Farm Limited (the Applicant) through the Supply Chain Development Statement (SCDS) (Caledonia Offshore Wind Farm Limited, 2023¹⁰).</p> <p>The SCDSs outline critical early-stage project information that can then be used to coordinate, support, and grow the supply chain in Scotland.</p> <p>SCDSs are designed to provide a structure for project specific supply chain information to be communicated with government and industry, through the initial stages of project development, to deployment and into operations.</p> <p>The next set of updates are due in 2026.</p>

Consultee	Comment	Response
MD-LOT	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 applicant has not confirmed the O&M strategy as of yet, this will be done separately to this EIA. The Highland Council's development plan and their representation regarding land use will be considered at that time.
MD-LOT	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.	Consultation with SSEN has been ongoing throughout the EIA process. A summary of consultation has been provided in Table 13-3.
British Telecoms (BT)	<p>Having checked this scoping consultation of the proposed offshore windfarm, with respect to EMC and related problems to BT point-to-point microwave radio links.</p> <p>The conclusion is that the location shown should not cause interference to BT's current and presently planned radio network.</p> <p>The image below shows there are no issues, however once a comprehensive scoping opinion has been adopted then please provide accurate grid-ref and structure heights.</p>	The EIA is still using a Design Envelope (DE) approach as outlined within the Offshore Scoping Report (Volume 7, Appendix 2). Exact structure heights and locations will be provided as part of the discharge of consents.

Consultee	Comment	Response
Scottish & Southern Electricity Networks (SEN)	<p>We note the inclusion of the Scottish Hydro-Electric Transmissions (SHET) Caithness – Moray HVDC link within the Proposed Development site. As noted, the Caithness – Moray HVDC link is currently operational and as such we would require that SHET is engaged to ensure that sufficient space for the safe operation and repair of the Caithness – Moray HVDC link is maintained.</p> <p>As found within the ICPC recommendations, referenced in section 19.8.2.1 of the scoping document, we would also like to encourage future engagement with SHET such that both parties can exist within a shared marine space and where necessary can develop crossing and proximity agreements within the proposed development site and cable export corridor.</p> <p>We agree with the scoping questions outlined in table 19.4 regarding Other Human Activities and would also like to suggest consideration is given to the cable landfall selection so as not to unnecessarily exclude future potential cable landfalls within the proposed cable export corridor.</p>	<p>Consultation with SEN has been ongoing throughout the EIA process. A summary of up to date consultation has been provided in Table 13-3.</p>
The Highland Council	<p>Whilst it is noted that primarily the inshore and coastal elements of the development (Export cable, O&M base) are outside of the Highland Council's boundaries. It is possible that other aspects associated with the supply chain and construction may well directly utilise areas within the Highland Council area (Port of Nigg, Port of Cromarty Firth etc). Where this is subsequently confirmed to be the case relevant assessments should be updated to reflect this e.g. Navigational Risk Assessments, Impact Assessment included within Chapter/Topic 19 'Other Human Activity' etc.</p>	<p>The Applicant has not yet confirmed ports to be utilised for construction, storage and marshalling. This will be confirmed within the Construction Management Plan, and associated vessel movements within the Vessel Management Plan.</p> <p>Worst case assumptions for vessel movements during construction and operation have been used for the Navigational Risk Assessment (NRA) (Volume 7B, Appendix 9-1: NRA Technical Report).</p>

Table 13-3: Stakeholder Engagement Activities.

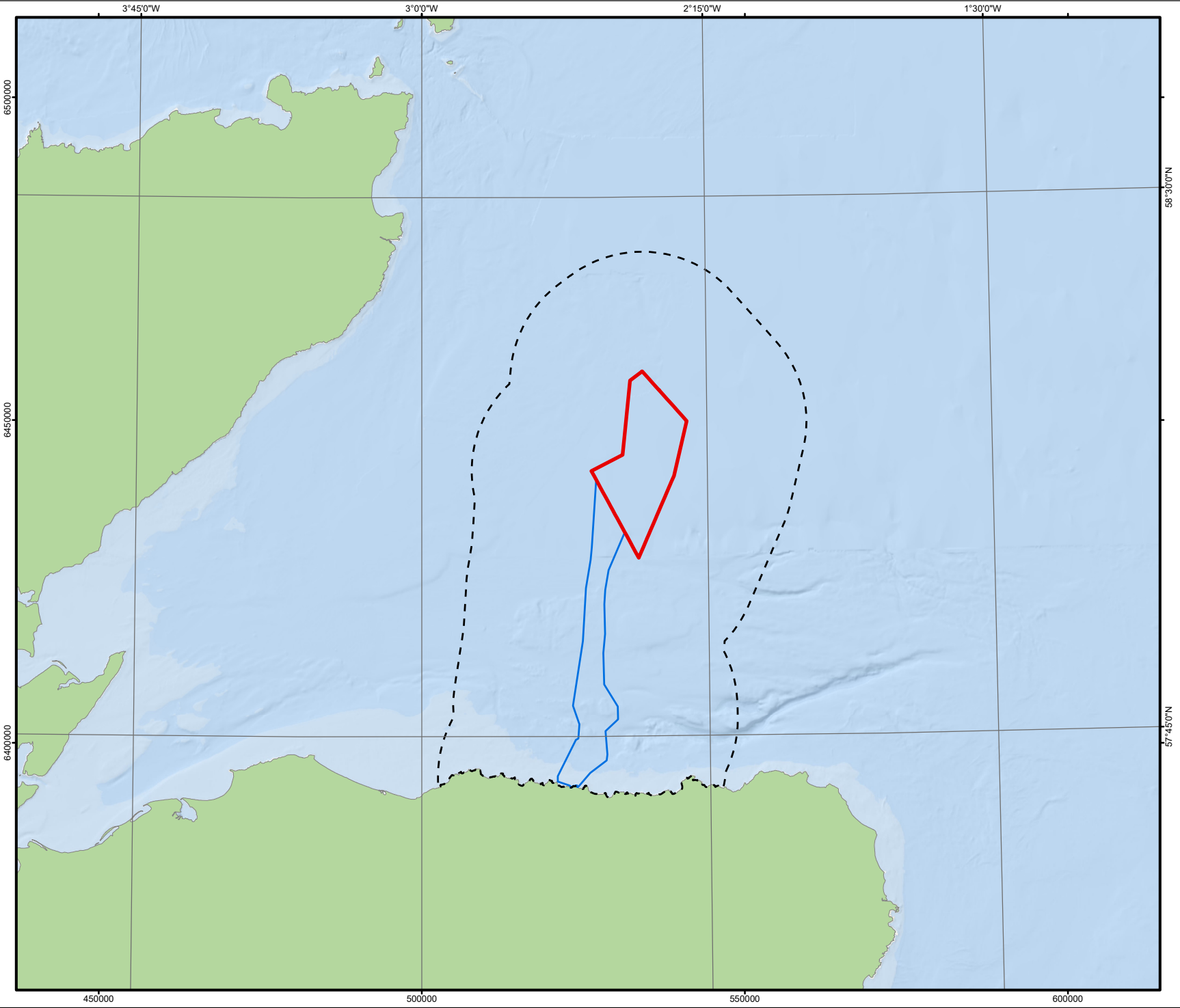
Date	Consultee and Type of Consultation	Summary
29 November 2023	SSE, Caithness – Moray HVDC Link; Meeting	A meeting to provide an opportunity for relevant parties to be introduced and discuss the next steps for consultation regarding the potential interactions between the Caithness – Moray HVDC Link and the Proposed Development (Offshore).
November 2023	Various stakeholders; Email	<p>Introductory email about the Proposed Development (Offshore) sent to a range of stakeholders identified as potential receptors for the OHA assessment. This provided links to the Proposed Development’s website, the Offshore Scoping Report and Scoping Opinion.</p> <p>Those contacted included: Moray Offshore Wind Farm (West) Ltd, Moray Offshore Wind Farm (East) Ltd, Beatrice Offshore Windfarm Ltd, Scottish and Southern Energy (SSE), Stromar Wind (Orsted, BlueFloat Energy and Renantis; Stromar OWF), Broadshore Wind (BlueFloat Energy and Renantis; Broadshore Hub OWFs), Marram Wind (Scottish Power and Shell; Marram OWF), Buchan Offshore Wind (BW Ideol, Elicio and BayWa r.e.; Buchan OWF), Thistle Wind Partners (Ayre OWF), Bluefloat and Renantis (Sinclair and Scaraben OWFs), Simply Blue Energy (Scotland; Salamander OWF), BP (Flora OWF), Acorn (Carbon Capture and Storage Project), Sheefa Limited (SHEFA-2 subsea cable), SSEN Transmission (Caithness-Moray HVDC Link subsea cable), Ithaca Energy (Jacky Wellhead and Captain Fields), Repsol Sinopec UK (Beatrice Oilfield), Oil and Gas UK, Reabold North Sea Ltd, Buckie Harbour Authority, Banff, Macduff and Portsoy Harbour Authority, Scottish and Southern Electricity Networks (SSEN), The Highland Council, Aberdeenshire Council, Moray Council, Surfers Against Sewage, Scottish Environment Protection Agency and Scottish Wildlife Trust (snorkel trails).</p>
11 December 2023	SHEFA Ltd, SHEFA-2 Cable; Meeting	A meeting to provide an opportunity for relevant parties to be introduced and discuss the next steps for consultation regarding the potential interactions between the SHEFA-2 Cable and the Caledonia Offshore Wind Farm.
April/May 2024	Various stakeholders; Email	Follow-up emails sent to a range of stakeholders (see list from November 2023 consultation) to provide updates on progress to date and a link to the online virtual engagement room (website).

Date	Consultee and Type of Consultation	Summary
07 May 2024	Various stakeholders; Meeting	A meeting to gather input from stakeholders on the proposed Caledonia Offshore Wind Farm to help inform the NRA. Stakeholders in attendance included the Chamber of Shipping, Green Marine, Maritime and Coastguard Agency (MCA), Nigg Energy Park, Northern Lighthouse Board (NLB), Scottish Fishermen's Federation (SFF), Scottish White Fish Producers Association (SWFPA), Serco Northlink Ferries, Smyril Line.
13 May 2024	The Royal Yachting Association (RYA); Meeting	This meeting was held with the RYA and covered the same points as the meeting above.
June 2024	SHEFA Ltd, SHEFA-2 Cable; Emails	Ongoing engagement to facilitate data sharing between SHEFA Ltd and the Applicant.
01 July 2024	SSE, Caithness – Moray HVDC Link; Meeting	A meeting to provide updates on Caledonia South.
15 August 2024	SSE, Caithness – Moray HVDC Link; Meeting	A meeting to agree next steps for data sharing and establishing crossing agreements.

13.4 Baseline Characterisation

13.4.1 Study Area

- 13.4.1.1 The OHA study area is defined by the footprint of Caledonia South, including the Caledonia South Site and the Caledonia South OECC up to MHWS, plus a 10 nautical mile (nm) (18.5km) buffer. This aligns with the buffer used in the assessment of Shipping and Navigation (see Volume 4, Chapter 9: Shipping and Navigation), in order to account for the movement of other mobile marine activities. The 10nm buffer around the Caledonia South OECC is wider than the 2nm buffer used within Shipping and Navigation in order to capture other non-mobile marine activities. The study area for the OHA assessment is presented in Figure 13–1.



Caledonia South Site

Caledonia South Offshore Export Cable Corridor

10NM Study Area

Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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UKCAL1_GO_WNF_IJU_MAP_00117

CONTRACTOR REV
01

GEODETIC PARAMETERS
WGS 84 / UTM zone 30N (EPSG: 32630)

DRAWING TITLE
Figure 13-1: The Other Human Activities Study Area

STATUS
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SCALE
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01 of 01

REV
N/A

13.4.2 Data Sources

Desk Study

13.4.2.1 The data sources that have been used to inform this OHA chapter of the EIAR are presented within Table 13-4.

Table 13-4: Summary of key publicly available datasets for Other Human Activities.

Title	Author	Year
The Marine Scotland NMPi Maps	(Scottish Government, 2024a ¹¹)	2024
Crown Estate Scotland Spatial Hub (Aquaculture)	(Crown Estate Scotland, 2024 ¹²)	2024
Crown Estate Scotland Spatial Hub (Cables and Pipelines)		
Crown Estate Scotland Spatial Hub (Offshore Wind)		
Crown Estate Scotland Spatial Hub (Wave & Tidal)		
Crown Estate Scotland Spatial Hub (Minerals)		
Scotland's National Marine Plan	(Scottish Government, 2015 ⁵)	2015
Sectoral Marine Plan: Regional Locational Guidance	(Scottish Government, 2020 ¹³)	2020
Marine Scotland Information: Marine Licence Applications	(Scottish Government, 2024b ¹⁴)	2024

Site-Specific Surveys

13.4.2.2 There were no site-specific surveys completed in order to inform this assessment.

13.4.3 Baseline Description

13.4.3.1 A review of existing information was undertaken to provide a description of the baseline environment for OHA. The key OHA receptors found in the vicinity of Caledonia South include:

- OWFs;
- Other energy developments (wave and tidal);
- Utilities developments (including telecommunications and power cables);
- Oil and gas infrastructure;
- Marine dredging and disposal sites; and
- Other marine infrastructure (including aquaculture, nuclear energy and Innovation and Target Oil and Gas (INTOG) developments).

Caledonia South Site

Offshore Wind Farm (OWF) Developments

13.4.3.2 As presented in Figure 13–2 and Table 13-5, there are three offshore wind renewable energy developments located within the OHA study area, namely the Moray East, Beatrice and Moray West OWFs.

13.4.3.3 Moray East OWF was developed by Moray Offshore Windfarm East Ltd, a joint venture company owned by Ocean Winds (56.6%), Diamond Green Limited (33.4%) and China Three Gorges (CTG) (10%). The Moray East OWF achieved first power in 2021, after gaining consent to build in 2017. It was fully operational as of 2022, and has a capacity of 955 MW consisting of 100 Vestas V164 wind turbine generators (WTGs) as well as three offshore substation platforms (OSPs) (Moray Offshore Wind Farm (East) Ltd, 2024¹⁵). It is operated and maintained from its O&M base and Marine Coordination Centre in Fraserburgh, Aberdeenshire. Of the three OWFs in the study area, the Moray East OWF is the closest, with the south eastern area of the Moray East array area located adjacent to the north west corner of the Caledonia South Site (Table 13-5).

13.4.3.4 Beatrice OWF was developed by Beatrice Offshore Windfarm Ltd, a joint venture between SSE Renewables (40%), Red Rock Power Limited (25%), TRIG (17.5%) and Equitix (17.5%). Beatrice OWF became operational in June 2017, following eight years of planning and development and three years of construction (Beatrice Offshore Wind Farm Ltd, 2024¹⁶). It is operated and maintained from its project base at Wick Harbour on the northeast coast of Scotland. Beatrice OWF has an installed capacity of 588 MW consisting of 84 Siemens Gamesa WTGs. The Caledonia South Site is 18.6km from the Beatrice OWF (Table 13-5).

13.4.3.5 The Moray West OWF is being developed by Ocean Winds as the majority shareholder. The Moray West OWF project secured consent to build in 2019 for up to 85 WTGs and two OSs, with a generating capacity of up to 850 MW.

At the time of writing, it is currently under construction, with its first OSP and WTG monopile foundations having been installed in late 2023 (Moray Offshore Wind Farm (West) Ltd, 2024¹⁷). It will be maintained and operated from its O&M base and Marine Coordination Centre in Buckie, Moray. The Caledonia South Site is 14.2km from the Moray West OWF (Table 13-5).

13.4.3.6

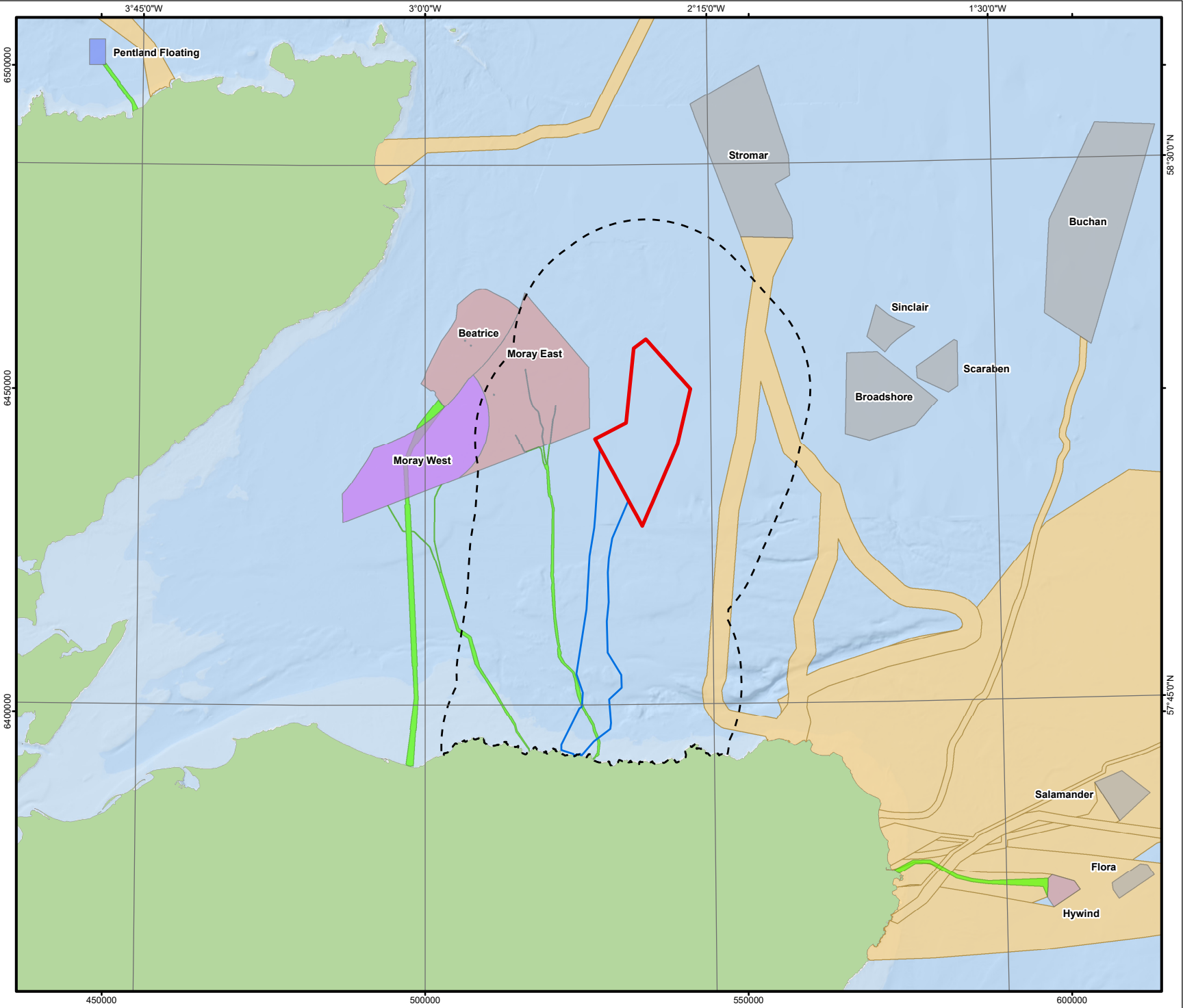
There are no ScotWind lease areas proposed for development in the wider region outwith the OHA study area (Outer Moray Firth and northern North Sea). These OWFs are presented in Table 13-6, and can be seen in relation to the Caledonia South Site in Figure 13-2.

Table 13-5: Relevant information on the OWFs located within the OHA study area.

Offshore Wind Farm	Operator	Distance from Caledonia South Site (km)	Distance from Caledonia South OECC (km)
Moray East	Diamond Green Limited, CTG and Ocean Winds	1.9	3.4
Beatrice	Scottish & Southern Energy (SSE), Red Rock Power Limited, TRIG and Equitix	18.6	22
Moray West	Ocean Winds	16.5	17.4

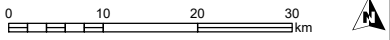
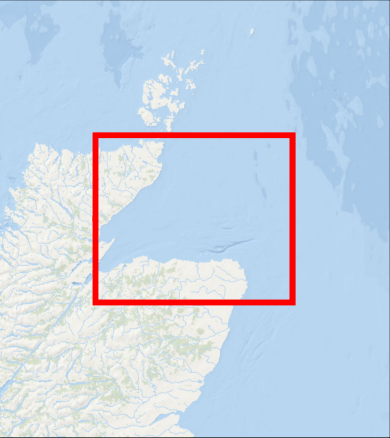
Table 13-6: Relevant information on the other ScotWind NE plan region OWFs.

ScotWind Plan Option	Offshore Wind Farm	Operator	Distance from Caledonia South Site (km)	Distance from Caledonia South OECC (km)
NE3	Stromar	Orsted, BlueFloat Energy and Renantis	7.7	7.7
NE6	Broadshore	BlueFloat Energy and Renantis	24.0	35.1
NE8	Buchan	BW Ideol, Elicio and BayWa r.e.	56.0	70.6



- Caledonia South Site
- Caledonia South Offshore Export Cable Corridor
- 10NM Study Area
- Operational Wind Farm
- Wind Farm Under Construction
- Planned Wind Farm
- Wind Farm in Concept/Early Planning
- Export Cable Corridor
- Proposed Export Cable Corridor

Data Sources: Offshore Wind Farms and Export Cable Corridors Data from © Crown Estate Scotland (CES) (2024) and Relevant Scoping Reports
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REV	DATE	DOC STATUS	ORIGIN	REVIEW	APP

CONTRACTOR DRAWING NO UKCAL1_GO_WNF_IJU_MAP_00118	CONTRACTOR REV 01
GEOGRAPHIC PARAMETERS WGS 84 / UTM zone 30N (EPSG: 32630)	
DRAWING TITLE	

Figure 13-2: Offshore Wind Energy Developments in Relation to Caledonia South

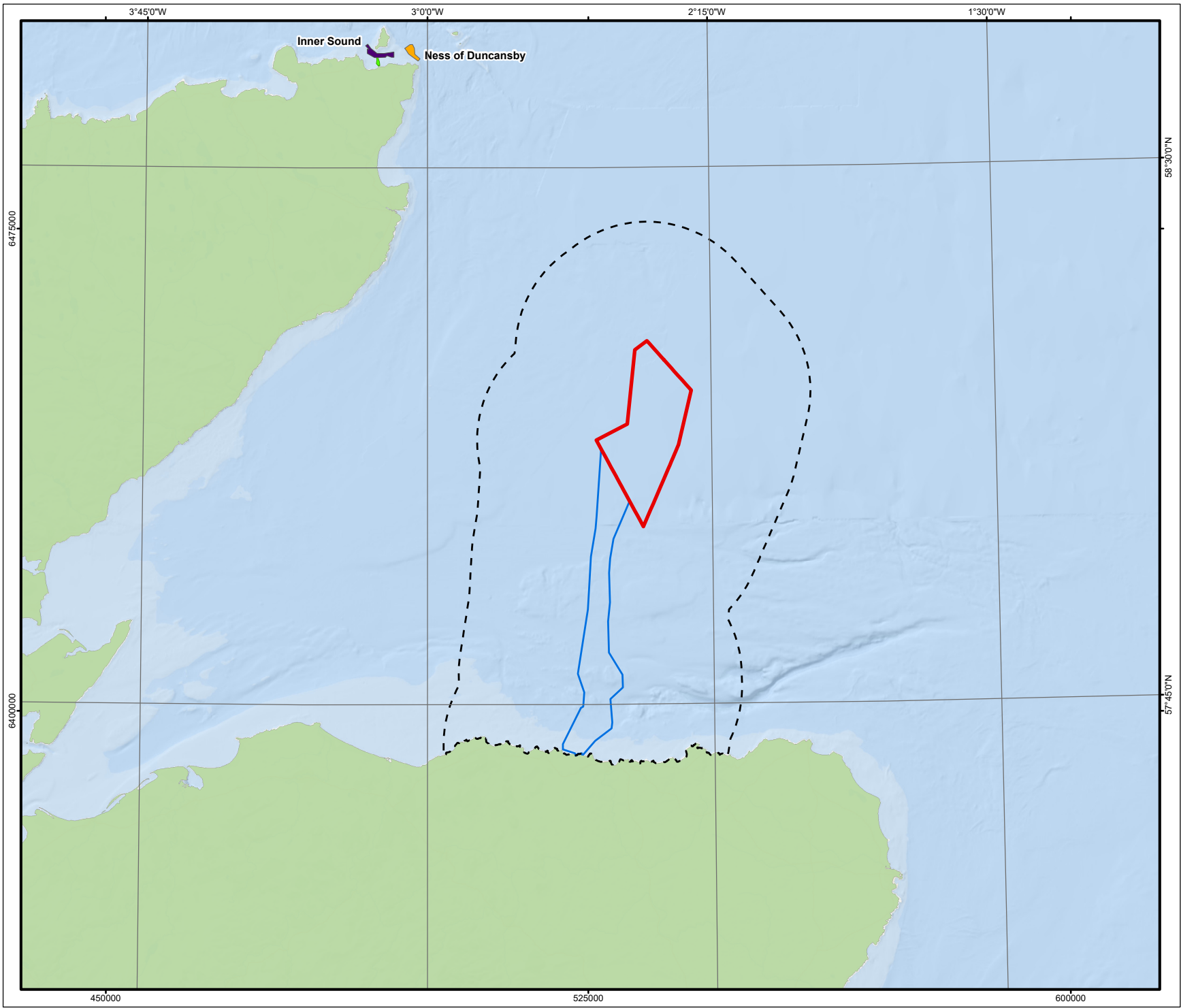
STATUS Approved	SCALE 1:800,000
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Offshore Wind Innovation and Targeted Oil and Gas (INTOG)

- 13.4.3.7 There are no INTOG lease areas within the OHA study area, although there are some in the wider region of the outer Moray Firth and northern North Sea (Sinclair, Scaraben, Salamander). The Caledonia South Site is situated in the INTOG East Coast Exclusion, and as such there are no future plans for INTOG developments within the OHA study area (Scottish Government, 2021¹⁸).

Other Energy Developments (Wave and Tidal)

- 13.4.3.8 The Crown Estate and Crown Estate Scotland are the regulatory bodies responsible for leasing areas of the seabed that are suitable for the installation of wave and tidal arrays, and for managing the associated seabed rights.
- 13.4.3.9 There are currently no planned wave or tidal energy developments identified within the OHA study area. The nearest tidal installation is the Ness of Duncansby tidal array, which is located 54.5km north of the Caledonia South Site (Figure 13-3). The nearest wave installation is the Deerness wave energy converter, which is located 68.5km north of the Caledonia South Site.
- 13.4.3.10 Therefore, given the distance from the Caledonia South Site, other energy developments are not considered in this assessment.



Caledonia South Site

Caledonia South Offshore Export Cable Corridor

10NM Study Area

Operational Offshore Tidal Development

Pre-planned Offshore Tidal Development

Export Cable Corridor

Data Sources: Offshore Tidal Developments and Export Cable Corridors Data from © Crown Estate Scotland (CES) (2024) and Relevant Scoping Reports

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COORDINATE PARAMETERS

WGS 84 / UTM zone 30N (EPSG: 32630)

DRAWING TITLE

Figure 13-3: Other Renewable Energy Developments (Wave and Tidal) in Relation to Caledonia South

STATUS

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SCALE

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DRAWING NUMBER

N/A

SHEET NO

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N/A

Telecommunications and Subsea Cables

Telecommunications

- 13.4.3.11 The SHEFA-2 fibre-optic telecommunications cable, operated by Shefa Ltd (a subsidiary of Faroese Telecom), links the Faroe Islands to mainland Scotland via the Northern Isles. It runs south from the Orkney Islands to the Scottish mainland at Inverboyndie and is buried under the seabed surface as it transits the Moray Firth (Shefa Ltd, 2024¹⁹). The cable intersects the OHA study area and the Caledonia South Site (Figure 13–4), and is therefore considered in this assessment. Shefa Ltd has specific seabed rights granted as part of its seabed lease with Crown Estate Scotland. In particular, permission must be granted by the cable owner for any works planned to be undertaken within 250m either side of the cable. Where works are within 1km of the cable, the operator must be notified prior to any works being undertaken.

Power Cables

- 13.4.3.12 Scottish and Southern Electricity Networks (SSEN), which is a subsidiary of SSE, owns the Caithness – Moray High Voltage Direct Current (HVDC) Link, a 113km subsea HVDC cable that runs between Noss Head on the east Caithness coast and Portgordon on the south coast of the Moray Firth (Figure 13–4). The cable intersects in the OHA study area but not the Caledonia South Site directly and runs along the shared boundary with the Moray East OWF, and has therefore been considered in this assessment. This cable became operational in 2019, providing transmission reinforcement along the East Coast of Scotland, with two onshore convertor stations at Spittal (Caithness) and Blackhillock (Moray) (SSEN, 2024a²⁰).
- 13.4.3.13 SSEN also own the Shetland HVDC Link, a 260 km subsea HVDC cable that runs between Shetland and Caithness (SSEN, 2024b²¹). There is no direct overlap between the Shetland HVDC Link and the Caledonia South Site; however, it does intersect the north of the OHA study area. This cable is currently under construction, and is expected to become operational in 2024 with an expected lifetime of 40 years (SSEN, 2024c²²). The Shetland HVDC Link is located approximately 27.35km away from Caledonia South and has been considered in this assessment.
- 13.4.3.14 SSEN is currently developing the Spittal – Peterhead HVDC Link project, which is due to be constructed between 2027-2030 (SSEN, 2024d²³). The cable will make landfall at Sinclair’s Bay and south of Rattray Head, with a cable corridor approximately 500m wide and 165km long (SSEN, 2024d²³). The project is currently in early planning, with further investigation underway to determine a suitable subsea cable corridor. At the time of writing, it is anticipated that a marine licence application will be submitted in 2025 (SSEN, 2024d²³).

Beatrice Demonstrator Cables

- 13.4.3.15 The two Beatrice Demonstrator WTGs are connected in series via a 0.9km cable (PL2331), with power supplied to the Beatrice A platform via a 1.9km

long submarine cable (PL2331). There is no overlap between the Beatrice demonstrator cables and the Caledonia South Site; however, the cables are located within the OHA study area and has been considered within this assessment. These cables are buried to a depth of 1m below the seabed, except where the cable crosses the main oil export pipeline (PL16).

Oil and Gas Infrastructure

- 13.4.3.16 There is no existing Oil and Gas infrastructure within the OHA study area. The closest area supporting oil exploration and production activity is 26.1km from the Caledonia South Site; however, both the Jacky and Beatrice oil fields are no longer producing and are scheduled for decommissioning (Figure 13–5). It is understood that the indicative decommissioning timeline of the Beatrice Oil Field is as follows (Repsol Sinopec, 2018²⁴):
- Well plugging and abandonment on Beatrice Bravo and Charlie is expected to occur prior to commencing removal of the Beatrice Field infrastructure in 2024;
 - Well plug and abandonment on Beatrice Alpha from 2022-2027; and
 - Platform and subsea facility removal operations for the Beatrice field facilities from 2025 to 2030.
- 13.4.3.17 Oil and gas extracted from the Beatrice Oil Field was historically exported to shore via an installed pipeline west of the Caledonia South Site and runs to shore at Nigg in the Cromarty Firth. There is also a mid-line structure between Beatrice Alpha and the Jacky Platform which was installed in 2008. In 2018, Repsol Sinopec Resources UK published a Decommissioning Programme (DP) which aims to have subsea structures (including pipelines) removed between 2028-2030 (Repsol Sinopec, 2018)²⁴.
- 13.4.3.18 In addition to the Jacky and Beatrice oil fields, the Caledonia South Site is within close proximity to the following licensed Oil and Gas blocks:
- 12/27c: 4.4km southwest of the Caledonia South Site; and
 - 18/2: 8.8km southwest of the Caledonia South Site.
- 13.4.3.19 In May 2024, the North Sea Transition Authority (NSTA) awarded a total of 82 hydrocarbon exploration licences to 50 companies as part of the 33rd oil and gas licensing round. The nearest 33rd round licenced oil and gas block is 13/23a, which is 44.1km to the east of the Caledonia South Site.
- 13.4.3.20 As there is no active oil and gas infrastructure within the OHA study area, oil and gas infrastructure is not considered within this assessment.

Marine Dredging and Disposal

- 13.4.3.21 Dredging and disposal activity within the Moray Firth is sporadic and associated with port and harbour maintenance and coastal marine disposal sites. The closest open marine disposal sites are located at Macduff which is 33.5km to the south of the Caledonia South Site, and Buckie which is 44.2km to the south of the Caledonia South Site (Figure 13–6). Both of these sites are

located within the OHA study area. No marine aggregate extraction is licensed within the OHA study area.

Other Marine Infrastructure

Aquaculture

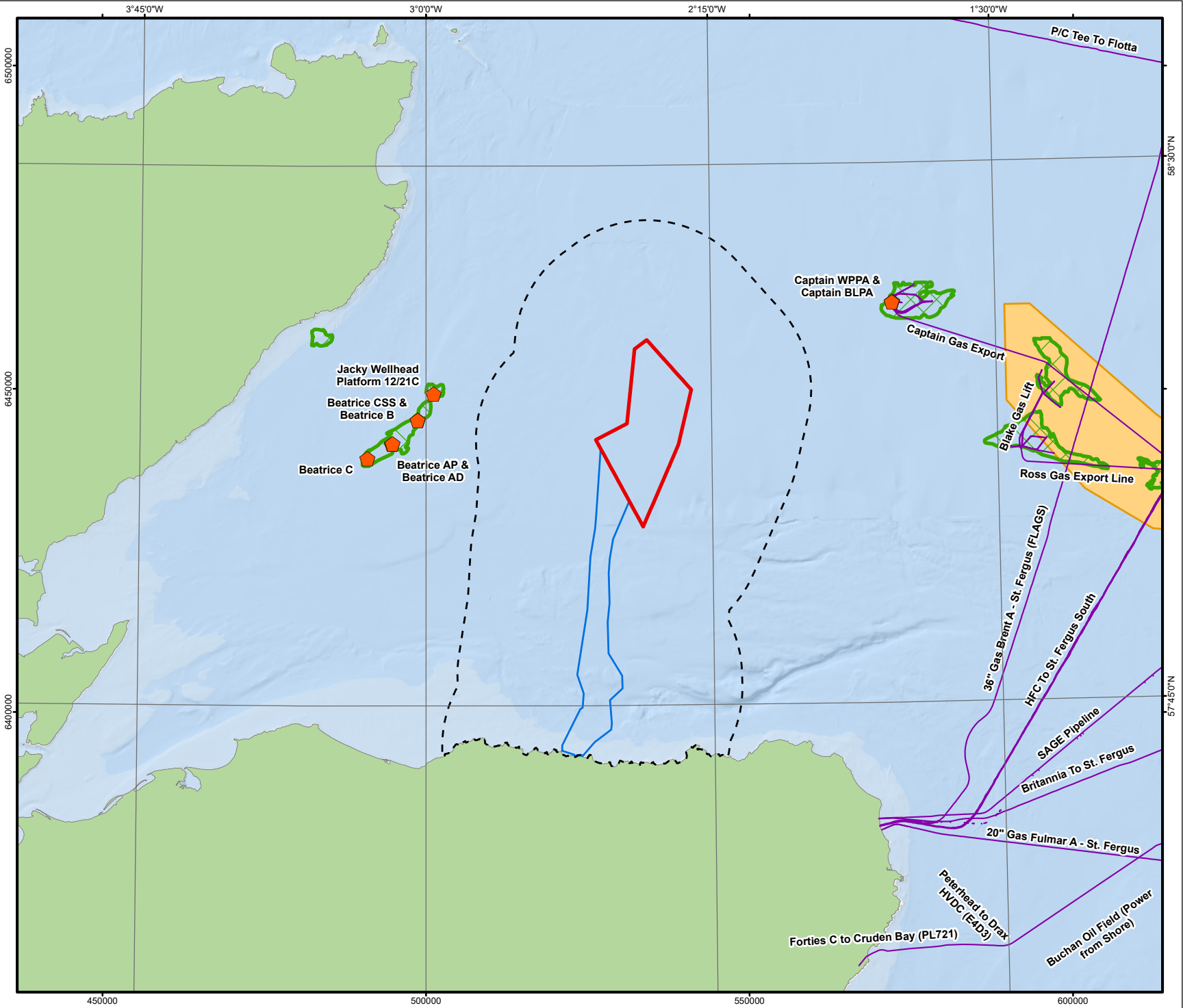
- 13.4.3.22 There are no existing lease agreements for aquaculture developments present within the OHA study area. The nearest development is the North Bay West Shellfish Aquaculture Site, approximately 78.6km from the Caledonia South Site. There are restrictions on plans to develop any new marine fish farm developments on the north and west coasts of Scotland and only existing developments can be extended (Scottish Government, 2014²⁵). Therefore, aquaculture is not considered within this assessment.

Nuclear energy

- 13.4.3.23 There are no existing nuclear developments or plans for nuclear development in the Moray Firth. There are no future plans for any nuclear developments across Scotland (Scottish Government, 2023²⁶). Therefore, nuclear energy is not considered within this assessment.

Marine and Coastal Recreational Activities and Water Sports

- 13.4.3.24 Marine and coastal recreational activities and water sports have not been considered within this chapter, and are instead covered within Volume 4, Chapter 9: Shipping and Navigation and Volume 6, Chapter 2: Socio-economics, Tourism and Recreation.



- ▭ Caledonia South Site
- ▭ Caledonia South Offshore Export Cable Corridor
- - - 10NM Study Area
- ▭ Carbon Capture Storage Lease Area
- ▭ Hydrocarbon Fields
- ⬠ Oil and Gas Platforms
- Oil and Gas Pipelines

Data Sources: Oil and Gas Platforms Data from © Oil and Gas Authority (OGA) (2024); Oil and Gas Pipelines and Hydrocarbon Fields Data from © North Sea Transition Authority (NSTA) (2024); Carbon Capture Storage Lease Area Data from © The Crown Estate (TCE) (2024).

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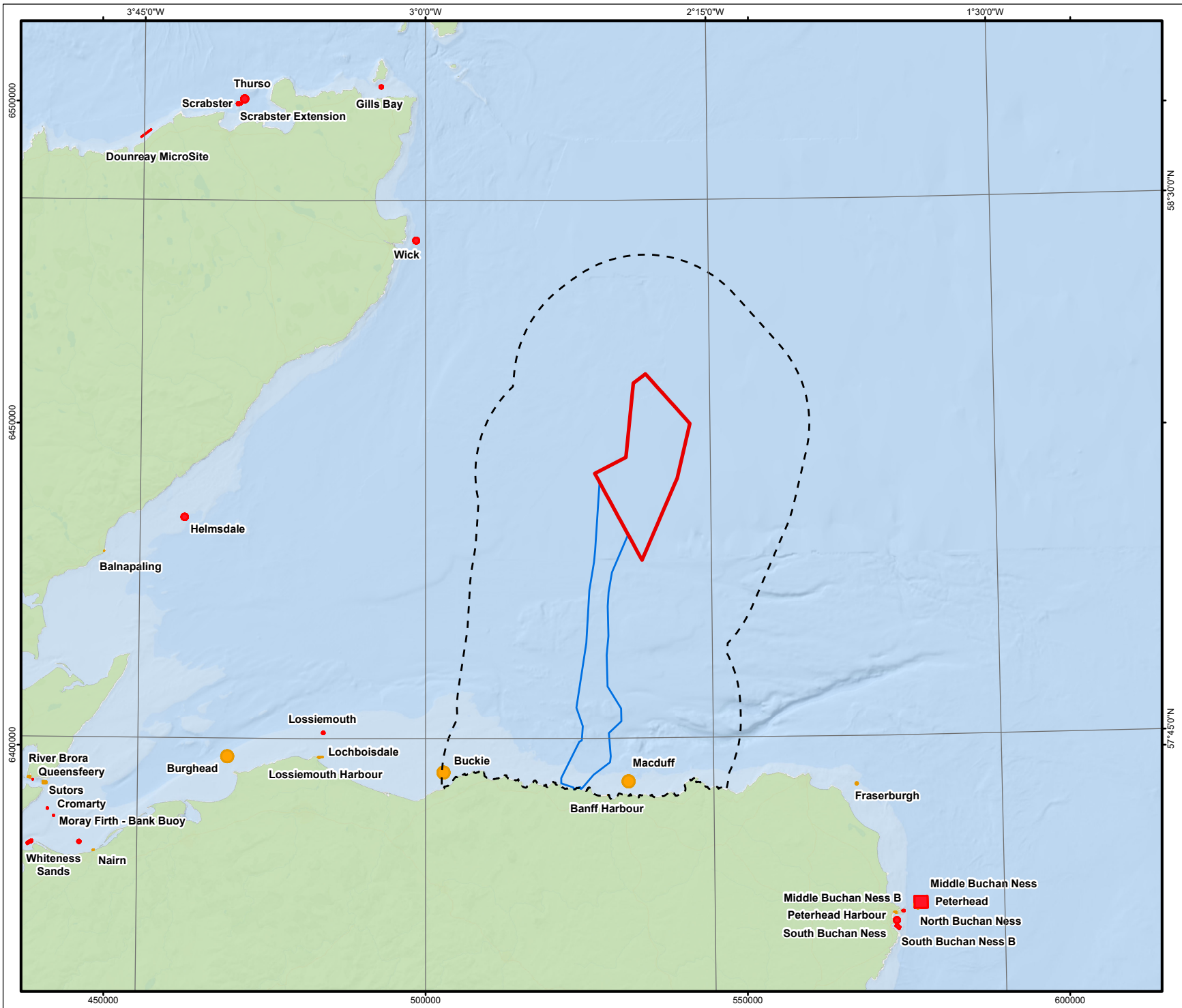


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CONTRACTOR DRAWING NO UKCAL1_GO_WNF_IJU_MAP_00121		CONTRACTOR REV 01	
GEOGRAPHIC PARAMETERS WGS 84 / UTM zone 30N (EPSG: 32630)			
DRAWING TITLE Figure 13-5: Oil and Gas Marine Infrastructure in Relation to Caledonia South			
STATUS Approved		SCALE 1:800,000	
DRAWING NUMBER N/A		SHEET NO 01 of 01	
		REV N/A	



Caledonia South Site

Caledonia South Offshore Export Cable Corridor

10NM Study Area

Disposal Sites

Open

Closed

Data Source: Disposal Sites Data from © Centre of Environment, Fisheries and Aquaculture Science (CEFAS) (2023)

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COORDINATE PARAMETERS

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Figure 13-6: Licenced Marine Disposal Sites in Relation to Caledonia South

STATUS

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SCALE

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N/A

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N/A

Caledonia South Offshore Export Cable Corridor

Offshore Wind Farm (OWF) Developments

- 13.4.3.25 Of the three OWFs in the OHA study area, the Moray East OWF is the closest and is located 3.44km from the Caledonia South OECC. The export cables of the Moray East OWF cross the Caledonia South OECC, making landfall near Banff/Macduff on the Aberdeenshire coast. The Caledonia South OECC is 22km from the Beatrice OWF, while the Moray West OWF lies 17.44km west of the Caledonia South OECC.

Other Energy Developments (Wave and Tidal)

- 13.4.3.26 There are currently no planned wave or tidal energy developments identified within the OHA study area. The nearest tidal installation is the Ness of Duncansby tidal array, which is located 66.7km north of the OECC. The nearest wave installation is the Deerness wave energy converter, which is located 85.1km north of the Caledonia South OECC.

Telecommunications and Subsea Cables

Telecommunications

- 13.4.3.27 The SHEFA-2 fibre-optic telecommunications cable intersects the OHA study area and the Caledonia South OECC (Figure 13-4) and is therefore considered in this assessment. Shefa Ltd has specific seabed rights granted as part of its seabed lease with Crown Estate Scotland. In particular, permission must be granted by the cable owner for any works planned to be undertaken within 250m either side of the cable. Where works are within 1km of the cable, the operator must be notified prior to any works being undertaken.

Power Cables

- 13.4.3.28 The Caithness – Moray HVDC Link subsea cable does not cross the Caledonia South OECC (Figure 13-4); however, it does intercept the north of the OHA study area.

Beatrice Demonstrator Cables

- 13.4.3.29 There is no overlap between the Beatrice demonstrator cables and the Caledonia South OECC, however the cables are located within the OHA study area.

Oil and Gas Infrastructure

- 13.4.3.30 There is no existing Oil and Gas infrastructure within the Caledonia South OECC or within the 10nm buffer. As there is no active oil and gas infrastructure within the OHA study area, oil and gas infrastructure are not considered in this assessment.

Marine Dredging and Disposal

- 13.4.3.31 The closest open marine disposal sites to the Caledonia South OECC are located at Macduff which is 3.19km from the Caledonia South OECC and Buckie which is 17.37km from the Caledonia South OECC (Figure 13-6). Both

of these sites are located within the OHA study area. No marine aggregate extraction is licensed within the study area.

Other Marine Infrastructure

Aquaculture

- 13.4.3.32 There are no existing lease agreements for aquaculture developments present within the OHA study area. Therefore, aquaculture is not considered in this assessment.

Nuclear Energy

- 13.4.3.33 There are no existing nuclear developments or plans for nuclear development in the Moray Firth. Therefore, nuclear energy is not considered in this assessment.

Offshore Wind Innovation and Targeted Oil and Gas (INTOG)

- 13.4.3.34 There are no existing INTOG developments or plans for INTOG developments in the Moray Firth. Therefore, INTOG is not considered in this assessment.

Marine and Coastal Recreational Activities and Water Sports

- 13.4.3.35 Marine and coastal recreational activities and water sports have not been considered within this chapter, and are instead covered within Volume 4, Chapter 9: Shipping and Navigation and Volume 6, Chapter 2: Socio-economics, Tourism and Recreation.

13.4.4 Do Nothing Baseline

- 13.4.4.1 If Caledonia South does not come forward, an assessment of the future baseline conditions has also been carried out and is described within this section.
- 13.4.4.2 In line with Schedule 4, Regulation 3 of The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (Scottish Parliament, 2017²⁷), and The Marine Works (Environmental Impact Assessment) Regulations 2007 (UK Parliament, 2007²⁸), this EIAR requires a "description of the relevant aspects of the current state of the environment (the "baseline scenario") and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge". This reflects how the baseline relevant to OHA is expected to evolve without Caledonia South.
- 13.4.4.3 There is potential that the Scottish offshore wind industry will experience significant growth in the coming years, with 20 projects with a combined capacity of 27.6GW offered leases for the development of offshore wind energy infrastructure through the ScotWind leasing process. In order to support the delivery of Scotland's 2017 Energy Strategy (Scottish Government, 2017²⁹), plans currently include the development of 11GW of

offshore wind capacity by 2030. Levels of baseline vessel activity would continue to increase with the development of other assets.

- 13.4.4.4 If Caledonia South were not to go ahead, there would be no changes to the baseline level of vessel movements in the OHA study area. There would also be no risk of impacts caused by temporary obstruction to other OWFs, utilities developments and/or marine disposal sites caused by Caledonia South during its construction, O&M or decommissioning phases.

13.4.5 Data Gaps and Limitations

- 13.4.5.1 Some of the prospective sites within the vicinity of Caledonia South are still in early stages of planning, and information regarding these projects may be limited or uncertain. Therefore, this assessment has identified a reasonable worst-case scenario in order to reduce the risk of later design modifications falling outside of the assessment envelope.

13.5 EIA Approach and Methodology

13.5.1 Overview

- 13.5.1.1 This section outlines the methodology for assessing the likely significant effects on OHA from the construction, O&M and decommissioning of Caledonia South.

13.5.2 Impacts Scoped in to the Assessment

- 13.5.2.1 The Offshore Scoping Report (Volume 7, Appendix 2) was submitted to MD-LOT in September 2022. The Offshore Scoping Report set out the overall approach to assessment and allowed for the refinement of Caledonia South over the course of the assessment. The proposed scope of the assessment is set out in Table 13-7.

Table 13-7: Other Human Activities Scope of Assessment.

Potential Impact	Phase	Nature of Impact
Temporary obstruction to other OWFs	Construction	Direct
Temporary obstruction to utilities developments and associated activities	Construction	Direct
Temporary obstruction to licensed marine disposal sites and associated activities	Construction	Direct
Temporary obstruction to other OWFs	O&M	Direct

Potential Impact	Phase	Nature of Impact
Temporary obstruction to utilities developments and associated activities	O&M	Direct
Temporary obstruction to licensed marine disposal site and associated activities	O&M	Direct
Temporary obstruction to other OWFs	Decommissioning	Direct
Temporary obstruction to utilities developments and associated activities	Decommissioning	Direct
Temporary obstruction to licensed marine disposal sites and associated activities	Decommissioning	Direct

13.5.3 Impacts Scoped out of the Assessment

13.5.3.1 The impacts scoped out of the assessment during EIA scoping, and the justification for this, are listed in Table 13-8.

Table 13-8: Impacts Scoped Out for Other Human Activities.

Potential Impact	Justification
Temporary obstruction to wave and tidal renewable energy developments and associated activities	There are no wave or tidal renewable energy developments and/or associated activities located within the OHA study area.
Temporary obstruction to oil and gas developments and associated activities	There are no oil and gas developments and/or associated activities located within the OHA study area.
Temporary obstruction to CCS developments and associated activities	There are no CCS developments and/or activities located within the OHA study area.
Temporary obstruction to marine aggregates activities	There are no marine aggregate sites located within the OHA study area.
Temporary obstruction to nuclear energy activities	There are no nuclear energy activities located within the OHA study area.
Temporary obstructions to aquaculture activities	There are no aquaculture sites located within the OHA study area.
Temporary obstructions to INTOG activities	There are no INTOG sites located within the OHA study area.

13.5.4 Assessment Methodology

- 13.5.4.1 The project-wide generic approach to assessment is set out in Volume 1, Chapter 7: EIA Methodology. To assign significance of an effect, the assessment of OHA considers the potential magnitude of change to the baseline conditions arising from Caledonia South and the sensitivity of any particular receptor, along with any embedded mitigation measures (Table 13-9) the assessment process to determine the overall significance of the resulting effect.
- 13.5.4.2 The assessment of potential impacts on OHA is based on the worst-case assessment scenarios presented in Table 13-10. The worst-case assessment assumptions include seabed preparation activities, the number and size of offshore infrastructure, the type and size of WTG and OSP foundations used, in addition to the timing and duration of the proposed works.
- 13.5.4.3 The assessment of impacts on OHA has been informed by baseline data collection to ensure the identification of relevant details on the OHA receptors within the study area. Consultation has also been ongoing with identified operators to establish the current status of known infrastructure and other users within the OHA study area. The current baseline conditions in relation to OHA have been presented in Section 13.4.3.

13.5.5 Approach to Cumulative Effects

- 13.5.5.1 The Cumulative Impact Assessment (CIA) assesses the impact associated with Caledonia South together with other relevant plans, projects and activities. Cumulative effects are therefore the combined effect of Caledonia South in combination with the effects from a number of different projects, on the same receptor or resource.
- 13.5.5.2 The approach to the CIA for OHA follows the process outlined in Volume 1, Chapter 7: EIA Methodology.
- 13.5.5.3 The list of relevant developments for inclusion within the CEA is outlined in Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology.
- 13.5.5.4 Developments which are located within the OHA study area have the potential to result in a cumulative effect. Developments which are either operational or in the decommissioning stage are considered to be part of the baseline and are not considered within the OHA assessment.

13.5.6 Embedded Mitigation

- 13.5.6.1 Where possible, mitigation measures have been embedded into the design of Caledonia South. Where embedded mitigation measures have been developed into the design of Caledonia South with specific regard to OHA, these are described in Table 13-9. The impact assessment presented in Sections 13.7 to 13.10 take into account this embedded mitigation.

Table 13-9: Embedded Mitigation.

Code	Mitigation Measure	Securing Mechanism
M-1	Development of and adherence to a Cable Plan (CaP). The CaP will confirm planned cable routing, burial and any additional protection and will set out methods for post-installation cable monitoring.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-3	Development of and adherence to a Construction Method Statement (CMS). The CMS will confirm construction methods and the roles and responsibilities of parties engaged in construction. It will detail any construction-related mitigation measures.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-8	Development of and adherence to a Environmental Management Plan (EMP). The EMP will set out mitigation measures and procedures relevant to environmental management, including but not limited to the following topics: Chemical usage, invasive non-native marine species, dropped objects, pollution prevention and contingency planning, and waste management.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-9	Development of and adherence to a Marine Pollution Contingency Plan (MPCP). The MPCP will identify potential sources of pollution and associated spill response and reporting procedures.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-14	Development of and adherence to a Lighting and Marking Plan (LMP). The LMP will confirm compliance with legal requirements with regards to shipping, navigation and aviation marking and lighting.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-19	Development of and adherence to a Navigational Safety Plan (NSP). The NSP will describe measures put in place by the Proposed Development related to navigational safety, including information on Safety Zones, charting, construction buoyage, temporary lighting and marking, and means of notification of Project activity to other sea users (e.g., via Notice to Mariners).	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.

Code	Mitigation Measure	Securing Mechanism
M-21	Advance warning and accurate location details of construction, maintenance and decommissioning operations, associated Safety Zones and advisory passing distances will be given via Notices to Mariners and Kingfisher Bulletins.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-23	Application for and use of Safety Zones of up to 500m during construction, major maintenance and decommissioning phases. Where appropriate, guard vessels will also be used to ensure adherence with Safety Zones or advisory passing distances, as defined by risk assessment, to mitigate any impact which poses a risk to surface navigation during construction, maintenance and decommissioning phases. Such impacts may include partially installed structures or cables, extinguished navigation lights or other unmarked hazards.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-24	Any objects dropped on the seabed during works associated with the Proposed Development will be reported and objects will be recovered where they pose a hazard to other marine users and where recovery is possible.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-25	Development of and adherence to a Emergency Response Cooperation Plan (ERCoP). The ERCoP will be prepared in line with MCA guidance and confirms what measures the Proposed Development has in place to support any emergency response.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-26	Marine coordination and communication to manage project vessel movements.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.
M-38	Crossing and proximity agreements with known existing pipeline and cables operators will be sought.	To be secured as a condition of the Generation Asset and Transmission Asset Marine Licences.

13.6 Key Parameters for Assessment

- 13.6.1.1 Volume 1, Chapter 3: Proposed Development Description (Offshore) details the parameters of Caledonia South using the Rochdale Envelope approach. This section identifies those parameters during construction, O&M and decommissioning relevant to potential impacts on OHA. The worst case assumptions with regard to OHA are summarised in Table 13-10.
- 13.6.1.2 Regarding the construction scenarios included in Volume 1, Chapter 5: Programme and Phasing, there are no specific construction scenarios relevant to this OHA assessment due to the variety of other developments and their associated activities in the area and the long-term overlap with O&M activities.

Table 13-10: Worst Case Assessment Scenario Considered for Each Impact as Part of the Assessment of Likely Significant Effects.

Potential Impact	Assessment Parameter	Explanation
Construction		
Impact 1: Temporary obstruction to other OWFs	<p>Seabed Preparation:</p> <ul style="list-style-type: none"> Geophysical surveys; UXO clearance; Pre-lay grapnel run across entire length of all cables; Boulder clearance campaign (15m width corridors); and Bedform clearance (e.g., sandwaves). <p>Construction/Installation of:</p> <ul style="list-style-type: none"> 78 WTGs: <ul style="list-style-type: none"> 39 floating semi-submersible WTG foundations with sea surface dimensions of 102m×96.7m; 39 bottom-fixed WTG foundations with sea surface dimensions of 24m×24m; Two OSPs with topside dimensions of 55m×45m; 78 inter-array cables of 365km combined length; One interconnector cable of 30km length; Two offshore export cables of 150km combined length; Two Horizontal Directional Drilling (HDD) exit pits (one per export cable), excavated footprint of 90m², with total area of 180m²; 500m construction safety zones; Ten crossings for the inter-array cables; Two crossings for the interconnector cable; Eight crossings for the offshore export cables; and 25 construction vessels on-site simultaneously and 2,225 vessel movements 	This scenario contains parameters that represent the greatest obstruction to other OWFs in the study area based on the greatest number of project infrastructure, number of vessel movements and period of construction.

Potential Impact	Assessment Parameter	Explanation
Impact 2: Temporary obstruction to utilities developments and associated activities	Refer to Impact 1.	This scenario contains parameters that represent the greatest obstruction to utilities in the study area based on the greatest number of project infrastructure, number of vessel movements and period of construction.
Impact 3: Temporary obstruction to licensed marine disposal sites and associated activities	Refer to Impact 1.	This scenario contains parameters that represent the greatest obstruction to licenced marine disposal sites in the study area during the construction phase based on the greatest number of project infrastructure, number of vessel movements and period of construction.
Operation and Maintenance		
Impact 4: Temporary obstruction to other OWFs	Operation of: <ul style="list-style-type: none"> 78 WTGs <ul style="list-style-type: none"> 39 floating semi-submersible WTG foundations with sea surface dimensions of 102m×96.7m; 39 bottom-fixed WTG foundations with sea surface dimensions of 24m×24m; Two OSPs with topside dimensions of 55m×45m; 78 inter-array cables of 365km combined length; One interconnector cable of 30km length; Two offshore export cables of 150km combined length; 500m construction safety zones; Ten crossings for the inter-array cables; Two crossings for the interconnector cable; Eight crossings for the offshore export cables; Three vessels on-site simultaneously during routine operations; 25 vessels on-site simultaneously during major works; and 	This scenario contains parameters that represent the greatest obstruction to other OWFs in the study area based on the greatest number of project infrastructure, number of vessel movements and period of operation.

Potential Impact	Assessment Parameter	Explanation
	<ul style="list-style-type: none"> 938 vessel movements annually. 	
Impact 5: Temporary obstruction to utilities developments and associated activities	Refer to Impact 4.	This scenario contains parameters that represent the greatest obstruction to utilities in the study area based on the greatest number of project infrastructure, number of vessel movements and period of operation.
Impact 6: Temporary obstruction to licensed marine disposal site and associated activities	Refer to Impact 4.	This scenario contains parameters that represent the greatest obstruction to licenced marine disposal sites in the study area during the operation and maintenance phase based on the greatest number of project infrastructure, number of vessel movements and period of operation.
Decommissioning		
Impact 7: Temporary obstruction to other OWFs	<p>To be determined, but assumed to include the reverse of construction activities (refer to Impact 1).</p> <p>WTG and OSP foundations will be cut below the natural level of the seabed and removed. The approach to decommissioning cables and scour/cable protection will be considered in the final Decommissioning Programme.</p>	This scenario contains parameters that represent the greatest obstruction to other OWFs in the study area based on the greatest number of project infrastructure, number of vessel movements and period of decommissioning.
Impact 8: Temporary obstruction to utilities developments and associated activities	<p>To be determined, but assumed to include the reverse of construction activities (refer to Impact 2).</p> <p>WTG and OSP foundations will be cut below the natural level of the seabed and removed. The approach to decommissioning cables and scour/cable protection will be considered in the final Decommissioning Programme.</p>	This scenario contains parameters that represent the greatest obstruction to utilities in the study area based on the greatest number of project infrastructure, number of vessel movements and period of decommissioning.

Potential Impact	Assessment Parameter	Explanation
Impact 9: Temporary obstruction to licensed marine disposal sites and associated activities	<p>To be determined, but assumed to include the reverse of construction activities (refer to Impact 3).</p> <p>WTG and OSP foundations will be cut below the natural level of the seabed and removed. The approach to decommissioning cables and scour/cable protection will be considered in the final Decommissioning Programme.</p>	<p>This scenario contains parameters that represent the greatest obstruction to licenced marine disposal sites in the study area during the decommissioning phase based on the greatest number of project infrastructure, number of vessel movements and period of decommissioning.</p>

13.7 Potential Effects

13.7.1 Construction

Impact 1: Temporary Obstruction to Other OWFs

- 13.7.1.1 As described in Volume 1, Chapter 3: Proposed Development Description (Offshore), the construction phase involves the installation of up to 78 WTGs and their associated foundations, up to 78 inter-array cables with a total length of up to 365km, one interconnectors with a total length of up to 30km, two Offshore Export Cable Circuits totalling up to 150km, and two OSPs and their associated foundations. The construction and installation of this infrastructure is anticipated to result in an additional 2,225 vessel movements across the Moray Firth over the construction period. During the construction and installation of infrastructure, there will be rolling 500m safety zones in order to maintain safety of other marine users and the construction site. The increased vessel activity and construction safety zones associated with Caledonia South have the potential to disrupt construction or O&M activities at the surrounding OWF sites, with both commercial and health and safety implications.
- 13.7.1.2 Caledonia South is in close proximity to a number of other OWFs, with the Moray East, Moray West and Beatrice OWF array areas all within the OHA study area (Figure 13–2). The OECC of the Moray East, Moray West and Beatrice OWFs also intersect the OHA study area.
- 13.7.1.3 Both the Moray East and Beatrice OWFs are in the O&M phase. The construction of the Moray West OWF is expected to be complete by the end of 2024. Therefore, at the time of writing, there will be no overlap in the construction phases of Moray West OWF and Caledonia South, and the potential for obstructions to the other OWFs will affect the projects in their O&M phases.
- 13.7.1.4 The Moray East, Moray West and Beatrice OWFs represent a significant portion of Scotland’s renewable energy capacity, with a total combined capacity of up to 3.4GW. Any impacts on the other OWF sites may result in hinderances to Scotland’s current pathway to Net Zero by 2045 and goes against the need to act in a climate emergency (Scottish Government, 2020³⁰). These other OWFs are considered to be of high economic value, and any obstruction to essential maintenance or repairs may result in potential economic impacts.
- 13.7.1.5 There are embedded mitigation measures included for Caledonia South that will reduce the risk of impact associated with temporary obstruction, including a CMS which will confirm construction methods and any construction-related mitigation (of which examples are listed in Table 13-9) (M-3) and a CaP which will confirm the final cable route and burial method (M-1). The embedded

mitigation register also includes measures associated with navigational safety, such as the use of safety zones (M-23), marine coordination (M-20), temporary lighting and marking (M-14), procedures for dropped objects (M-24) and emergency plans (M-25). Notification on project construction activity will also be issued to other sea users via Notice to Mariners (NtM) and Kingfisher Bulletins (M-19, M-21). Consultation with other OWF developers is ongoing, and the sharing of documents and work plans will allow other marine users to plan ahead and re-direct any activities with minimal interference.

Magnitude of Impact

- 13.7.1.6 The proximity of other OWF sites means that there is the potential for construction activities to obstruct other OWF activities; however, the suggested mitigation of communication of construction activities will allow other OWFs to plan ahead and work around activities with minimal interference. Therefore, the magnitude of impact has been assessed as **Low**.

Sensitivity of Receptor

- 13.7.1.7 Due to the proximity of the OWF sites, the high value of the OWF assets and implications for human safety, the sensitivity of other OWFs to temporary obstructions associated with the construction of Caledonia South has been assessed as **High**.

Significance of Effect

- 13.7.1.8 Taking the high sensitivity of other OWFs and the low magnitude of impact, the overall effect of temporary obstruction to other OWFs during construction is considered to be **Minor and Not Significant in EIA terms**.

Impact 2: Temporary Obstruction to Utilities Developments and Associated Activities

- 13.7.1.9 There are three subsea cables within the OHA study area. The Caithness – Moray HVDC Link is an operational electricity transmission cable that is routed around the Moray East OWF and intersects Caledonia South. The SHEFA-2 telecommunications cable is also routed around the Moray East OWF and intersects both Caledonia South Site and the Caledonia South OECC. The Shetland HVDC Link will be an electricity transmission cable that intersects the north of the OHA study area (no direct overlap with the Caledonia South Site or Caledonia South OECC).
- 13.7.1.10 Both the Caithness – Moray HVDC Link and SHEFA-2 subsea cables are currently operational and expected to be operational at the time of construction of Caledonia South. The Shetland HVDC Link is currently under construction, with an expected commissioning date of 2024 (SSEN, 2024b²¹).
- 13.7.1.11 The Caithness – Moray HVDC Link represents a key development in the North of Scotland’s energy infrastructure and is capable of supporting a total of 1.2GW of additional capacity for renewable infrastructure across Caithness, Sutherland and Ross-shire. This cable is of high economic value and is a

nationally import asset. The SHEFA-2 cable is a fibre optic cable providing connections between the Faroe Islands, Shetland Islands and Orkney Islands. This cable is also of high economic value, and is a nationally important asset.

- 13.7.1.12 The construction of Caledonia South has the potential to interfere with ongoing activities in relation to utilities developments in the OHA study area. The presence of the 500m safety zone around wind farm structures and/or OfTI during construction activities associated with Caledonia South may restrict access to the Caithness – Moray HVDC Link cable and the SHEFA-2 cable for the purpose of maintenance and/or repair. As the Caithness – Moray Cable and SHEFA-2 cable directly overlap with Caledonia South (with the latter also overlapping the OECC), there is also the risk of damage to these assets during construction of Caledonia South.
- 13.7.1.13 There are embedded mitigation measures included for Caledonia South that will reduce the risk of impact associated with temporary obstruction, including a CMS which will confirm construction methods and any construction-related mitigation (of which examples are listed in Table 13-9) (M-3) and a CaP which will confirm the final cable route and burial method (M-1). The embedded mitigation register also includes measures associated with navigational safety, such as the use of safety zones (M-23), marine coordination (M-20), temporary lighting and marking (M-14), procedures for dropped objects (M-24) and emergency plans (M-25). Notification on project construction activity will also be issued to other sea users via NtM and Kingfisher Bulletins (M-19, M-21), which will allow other human users to plan ahead and re-direct any activities with minimal interference. Consultation is ongoing with SSEN and Shefa Ltd in an effort to reach proximity agreements in order to avoid the risk of damage, and cable crossings will be made in agreement with cable owners during the finalisation of the Caledonia South layout, and thus locations of WTGs and offshore cables (M-1, M-38).

Magnitude of Impact

- 13.7.1.14 The proximity of utilities developments, including one cable that directly overlaps with Caledonia South, means that there is the potential for construction activities to obstruct utilities developments; however, the suggested mitigation of communication of construction activities and ongoing consultation with utilities developers will allow them to plan ahead and work around construction activities with minimal interference. Therefore, the magnitude of impact has been assessed as **Low**.

Sensitivity of Receptor

- 13.7.1.15 The risk of damage to the Caithness – Moray HVDC Link and SHEFA-2 cables will result in high costs for repair and the disruption of urgent maintenance or repair of these cables may lead to potential implications on grid supply and telecommunications links. Therefore, the sensitivity of utilities developments to temporary obstructions associated with the construction of Caledonia South has been assessed as **High**.

Significance of Effect

- 13.7.1.16 Taking the high sensitivity of utilities developments and the low magnitude of impact, the overall effect of temporary obstruction to utilities developments during construction is considered to be **Minor and Not Significant in EIA terms**.

Impact 3: Temporary Obstruction to Licensed Marine Disposal Sites and Associated Activities

- 13.7.1.17 There are two active sea disposal sites in the OHA study area. These include the Macduff and Buckie marine disposal sites, which are located within the 10nm buffer from the Caledonia South OECC.
- 13.7.1.18 Maintenance dredging is required at harbours due to the infilling of sediment, and the resulting sediment is disposed of at a marine disposal site. The Macduff marine disposal site is used annually by Banff Harbour and less frequently by Macduff Harbour. The Buckie marine disposal is used primarily by Buckie Harbour, who currently hold a licence to dispose of 28,000m³ of sediment up to 2026, and Cullen Harbour, Findochty Harbour and Portknockie Harbour who also hold a licence to dispose of 3,500m³ each up to 2026. The removal of sediment from the harbours is a vital activity that allows the harbour to continue its operation effectively, and the Macduff and Buckie marine disposal sites have been regarded as the Best Practical Environmental Options (BPEO) regarding the disposal of sediment.
- 13.7.1.19 The construction of Caledonia South has the potential to interfere with ongoing activities in relation to marine disposal sites and disposal activities in the study area. The presence of the 500m safety zone around construction vessels, specifically in relation to the installation of export cables along the Caledonia South OECC, may restrict access to the Macduff and Buckie marine disposal sites.
- 13.7.1.20 There are embedded mitigation measures included for Caledonia South that will reduce the risk of impact associated with temporary obstruction, including a CMS which will confirm construction methods and any construction-related mitigation (of which examples are listed in Table 13-9) (M-3) and a CaP which will confirm the final cable route and burial method (M-1). The embedded mitigation register also includes measures associated with navigational safety, such as the use of safety zones (M-23), marine coordination (M-20), temporary lighting and marking (M-14), procedures for dropped objects (M-24) and emergency plans (M-25). Notification on project construction activity will also be issued to other sea users via NtM and Kingfisher Bulletins (M-19, M-21), which will allow other marine users to plan ahead and re-direct any activities with minimal interference.

Magnitude of Impact

- 13.7.1.21 With the relevant embedded mitigation measures, the magnitude of the impact has been assessed as **Low**.

Sensitivity of Receptor

- 13.7.1.22 Due to the commercial importance associated with the removal of sediment from harbours, the sensitivity of marine disposal sites to temporary obstructions caused by the construction of Caledonia South has been assessed as **Medium**.

Significance of Effect

- 13.7.1.23 Taking the medium sensitivity of marine disposal sites and the low magnitude of impact, the overall effect of temporary obstruction to licenced marine disposal sites and associated activities during construction is considered to be **Negligible and Not Significant in EIA terms**.

13.7.2 Operation

Impact 4: Temporary Obstruction to Other OWFs

- 13.7.2.1 The temporary obstruction associated with increased vessel movement during the O&M phase of Caledonia South will be reduced when compared to the construction phase, as described in Section 13.7.1. Maintenance activities will be carried out during regular inspections every 6-12 months depending on the component. For low priority corrective maintenance at a single asset, it may be possible to include this in a site-wide summer campaign that includes a range of corrective maintenance activities. For high priority corrective maintenance at one or more assets, fault rectification will be planned as soon as reasonably practicable.
- 13.7.2.2 Only during major maintenance or repair activities, which are expected to be infrequent, would a 500m safety radius around wind farm structures and/or OFTI be implemented, which could be a potential cause of disruption to other OWF activities.
- 13.7.2.3 As with the impact of temporary obstruction to other OWFs during construction in Section 13.7.1, there are embedded mitigation measures included for Caledonia South that will reduce the risk of impact associated with temporary obstruction, including a CaP which will confirm any relevant post-installation cable monitoring (M-1). The Mitigation Commitments Register also includes measures associated with navigational safety, such as the use of safety zones (M-23), marine coordination (M-20), temporary lighting and marking (M-14), procedures for dropped objects (M-24) and emergency plans (M-25). Notification on project construction activity will also be issued to other sea users via NtM and Kingfisher Bulletins (M-19, M-21), which will allow other marine users to plan ahead and re-direct any activities with minimal interference.

Magnitude of Impact

- 13.7.2.4 With the implementation of the embedded mitigation discussed, the magnitude of the impact has been assessed as **Low**.

Sensitivity of Receptor

- 13.7.2.5 As described in Section 13.7.1, the sensitivity of other OWFs to temporary obstruction has been assessed as **High**.

Significance of Effect

- 13.7.2.6 Taking the high sensitivity of other OWF developments and their associated activities, and the low magnitude of impact, the overall effect of temporary obstruction to other OWFs and their associated activities during O&M is considered to be **Minor and Not Significant in EIA terms**.

Impact 5: Temporary Obstruction to Utilities Developments and Associated Activities

- 13.7.2.7 As with the impact of temporary obstruction to Utilities Developments during construction in Section 13.7.1, there are measures included within the Mitigation Commitments Register that will reduce the risk of impact associated with temporary obstruction to Utilities Developments during O&M, such as a CaP which will confirm the need for any relevant post-installation cable monitoring (M-1). The Mitigation Commitments Register also includes measures associated with navigational safety, such as the use of safety zones (M-23), marine coordination (M-20), temporary lighting and marking (M-14), procedures for dropped objects (M-24) and emergency plans (M-25). Notification on project construction activity will also be issued to other sea users via NtM and Kingfisher Bulletins (M-19, M-21), which will allow other marine users to plan ahead and re-direct any activities with minimal interference.
- 13.7.2.8 Consultation is ongoing with SSEN and Shefa Ltd in an effort to reach proximity agreements in order to limit the risk of damage, and cable crossings will be made in agreement with cable owners during the finalisation of the Caledonia South layout (M-1, M-38). The development of proximity agreements with other utilities developments will also apply to any O&M activities, ensuring the risk of damage to cables is kept as low as reasonably possible.

Magnitude of Impact

- 13.7.2.9 With the implementation of the embedded mitigation discussed, the magnitude of the impact has been assessed as **Low**.

Sensitivity of Receptor

- 13.7.2.10 As described in Section 13.7.1, the sensitivity of utilities developments and their associated activities to temporary obstruction during O&M has been assessed as **High**.

Significance of Effect

- 13.7.2.11 Taking the high sensitivity of other OWFs and the low magnitude of impact, the overall effect of temporary obstruction to other OWFs during O&M is considered to be **Minor and Not Significant in EIA terms**.

Impact 6: Temporary Obstruction to Licensed Marine Disposal Sites and Associated Activities

- 13.7.2.12 As with the impact of temporary obstruction to other OWFs during construction in Section 13.7.1, there are embedded mitigation measures included for Caledonia South that will reduce the risk of impact associated with temporary obstruction to licensed marine disposal sites, including measures associated with navigational safety such as the use of safety zones (M-23), marine coordination (M-20), temporary lighting and marking (M-14), procedures for dropped objects (M-24) and emergency plans (M-25). Notification on project construction activity will also be issued to other sea users via NtM and Kingfisher Bulletins (M-19, M-21), which will allow other marine users to plan ahead and re-direct any activities with minimal interference.

Magnitude of Impact

- 13.7.2.13 With the implementation of the embedded mitigation discussed, the magnitude of the impact has been assessed as **Low**.

Sensitivity of Receptor

- 13.7.2.14 As described in Section 13.7.1, the sensitivity of marine disposal sites to temporary obstruction has been assessed as **Medium**.

Significance of Effect

- 13.7.2.15 Taking the medium sensitivity of temporary obstruction to licensed disposal sites and the low magnitude of impact to marine disposal sites, the overall effect during O&M is considered to be **Negligible and Not Significant in EIA terms**.

13.7.3 Decommissioning

Impact 7: Temporary Obstruction to Other OWFs

- 13.7.3.1 The decommissioning of Caledonia South will involve removing as much of the project infrastructure as possible, and the final option will be subject to decommissioning assessments and consultation with the relevant parties closer to the time. The temporary obstruction associated with the decommissioning activities relevant to Caledonia South is considered to be of the same magnitude as (or less than) the temporary obstruction associated with construction activities, as described in Section 13.7.1.

- 13.7.3.2 Mitigation measures similar to those employed during construction and O&M are likely to be implemented during decommissioning, though this will be informed by relevant guidance and best practice closer to the time.

Magnitude of Impact

- 13.7.3.3 The magnitude of the impact is likely to be the same as (or less than) the impact at construction and has been assessed as **Low to Negligible**.

Sensitivity of Receptor

- 13.7.3.4 As described in Section 13.7.1, the sensitivity of OWFs to temporary obstruction has been assessed as **High**.

Significance of Effect

- 13.7.3.5 Therefore, the overall effect of temporary obstruction to other OWFs during decommissioning is considered to be **Minor and Not Significant in EIA terms**.

Impact 8: Temporary obstruction to utilities developments and associated activities

- 13.7.3.6 Mitigation measures similar to those employed during construction and O&M are likely to be implemented during decommissioning, though this will be informed by guidance and best practice closer to the time.

Magnitude of Impact

- 13.7.3.7 The magnitude of the impact is likely to be the same as (or less than) the impact at construction and has been assessed as **Low to Negligible**.

Sensitivity of Receptor

- 13.7.3.8 As described in Section 13.7.1, the sensitivity of utilities developments to temporary obstruction has been assessed as **High**.

Significance of Effect

- 13.7.3.9 Therefore, the overall effect of temporary obstruction to other utilities developments during decommissioning is considered to be **Minor and Not Significant in EIA terms**.

Impact 9: Temporary Obstruction to Licensed Marine Disposal Sites and Associated Activities

- 13.7.3.10 Mitigation measures similar to those employed during construction and O&M are likely to be implemented during decommissioning, though this will be informed by guidance and best practice closer to the time.

Magnitude of Impact

- 13.7.3.11 The magnitude of the impact is likely to be the same as (or less than) the impact at construction and has been assessed as **Low to Negligible**.

Sensitivity of Receptor

- 13.7.3.12 As described in Section 13.7.1, the sensitivity of marine disposal sites to temporary obstruction has been assessed as **Medium**.

Significance of Effect

- 13.7.3.13 Therefore, the overall effect of temporary obstruction to the use of licensed marine disposal sites during decommissioning is considered to be **Negligible and Not Significant in EIA terms**.

13.8 Cumulative Effects

13.8.1 Overview

- 13.8.1.1 The list of developments identified for assessing cumulative effects is presented in Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology. In Table 13-11, the potential for cumulative effects with each of these developments is examined, and an assessment of the cumulative effects presented where appropriate.
- 13.8.1.2 The projects, plans and activities considered to be relevant to the assessment of impacts to other human activities are based upon an initial screening exercise undertaken on a long list. Each project, plan or activity has been considered and scoped in or out based on effect-receptor pathway, data confidence and the temporal and spatial scales involved. The cumulative assessment methodology identifies a 10nm or 18.5km study area for OHA.
- 13.8.1.3 For the purposes of assessing the impact of Caledonia South on OHA in the region, the cumulative effect assessment forming Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology of this EIA screened in a number of projects and plans as presented in Table 13-11.

Table 13-11: Other Human Activities Cumulative Effects.

Development	Potential for Significant Cumulative Effects	Comment
Moray West OWF and OECC ⁱⁱ	Yes	<p>Moray West OWF is under construction at the time of writing and is expected to be fully operational in 2025. Therefore, the O&M phase of the Moray West OWF will temporally overlap with Caledonia South.</p> <p>There is the potential for cumulative effects as a result of increases in vessel numbers/movements during the construction, O&M and decommissioning phases of Caledonia South.</p>
Stromar OWF OECC	Yes	<p>The proposed OECC for Stromar OWF is within the OHA study area and construction may take place at the same time as Caledonia OWF/OECC construction. There may therefore be a cumulative effect as a result of increases in vessel numbers/movements during the construction, O&M and decommissioning phases.</p>

- 13.8.1.4 Certain impacts assessed for Caledonia South alone are not considered in the cumulative assessment due to:
- The highly localised nature of the impacts (i.e., they occur entirely within Caledonia South boundary only);
 - Management measures in place for Caledonia South will also be in place on other projects reducing the risk of impact occurring; and/or
 - Where the potential significance of the impact from Caledonia South alone has been assessed as negligible.

ⁱⁱ Moray West Export Cable was commissioned after the CIA was undertaken, and therefore has been included as part of the longlist.

- 13.8.1.5 Therefore, the CIA has only considered the temporary obstruction to other OWF, and temporary obstruction to utilities developments and associated activities. The cumulative Worst-Case Design Scenario described in Table 13-12 have been selected as those that have the potential to result in the greatest cumulative effect on an identified receptor group. The cumulative impacts assessed in this section have been selected from the details provided in the project description for Caledonia South, as well as the information available on other projects and plans in order to inform a cumulative Worst-Case Design Scenario. Effects of greater adverse significance are not predicted to arise should any other development scenario (based on details within the DE to that assessed here), be taken forward in the final design scheme.

Table 13-12: Cumulative worst-case scenario for Other Human Activities

Impact	Scenario	Justification
Cumulative temporary increase in obstruction to other OWF, and temporary obstruction to utilities developments	Tier 1: <ul style="list-style-type: none"> Operation of Moray West OWF Operation of subsea cables –Moray West OWF cables 	If these intermittent activities overlap temporally with either the construction, operation or maintenance and Decommissioning of Caledonia South, there is potential for cumulative temporary obstruction to OWF and utilities developments within the wider OHA study area.

13.8.2 Construction

Cumulative Temporary Obstruction to OWF

- 13.8.2.1 The Stromar OECC construction timing and exact location are unknown at this time. It is likely that the construction may take place at a similar time to the construction of the Caledonia South OECC but the locations of landfall will likely be in different locations (according to Scoping Report information) with the Caledonia South OECC being located at Stake Ness on the Aberdeenshire coast, located to the west of Whitehills and the Stromar OECC being located in the region of Fraserburgh. It is considered that based on the information currently available that there will be no cumulative effect arising from the Stromar OECC.

13.8.3 Operation and Maintenance

Cumulative Temporary Obstruction to OWF

- 13.8.3.1 Due to uncertainty associated with the exact timing of O&M works of Moray West OWF (due to be constructed by 2024), there is insufficient data on which to undertake a quantitative or semi-quantitative assessment. As such, the discussion presented here is qualitative. It is considered highly unlikely that

each of the identified projects would be undertaking major maintenance works, in particular asset reburial or repairs, as these are infrequent occurrences during the lifetime of developments.

- 13.8.3.2 Vessel movements from O&M activities are generally short-lived, with major maintenance works infrequent. Any impacts from operational offshore windfarms/export cables (and other subsea cables) activities are therefore likely to be short-lived and of localised extent, with limited opportunity to overlap with Project-related activities. The Moray West OWF and OECC is currently under construction and is expected to be completed by the end of 2024, therefore maintenance-related impacts are similarly considered to be primarily short-lived and localised.

Magnitude of Impact

- 13.8.3.3 The proximity of the Moray West OWF means that there is potential for O&M activities to obstruct these projects; however, the suggested mitigation of communication of planned operation and maintenance activities will allow forward planning and work around activities with minimal interference. Therefore, the magnitude of impact has been assessed as **Low**.

Sensitivity of Receptor

- 13.8.3.4 Due to the proximity of the OWF sites, the high value of the OWF assets and implications for human safety, the sensitivity of the other projects to temporary obstructions associated with the construction of Caledonia South has been assessed as **High**.

Significance of Effect

- 13.8.3.5 Taking the high sensitivity of Moray West OWF and the low magnitude of impact, the overall effect of temporary obstruction to other OWFs during construction of Caledonia South is considered to be **Minor and Not Significant in EIA terms**.

13.8.4 Decommissioning

- 13.8.4.1 Due to the current uncertainty of decommissioning activities and their timeline for Caledonia South during its decommissioning phase, as well as the uncertainty of decommissioning activities associated with the Moray West OWF and the Stromar OECC, it is not possible for a meaningful cumulative assessment to be carried out. An Outline Offshore Decommissioning Plan of Caledonia South has been prepared to accompany the application (Volume 7, Appendix 16: Caledonia South Outline Offshore Decommissioning Plan).

13.9 In-combination Effects

- 13.9.1.1 In-combination impacts may occur through the inter-relationship with another EIAR topic that may lead to different or greater environmental effects than in isolation. There is also the potential for in-combination impacts resulting from

onshore and offshore works.

13.9.1.2 The potential in-combination effects for OHA receptors resulting from effects between works associated with Caledonia South are described below.

13.9.1.3 No in-combination effects (project lifetime effects) are anticipated between the construction, operation, and decommissioning stages of Caledonia South for OHA given the risks during each are managed by the stage specific mitigations applied (as described in Section 13.5.6).

13.9.1.4 It is not anticipated that any in-combination effects will be produced that are of greater significance than the assessments presented for each individual stage noting that all impacts are at most minor and therefore not significant in EIA terms.

Transboundary Effects

13.10

13.10.1.1 The Offshore Scoping Report (Volume 7, Appendix 2) detailed how there were no OHA receptors that had been identified that were associated with the neighbouring Exclusive Economic Zone, and so there was considered to be no potential for transboundary impacts from the construction, O&M and decommissioning of Caledonia South. Transboundary impacts were therefore scoped out with regards to OHA in the Offshore Scoping Report.

13.10.1.2 Since the publication of the Offshore Scoping Report (Volume 7, Appendix 2), no new potential transboundary effects have been identified, and so it remains scoped out of the OHA chapter of this EIAR.

Mitigation Measures and Monitoring

13.11

Construction

13.11.1

13.11.1.1 No additional mitigation measures beyond those outlined in Table 13-9 are proposed for the construction phase.

Operation

13.11.2

13.11.2.1 No additional mitigation measures beyond those outlined in Table 13-9 are proposed for the O&M phase.

Decommissioning

13.11.3

13.11.3.1 No additional mitigation measures beyond those outlined in Table 13-9 are proposed for the decommissioning phase.

13.12 Residual Effects

13.12.1 Construction Effects

13.12.1.1 All identified construction effects were assessed as not significant in EIA terms following the implementation of embedded mitigation. The residual effects during construction are therefore also considered to not be significant in EIA terms.

13.12.2 Operation Effects

13.12.2.1 All identified O&M effects were assessed as not significant in EIA terms following the implementation of embedded mitigation. The residual effects during construction are therefore also considered to not be significant in EIA terms.

13.12.3 Decommissioning Effects

13.12.3.1 All identified decommissioning effects were assessed as not significant in EIA terms following the implementation of embedded mitigation. The residual effects during construction are therefore also considered to not be significant in EIA terms.

13.13 Summary of Effects

13.13.1.1 Table 13-13 presents a summary of the significant effects assessed within this EIAR, any mitigation required, and the residual effects are provided.

Table 13-13: Summary of Effects for Other Human Activities.

Potential Impact	Magnitude	Sensitivity of Receptor	Significance	Mitigation Measure	Residual Effect
Construction					
Impact 1: Temporary obstruction to other OWFs	Low	High	Minor (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Minor (not significant)
Impact 2: Temporary obstruction to utilities developments and associated activities	Low	High	Minor (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Minor (not significant)
Impact 3: Temporary obstruction to licensed marine disposal sites and associated activities	Low	Medium	Negligible (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Negligible (not significant)
Operation					
Impact 4: Temporary obstruction to other OWFs	Low	High	Minor (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Minor (not significant)
Impact 5: Temporary obstruction to utilities	Low	High	Minor (not significant)	No mitigation required above and beyond embedded mitigation	Minor (not significant)

Potential Impact	Magnitude	Sensitivity of Receptor	Significance	Mitigation Measure	Residual Effect
developments and associated activities				measures outlined in Table 13-9.	
Impact 6: Temporary obstruction to licensed marine disposal sites and associated activities	Low	Medium	Negligible (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Negligible (not significant)
Decommissioning					
Impact 7: Temporary obstruction to other OWFs	Low – Negligible	High	Minor (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Minor (not significant)
Impact 8: Temporary obstruction to utilities developments and associated activities	Low – Negligible	High	Minor (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Minor (not significant)
Impact 9: Temporary obstruction to licensed marine disposal sites and associated activities	Low- Negligible	Medium	Negligible (not significant)	No mitigation required above and beyond embedded mitigation measures outlined in Table 13-9.	Negligible (not significant)

13.14 References

- ¹ United Nations (1982) 'United Nations Convention on the Law of the Sea (UNCLOS) (1982)'. Available at: <https://www.imo.org/en/ourwork/legal/pages/unitednationsconventiononthelawofthesea.aspx#:~:text=The%20United%20Nations%20Convention%20on,the%20oceans%20and%20their%20resources> (Accessed 19/09/2024)
- ² UK Parliament (1885) 'The Submarine Telegraph Act (1885)'. Available at: [https://www.legislation.gov.uk/ukpga/Vict/48-49/49#:~:text=\(1\)A%20person%20shall%20not,or%20in%20part%20telegraphic%20communication](https://www.legislation.gov.uk/ukpga/Vict/48-49/49#:~:text=(1)A%20person%20shall%20not,or%20in%20part%20telegraphic%20communication) (Accessed 19/09/2024)
- ³ UK Parliament (2004) 'The Energy Act (2004)'. Available at: <https://www.legislation.gov.uk/ukpga/2004/20/contents> (Accessed 19/09/2024)
- ⁴ Scottish Parliament (2016) 'Scotland Act (2016)'. Available at: <https://www.legislation.gov.uk/ukpga/2004/20/contents> (Accessed 19/09/2024)
- ⁵ Scottish Government (2015) 'Scotland's National Marine Plan'. Available at: <https://www.gov.scot/publications/scotlands-national-marine-plan/> (Accessed 19/09/2024)
- ⁶ Marine Institute (2000) 'Assessment of Impact of Offshore Wind Energy Structures on the Environment'. Available at: <https://oar.marine.ie/handle/10793/579> (Accessed 19/09/2024)
- ⁷ European Sea Cables Association (ESCA) (2023) 'Guidelines'. Available at: <https://www.escaeu.org/guidelines/> (Accessed 19/09/2024)
- ⁸ International Cable Protection Committee (ICPC) (2019) 'Recommendations'. Available at: <https://www.iscpc.org/publications/recommendations/> (Accessed 19/09/2024)
- ⁹ The Crown Estate (CES) (2012) 'Export transmission cables for offshore renewable installations'. Available at: <https://www.thecrownestate.co.uk/media/1781/ei-km-in-pc-cables-export-transmission-cables-for-offshore-renewable-installations.pdf> (Accessed 19/09/2024)
- ¹⁰ Caledonia Offshore Wind Farm Ltd (2023) 'Caledonia Offshore Wind Farm Supply Chain Outlook'. Available at: <https://www.crownstatescotland.com/sites/default/files/2023-07/caledonia-offshore-wind-farm-scds-outlook-july-2023-update.pdf> (Accessed 19/09/2024)
- ¹¹ Scottish Government (2024a) 'The Marine Scotland NMPi Maps'. Available at: <https://marinescotland.atkinsgeospatial.com/nmpi/#:~:text=This%20interactive%20mapping%20tool%20is%20to%20assist%20in%20the%20development> (Accessed 13/09/2024)

- ¹² Crown Estate Scotland (2024) 'Crown Estate Scotland Spatial Hub'. Available at: <https://crown-estate-scotland-spatial-hub-coregis.hub.arcgis.com/> (Accessed 19/09/2024)
- ¹³ Scottish Government (2020) 'Sectoral Marine Plan Regional Guidance'. Available at: <https://www.gov.scot/publications/sectoral-marine-plan-regional-locational-guidance/pages/1/> (Accessed 13/09/2024)
- ¹⁴ Scottish Government (2024b) 'Marine Scotland Information: Marine Licence Applications'. Available at: <https://marine.gov.scot/marine-licence-applications> (Accessed 13/09/2024)
- ¹⁵ Moray Offshore Wind Farm (East) Ltd (2024) 'Moray East Offshore Wind Farm Website'. Available at: <https://www.morayeast.com/> (Accessed 19/09/2024)
- ¹⁶ Beatrice Offshore Wind Farm Ltd (2024) 'Beatrice Offshore Wind Farm Website'. Available at: <https://www.beatricewind.com/> (Accessed 19/09/2024)
- ¹⁷ Moray Offshore Wind Farm (West) Ltd (2024) 'Moray East Offshore Wind Farm Website'. Available at: <https://www.moraywest.com/> (Accessed 19/09/2024)
- ¹⁸ Scottish Government (2021) 'Sectoral Marine Plan for Offshore Wind for Innovation and Targeted Oil and Gas Decarbonisation (INTOG) - Planning Specification and Context Report'. Available at: <https://marine.gov.scot/data/sectoral-marine-plan-offshore-wind-innovation-and-targeted-oil-and-gas-decarbonisation-intog> (Accessed 19/09/2024)
- ¹⁹ Shefa Ltd (2024) 'The Shefa Network Website'. Available at: <https://www.shefa.co.uk/elbowroom/> (Accessed 19/09/2024)
- ²⁰ Scottish and Southern Electricity Networks (SSEN) (2024a) 'Caithness – Moray HVDC Link'. Available at: <https://www.ssen-transmission.co.uk/projects/project-map/caithness---moray/> (Accessed 19/09/2024)
- ²¹ SSEN (2024b) 'Shetland HVDC Link'. Available at: <https://www.ssen-transmission.co.uk/projects/project-map/shetland/> (Accessed 19/09/2024)
- ²² SSEN (2024c) 'Shetland HVDC Link Striding Forwards'. Available at: <https://www.ssen-transmission.co.uk/news/news--views/2022/4/shetland-hvdc-link-striding-forwards/> (Accessed 19/09/2024)
- ²³ SSEN (2024d) 'Spittal to Peterhead High Voltage Direct Current (HVDC) Link Project'. Available at: <https://www.ssen-transmission.co.uk/globalassets/projects/spittal-to-peterhead/pac-1-documents/spittal--peterhead-hvdc-marine-cable-consultation-booklet.pdf> (Accessed 19/09/2024)
- ²⁴ Repsol Sinopec (2018) 'Beatrice Decommissioning Programmes'. Available at: [https://tethys.pnnl.gov/sites/default/files/publications/Beatrice Decommissioning Programmes.pdf](https://tethys.pnnl.gov/sites/default/files/publications/Beatrice%20Decommissioning%20Programmes.pdf) (Accessed 19/09/2024)

²⁵ Scottish Government (2014) 'Scottish Planning Policy: A Natural, Resilient Place'. Available at: <https://www.gov.scot/publications/scottish-planning-policy/pages/7/> (Accessed 19/09/2024)

²⁶ Scottish Government (2023) 'Draft Energy Strategy and Just Transition Plan'. Available at: <https://www.gov.scot/publications/draft-energy-strategy-transition-plan/pages/5/> (Accessed 19/09/2024)

²⁷ Scottish Parliament (2017) 'The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017'. Available at: <https://www.legislation.gov.uk/uksi/2017/588/contents/made> (Accessed 19/09/2024)

²⁸ UK Parliament (2007) 'The Marine Works (Environmental Impact Assessment) Regulations 2007'. Available at: <https://www.legislation.gov.uk/uksi/2007/1518/contents/made> (Accessed 19/09/2024)

²⁹ Scottish Government (2017) 'Scottish Energy Strategy: The future of energy in Scotland'. Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2017/12/scottish-energy-strategy-future-energy-scotland-9781788515276/documents/00529523-pdf/00529523-pdf/govscot%3Adocument/00529523.pdf> (Accessed 19/09/2024)

³⁰ Scottish Government (2020) 'Sectoral marine plan for offshore wind energy'. Available at: <https://www.gov.scot/publications/sectoral-marine-plan-offshore-wind-energy/pages/2/> (Accessed 19/09/2024)

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