



**Code:** UKCAL-CWF-CON-EIA-RPT-00007-7014

## **Volume 7 Standalone Appendices**

Appendix 16 Caledonia South Outline Offshore Decommissioning Plan

Caledonia Offshore Wind Farm Ltd

5th Floor Atria One, 144 Morrison Street, Edinburgh, EH38EX



# Volume 7 Appendix 16 Caledonia South Outline Offshore Decommissioning Plan

<b>Code</b>	UKCAL-CWF-CON-EIA-RPT-00007-7014
<b>Revision</b>	Issued
<b>Date</b>	18 October 2024

# Table of Contents

1	Introduction .....	1
1.1	Purpose and Scope .....	1
1.2	Objectives .....	1
1.3	Consent Compliance and Legislation .....	1
1.4	Decommissioning Plan Structure .....	2
1.5	Other Relevant Documents .....	2
2	Project Background .....	4
2.1	Overview .....	4
2.2	Caledonia South .....	4
2.3	Designated Sites .....	5
2.4	Landfall Site and Onshore .....	5
2.5	Site Characteristics .....	5
2.6	Future Baseline Environment .....	6
2.7	Other Adjacent Infrastructure and Activities .....	6
3	Decommissioning Approach .....	7
3.1	Decommissioning Options .....	7
3.1.1	Introduction .....	7
3.1.2	Current Selected Option .....	7
3.1.3	Life Extension and Repowering .....	7
3.2	Guiding Principles .....	8
3.3	Offshore Infrastructure to be Decommissioned .....	9
3.3.1	Introduction .....	9
3.3.2	Wind Turbine Generators (WTGs) .....	9
3.3.3	Offshore Substation Platforms (OSPs) .....	9
4	Proposed Decommissioning Measures .....	10
4.1	Method Statement .....	10
4.2	Preparation for Decommissioning .....	10
4.3	Removal of Items for Decommissioning .....	11
4.3.1	WTGs .....	11
4.3.2	Foundations, OSP's and Substructures .....	11
4.3.3	Subsea Cables .....	12
4.4	Protection and Monitoring of the Site .....	12
4.5	Management of Waste .....	12
4.6	Navigation and Lighting .....	13
5	Environmental Impact Assessment .....	14

6	Consultation with Interested Parties .....	15
7	Costs and Financial Security .....	16
8	Schedule.....	17
9	Project Management and Verification .....	18
10	Sea-bed Clearance .....	19
11	Post-Decommissioning Monitoring, Maintenance and Management of the Site .....	20
12	References .....	21

## List of Tables

Table 3-1: Guiding principles. ....	8
Table 3-2: Wind turbine generator design parameters. ....	9
Table 6-1: Interested parties consultation. ....	15
Table 8-1: An indicative summary of key sequencing and approximate durations of decommissioning activities of Caledonia South. ....	17

## Acronyms and Abbreviations

<b>BPEO</b>	Best Practicable Environmental Option
<b>DE</b>	Design Envelope
<b>DP</b>	Decommissioning Plan
<b>EIA</b>	Environmental Impact Assessment
<b>EIAR</b>	Environmental Impact Assessment Report
<b>HRA</b>	Habitats Regulations Appraisal
<b>HVAC</b>	High Voltage Alternating Current
<b>IMO</b>	International Maritime Organization
<b>LAT</b>	Lowest Astronomical Tide
<b>MLWS</b>	Mean Low Water Springs
<b>MPA</b>	Marine Protected Area
<b>NSP</b>	Navigational Safety Plan
<b>OECC</b>	Offshore Export Cable Corridor
<b>OfTi</b>	Offshore Transmission Infrastructure
<b>O&amp;M</b>	Operation and Maintenance
<b>OnTi</b>	Onshore Transmission Infrastructure
<b>OSP</b>	Offshore Substation Platform
<b>OWF</b>	Offshore Wind Farm
<b>REZ</b>	Renewable Energy Zone
<b>SAC</b>	Special Area of Conservation
<b>SEPA</b>	Scottish Environmental Protection Agency
<b>SNCB</b>	Statutory Nature Conservation Body

<b>SPA</b>	Special Protection Area
<b>UK</b>	United Kingdom
<b>UNCLOS</b>	United Nations Convention on the Law of the Sea
<b>WCS</b>	Worst Case Scenario
<b>WTG</b>	Wind Turbine Generator

# 1 Introduction

## 1.1 Purpose and Scope

1.1.1.1 This Outline Offshore Decommissioning Plan (DP) accompanies the Environmental Impact Assessment Report (EIAR) for the Caledonia Offshore Wind Farm (OWF), specifically in relation to Caledonia South. The scope of this Outline Offshore DP applies to the offshore elements of Caledonia South only.

1.1.1.2 Caledonia South has a technical design lifetime of 35 years, and it is assumed that the timing, methods and costs associated with decommissioning will have developed significantly in this time. The purpose of this Outline Offshore DP therefore is to set out the principals, and process that will be followed during decommissioning and finalised post consent.

## 1.2 Objectives

1.2.1.1 This document aims to establish and describe the feasibility and intent of decommissioning. The actual methods, durations and costs remain highly uncertain at this stage. This Outline Offshore DP therefore serves as the framework which will inform the final Offshore DP, completed post-consent, prior to construction, and reviewed before Operation and Maintenance (O&M) and decommissioning phases.

1.2.1.2 The main objectives of the DP are to:

- Provide a high-level overview of offshore elements that make up the scope of Caledonia South decommissioning;
- Explain the principles of the removal activities supported by the Environmental Impact Assessment (EIA), and information to inform the Habitats Regulations Appraisal (HRA);
- Provide information on appropriate measures for the avoidance, minimisation and control of any environmental impacts associated with decommissioning of Caledonia South; and
- Provide sufficient information for a Marine Licence application at the time of decommissioning, assuming the current consenting process is still in place at the time of decommissioning.

## 1.3 Consent Compliance and Legislation

1.3.1.1 The International Maritime Organization (IMO) sets out standards on the removal of offshore installations, including that any infrastructure placed in the marine environment should be designed with full removal in mind, and



that full removal will be the default position for relevant objections unless there are strong reasons for any exception (IMO, 1989<sup>1</sup>).

- 1.3.1.2 This is reflected in United Kingdom (UK) law in Section 105 to 114 of the Energy Act 2004 (as amended) ('the Act') (UK Parliament, 2004<sup>2</sup>), which contains statutory requirements in relation to the decommissioning of either the whole or any part of the offshore installations. The Act provides for decommissioning requirements to apply in territorial and internal waters, as well as to the UK Renewable Energy Zone (REZ) and continental shelf, to which the international conventions under United Nations Convention on the Law of the Sea (UNCLOS) (UN, 1982<sup>3</sup>) and the OSPAR Convention (OSPAR, 1992<sup>4</sup>) apply.
- 1.3.1.3 Further guidance is prepared at the national Scottish level with the Decommissioning of Offshore Renewable Energy Installations in Scottish waters, 2022 or in the Scottish part of the REZ under The Energy Act 2004 (UK Parliament, 2004<sup>2</sup>). This guidance assists businesses in understanding their obligations in decommissioning offshore renewable energy installations in Scotland. This covers information on the geographical scope of decommissioning requirements, the process and expected content of DP's, expected decommissioning standards, financial security information, and the value of industry cooperation and collaboration during the decommissioning phase.
- 1.3.1.4 Following public, stakeholder and regulatory consultation, decommissioning strategy and methods for removal confirmed in the final DP will be submitted in full compliance with all relevant UK legislation at the time they are undertaken and with the Scottish Ministers' guidelines.

## 1.4 Decommissioning Plan Structure

- 1.4.1.1 The DP will be developed in two parts;
- Part 1: This document, the outline version of the Offshore DP, with decommissioning preferences developed with the most recent guidance at the time of writing; and
  - Part 2: The final version of the Offshore DP, confirmed in line with relevant and best practice guidance prior to construction of Caledonia South.

## 1.5 Other Relevant Documents

- 1.5.1.1 Once finalised, post-consent, the Offshore DP will be one of a suite of plans required under the conditions of the Section 36 Consent, and associated Marine Licence for Caledonia South. The full list of final consent plans and associated documents is not currently known, however, several outline plans and other associated documents have been prepared and submitted with the application, these include:

- Caledonia South Outline Offshore Environmental Management Plan (Volume 7, Appendix 12) – This plan detail 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;
- Caledonia South Schedule of Mitigation (Volume 7, Appendix 9) – Various mitigation measures adopted for pre-construction, construction, operation, maintenance and decommissioning;
- Caledonia South Draft Marine Mammal Mitigation Protocol (Volume 7, Appendix 14) – This plan includes appropriate mitigation measures during offshore activities that are likely to produce underwater noise and vibration levels capable of potentially causing injury or disturbance to marine mammals.

## 2 Project Background

### 2.1 Overview

2.1.1.1 In January 2022, as part of the ScotWind leasing round, Ocean Winds UK Ltd. was successfully awarded an Option Agreement granting exclusive rights to develop an OWF within the NE4 Plan Option, which is located within the outer Moray Firth.

2.1.1.2 Ocean Winds is progressing the proposals for Caledonia South, via the newly incorporated limited company of Caledonia Offshore Wind Farm Ltd (the Applicant).

### 2.2 Caledonia South

2.2.1.1 The Caledonia South Site (Array Area) is approximately 204.5km<sup>2</sup> in size with the northern limit being approximately 45km from Wick and the southern limit being approximately 35km from Banff. The depth range of the Caledonia South Site is approximately 52-88m relative to lowest astronomical tide (LAT).

2.2.1.2 A summary of the infrastructure within Caledonia South is provided below:

- Up to 78 Wind Turbine Generators (WTGs) to be installed across the Caledonia South Site using either bottom-fixed foundations only, or a combination of bottom-fixed and floating foundations (with floating foundations, if installed, restricted to the deeper southern part of the site);
- Up to two Offshore Substation Platforms (OSPs) which transform electricity generated by the WTGs to a higher voltage allowing more efficient transmission to shore;
- Inter-array cables which connect the WTGs together;
- An interconnector cable which connects the OSPs to each other; and
- Up to two offshore export cable circuits within the Caledonia South Offshore Export Cable Corridor (OECC) which will be laid between the OSPs and Landfall Site at Stake Ness, west of Whitehills on the Aberdeenshire coast.

2.2.1.3 Caledonia South is planned to be commissioned from the early 2030s with production of electricity is due to cease in 35 years' time from the date of commission.

2.2.1.4 More information on Caledonia South infrastructure can be found in Volume 1, Chapter 3: Proposed Development Description (Offshore).

## 2.3 Designated Sites

- 2.3.1.1 Caledonia South is located in the vicinity of several sites designated for nature conservation. These sites are described and assessed in the relevant sections of the EIAR chapters;
- Volume 4, Chapter 4: Benthic Subtidal and Intertidal Ecology;
  - Volume 4, Chapter 5: Fish and Shellfish Ecology;
  - Volume 4, Chapter 6: Offshore Ornithology; and
  - Volume 4, Chapter 7: Marine Mammals.
- 2.3.1.2 Of note, there is a direct overlap between the Caledonia South OECC and the Southern Trench Nature Conservation Marine Protected Area (MPA), which has been designated for the protection of minke whales, a number of habitats including burrowed mud, fronts and shelf deeps, and several geological features such as moraines and sub-glacial tunnel valleys. An MPA Assessment is provided in Application Document 9.
- 2.3.1.3 Further details about designed sites of relevance to Caledonia South, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), are also available within Application Document 14: Caledonia South Report to Inform Appropriate Assessment.

## 2.4 Landfall Site and Onshore

- 2.4.1.1 The Proposed Development (Onshore) is not covered in this Offshore DP. Refer to Volume 1, Chapter 4: Proposed Development Description (Onshore) for details pertaining to the onshore components and associated activities of the Proposed Development situated above Mean Low Water Springs (MLWS).

## 2.5 Site Characteristics

- 2.5.1.1 These site characteristics have been informed from the various EIAR chapters. Further details on sediment characteristics, seastate and metocean characteristics, geological and geophysical characteristics and ecological habitats and species present in the area can be found in the following chapter baseline sections;
- Volume 4, Chapter 2: Marine and Coastal Processes;
  - Volume 4, Chapter 3: Marine Water and Sediment Quality;
  - Volume 4, Chapter 5: Fish and Shellfish Ecology;
  - Volume 4, Chapter 6: Offshore Ornithology; and
  - Volume 4, Chapter 7: Marine Mammals.

## 2.6 Future Baseline Environment

2.6.1.1 As above, the following site characteristics have been informed from the various EIAR chapters. Further details on future baseline sediment characteristics, seastate and metocean characteristics, geological and geophysical characteristics and ecological habitats and species present in the area can be found in the following chapter future baseline sections:

- Volume 4, Chapter 2: Marine and Coastal Processes;
- Volume 4, Chapter 3: Marine Water and Sediment Quality;
- Volume 4, Chapter 5: Fish and Shellfish Ecology;
- Volume 4, Chapter 6: Offshore Ornithology; and
- Volume 4, Chapter 7: Marine Mammals.

## 2.7 Other Adjacent Infrastructure and Activities

2.7.1.1 Over the lifetime of Caledonia South, adjacent facilities and activities will develop and change. Due to the current uncertainty of Caledonia South during its decommissioning phase, as well as the decommissioning activities associated with other plans and projects (as assessed in Volume 4, Chapter 13: Other Human Activities), a meaningful cumulative assessment cannot be carried out at this time.

## 3 Decommissioning Approach

### 3.1 Decommissioning Options

#### 3.1.1 Introduction

3.1.1.1 This section provides details of the infrastructure that will be decommissioned at the end of Caledonia South’s lifetime.

3.1.1.2 When deciding the best option prior to decommissioning, the Applicant will take into consideration the ‘Best Practicable Environmental Option’ (BPEO) along with commercial viability and Health and Safety Executive risks.

#### 3.1.2 Current Selected Option

3.1.2.1 The current best option for the Offshore DP (Part 1) with the information available is the removal of all structures above the seabed level including WTG and OSP foundations. The Worst-Case Scenario (WCS) if this is not possible, will be to cut foundations at 2m below the seabed. Infrastructure on the seabed including offshore export, inter-array and interconnector cables are currently proposed to be left *in situ*. Further details on this can be found in Section 4.

3.1.2.2 This option has been proposed as the selected option as it expected to result in minimal impacts on the environment. Environmental impacts identified to affect key receptors and environmental sensitivities from decommissioning activities will be similar in nature to those associated with the construction stage although in some cases they are considered to be of a shorter duration and magnitude. Impacts from decommissioning are detailed in the relevant EIAR chapters. Further details on this can be found in Section 5.

3.1.2.3 The decommissioning sequence and method is anticipated to generally be the reverse of the construction sequence and involve similar types and numbers of vessels and equipment. Closer to the time of decommissioning, it may be decided that removal will lead to greater environmental impacts than leaving components in situ, in which case certain components may be cut at or below the seabed (e.g., piles) or left buried (e.g., inter-array, interconnector and offshore export cables).

3.1.2.4 The Applicant has considered the alternative option to decommissioning, with a summary for repowering the project presented below.

#### 3.1.3 Life Extension and Repowering

3.1.3.1 The anticipated operational lifespan of Caledonia South is 35 years. At the end of Caledonia South’s lifespan, there will be an assessment of the

viability for life extension or repowering versus decommissioning (subject to the necessary regulatory consents).

- 3.1.3.2 If life extension or repowering was deemed feasible, an assessment process will be completed at a later stage seeking relevant consents (not included as part of the current EIA/application process).

## 3.2 Guiding Principles

- 3.2.1.1 Decommissioning of Caledonia South will be carried out as soon as reasonably practicable, and no later than the end of the marine licence.
- 3.2.1.2 As part of the decommissioning strategy, the Applicant has sought solutions for all offshore components of the development that comply with the principles as set out in Table 3-1.

Table 3-1: Guiding principles.

Principle	Supporting Information
Health and safety	The Applicant is committed to adhering to the highest standards for health and safety throughout the lifecycle of the OWF. The Applicant seeks to promote safe practices and minimise risk in the development and implementation of decommissioning solutions.
Minimise environmental impact	In considering decommissioning measures, the BPEO will be chosen in order to minimise impact on the environment at an acceptable cost.
Promote sustainable development	The Applicant will seek to ensure that, as far as is reasonably practicable, future generations do not suffer from a diminished environment or from a compromised ability to make use of marine resources.
Adhere to the Polluter Pays Principle	The Applicant acknowledges responsibility for decommissioning and waste management provisions and costs associated with their impact on the environment.
Adhere to the Waste Framework Hierarchy	The Applicant will reduce amount to landfill, repurpose and recycle as much decommissioning material as reasonably practicable.
Practical Integrity	Solutions that are necessary to achieve one or more of the above principles must be practicable.
Rights of other maritime users	The Applicant respects the rights and needs of other users of the seabed. Decommissioning activities will seek to minimise the impact on stakeholders and emphasis will be placed on clear, open communication.

### 3.3 Offshore Infrastructure to be Decommissioned

#### 3.3.1 Introduction

3.3.1.1 This section provides details of the infrastructure that will be decommissioned at the end of Caledonia South’s lifetime. Section 4 sets out the procedure by which the decommissioning works will take place. Further information on the design envelope for WTGs, OSPs and cables can be found in Volume 1, Chapter 3: Proposed Development Description (Offshore).

#### 3.3.2 Wind Turbine Generators (WTGs)

3.3.2.1 Caledonia South will comprise up to 78 WTGs, comprised of the following types as shown in Table 3-2. As WTG technology is constantly evolving, the final model(s) of WTG to be used for Caledonia South will be selected post-consent. Therefore, a range of WTG options and associated dimensions are being considered against which the environmental impacts have been assessed.

Table 3-2: Wind turbine generator design parameters.

Design Parameters	Caledonia South
Foundation type	Bottom-fixed only, of combination of bottom-fixed and floating
Maximum number of WTGs	78, including up to 39 floating (assumes remaining composition bottom-fixed up to a combined total of 78)

#### 3.3.3 Offshore Substation Platforms (OSPs)

3.3.3.1 A maximum of two HVAC OSPs will be required for Caledonia South. The OSPs will house electrical transmission equipment which transform electricity generated by the WTGs to a higher voltage and thereby allowing the power to be efficiently exported to the onshore NETS. The location of the OSPs is not yet determined. The OSP consists of a ‘topside’ platform supported by a bottom-fixed foundation.



## 4 Proposed Decommissioning Measures

### 4.1 Method Statement

4.1.1.1 For the purposes of this methodology, assumptions have been made on the availability of specialist tools and the capacity of the vessels used for decommissioning. The selected approach acknowledges the preferences stated in the most recent guidance at the time of writing, including the Scottish Government's Guidance for the Decommissioning of Offshore Renewable Energy Installations in Scottish Waters (Scottish Government, 2022<sup>5</sup>).

4.1.1.2 When determining the most appropriate methods for decommissioning, the Applicant has considered the following, alongside the Guiding Principles (Section 3.2):

- Relevant legislation and policy;
- Best practicable environmental option for all elements of the EIAR;
- Safety of surface and subsurface navigation;
- Other maritime users;
- Health and safety considerations; and
- Costs.

4.1.1.3 The mitigation strategy helping to define the decommissioning methods of Caledonia South will follow Volume 7, Appendix 9: Caledonia South Schedule of Mitigation.

4.1.1.4 The following decommissioning method has been separated into three parts:

- Preparation;
- Removal; and
- Protection.

### 4.2 Preparation for Decommissioning

4.2.1.1 Preparation of the WTGs will result in debris, items and fluids that will need to be cleared away from the unit before removal can commence. Removal of items on the seabed will likely follow that of construction.

4.2.1.2 All hazardous substances and fluids will be removed from the WTGs (such as oil reservoirs and any hazardous materials or components). These hazardous substances and fluids will be disposed of in accordance with the relevant regulations in force at the time of disposal. All components with hazardous fluids will be treated with care to minimise risk of spillage.

- 4.2.1.3 Specific work tasks are unknown at this stage but will be defined in Part 2 of the Offshore DP, once design and consent has been obtained.

## 4.3 Removal of Items for Decommissioning

### 4.3.1 WTGs

- 4.3.1.1 With a maximum of 78 turbines as part of Caledonia South, upon commencing the decommissioning phase, the WTGs will be de-energised and isolated from the National Electricity Transmission System. Suitable Heavy Lifting Vessels will be mobilised to the site and will begin removing key components of the WTGs including blades, all tower/nacelle internal cables, control and communication cables, the nacelle and generator, and finally dismantle the tower. These components will be transported to an onshore facility for processing.

- 4.3.1.2 Steel components are expected to be sold for scrap to be recycled, noting these forms the bulk of the WTG structures. The WTG blades, made predominantly of fibreglass, will be disposed of in accordance with the relevant regulations in force at the time of decommissioning.

### 4.3.2 Foundations, OSP's and Substructures

- 4.3.2.1 The WCS is likely that pile foundations will likely be cut approximately 2m below the seabed, with due consideration made of likely changes in seabed level and removed. This could be achieved by inserting pile cutting devices. Once the piles are cut, the substructures be lifted and removed from the site. This will be consulted on prior to the finalisation of the Offshore DP.

- 4.3.2.2 The method for removal of foundations is dependent on the type of foundation used. As detailed above, it is assumed that bottom-fixed WTG's will have monopile, fully-restrained platform, jacket with pin pile or jacket with suction caisson foundations, and floating WTG's will have tension leg or semi-submersible platform foundations with anchors.

- 4.3.2.3 The Applicant will endeavour to remove all subsea infrastructure, including scour and cable protection, at the point of decommissioning. However, in order to preserve the marine habitat that has become established over the operational life of Caledonia South, it may be preferable to leave any scour or cable protection around substructures or covering cables *in situ*.

- 4.3.2.4 If it is considered preferable to remove the scour protection, this could be achieved using a range of possible techniques, such as dredging, grabs to remove individual boulders or use of cranes to lift material from the seabed (e.g., concrete mattresses or cable protection systems). All scour or cable protection materials recovered will be subject to the waste hierarchy (i.e., consideration of alternatives to disposal such as re-use and recycling).

- 4.3.2.5 At this time, it is not thought to be reasonably practicable to remove entire piles from the seabed, but endeavours will be made to ensure that the sections of pile that remain in the seabed are fully buried.

### 4.3.3 Subsea Cables

- 4.3.3.1 At this time, it is assumed that buried offshore export, inter-array and interconnector cables are likely to remain *in situ*, and to remain buried for navigational purposes. However, it is unknown at this stage. The intention is that dynamic cabling associated with floating foundations (above seabed) will be removed.

## 4.4 Protection and Monitoring of the Site

- 4.4.1.1 The Applicant will implement arrangements for monitoring, maintenance and management of the decommissioned site and any remains of foundations and cables that exist. It is unknown as to what the monitoring program will look like at present, however it will be adapted with time, and any mitigation related monitoring will be followed as per the Volume 7, Appendix 9: Caledonia South Schedule of Mitigation.
- 4.4.1.2 Given the nature of the decommissioning activities, which will largely be a reversal of the construction/installation process, the impacts and therefore monitoring requirements during decommissioning are expected to be similar to or less than those assessed for the construction stage.
- 4.4.1.3 Monitoring reports will be submitted to Scottish Government, together with proposals for any maintenance or remedial work that may be shown to be required over the decommissioning strategy period.

## 4.5 Management of Waste

- 4.5.1.1 The Applicant commits to following the principles of the waste hierarchy during decommissioning of Caledonia South, along with all relevant legislation at the time.
- 4.5.1.2 The types and volume of waste materials associated with decommissioning of Caledonia South are unknown at this stage. The Applicant however accepts responsibility of waste material from the moment it is produced to the point of delivery to a business that is authorised to accept and deal with it.
- 4.5.1.3 Post consent and prior to construction, the Applicant will produce a Waste Management Plan which will define waste management measures for Caledonia South to minimise, recycle, reuse and eventually dispose of waste material in relation to the Waste Framework Hierarchy and in compliance with relevant legislation. This plan will include construction, operation and maintenance, and decommissioning stages of Caledonia

South, and overall reduce the amount of material going to landfill as reasonably practicable.

4.5.1.4 It is unknown if any materials from Caledonia South are likely to be reused at sea.

4.5.1.5 Waste management measures will also be aligned to the Applicants sustainability policy.

## **4.6 Navigation and Lighting**

4.6.1.1 A Navigational Safety Plan (NSP) will describe measures put in place by Caledonia South related to navigational safety, including information on Safety Zones, charting, construction buoyage, temporary lighting and marking, and means of notification of activity to other sea users (e.g., via Notice to Mariners) during decommissioning.

4.6.1.2 The Applicant will endeavour to remove all subsea infrastructure, however where marine habitat has established on this infrastructure then the Applicant may, in agreement with the relevant authorities, decide to leave in situ. This will then be dealt with as appropriate to ensure safety of navigation, which will be covered in the Navigational Safety Plan once decommissioning commences.

## 5 Environmental Impact Assessment

- 5.1.1.1 The EIAR chapters submitted to support the consent application for Caledonia South have considered the environmental impact upon key receptors and environmental sensitivities from decommissioning activities. The impacts identified were similar in nature to those associated with the construction stage although in some cases they were considered to be of a shorter duration and magnitude. Impacts from decommissioning are detailed in section heading 'Potential Effects' of relevant EIAR chapters.
- 5.1.1.2 Mitigation measures suggested to be followed are as per the Volume 7, Appendix 9: Caledonia South Schedule of Mitigation.
- 5.1.1.3 Consistent with the commitment to undertake reviews of the decommissioning programme, the Applicant propose that the EIAR will be reviewed and updated three years prior to decommissioning occurring in accordance with the Scottish Government's Decommissioning Guidance for Scottish Waters Guidance (Scottish Government, 2022<sup>5</sup>). Surveys may be required to inform any assessment undertaken. Results from the surveys will be provided to relevant bodies allowing sufficient time for consultation to take place (unless agreed otherwise in consultation with regulators and Statutory Nature Conservation Bodies (SNCBs)). These surveys are likely to take place a year prior to decommissioning and will inform any assessment undertaken. Results from the surveys will be provided to relevant bodies allowing sufficient time for consultation to take place (unless agreed otherwise in consultation with regulators and SNCBs).
- 5.1.1.4 Based on the results of any surveys that may be undertaken, a decision will be made on how detailed an assessment is required. This will be based on the final decommissioning strategy and identification and assessment of potential impact on the environment.
- 5.1.1.5 Consultation with key stakeholders will occur to determine the level of detail required in the environmental assessment and whether any further surveys are required prior to decommissioning.
- 5.1.1.6 As the Offshore DP develops, this section will be updated with any revised EIA outcomes in Part 2 of the Final Offshore DP nearer the actual time of decommissioning, as appropriate.

## 6 Consultation with Interested Parties

- 6.1.1.1 The consultation process employed for decommissioning will follow that of the Section 36 where consultation with stakeholders is an essential element to the successful development of Caledonia South which has been followed throughout the EIAR, with open consultation and transparency of information.
- 6.1.1.2 The Applicant intends to continue with this approach for the lifetime of Caledonia South, including the decommissioning phase.
- 6.1.1.3 Consultation will be undertaken in the years preceding decommissioning on both the programme and any environmental assessment undertaken, in order to minimise the impact on the environment and stakeholders.
- 6.1.1.4 The Applicant will seek the opinions of the following organisations (or their equivalent) identified in Table 6-1 for drafting and reviewing the decommissioning programme prior to decommissioning. This table will be updated for Part 2 of the Offshore DP.

Table 6-1: Interested parties consultation.

Interested Party	Comment	Action Taken
Scottish Fishermen's Federation	TBC – post consent	TBC – post consent
NatureScot	TBC – post consent	TBC – post consent
Scottish Environmental Protection Agency (SEPA)	TBC – post consent	TBC – post consent
Historic Environment Scotland	TBC – post consent	TBC – post consent
The Maritime and Coastguard Agency	TBC – post consent	TBC – post consent
Public (Including individuals, community councils, businesses and local organisations)	TBC – post consent	TBC – post consent
Crown Estate Scotland	TBC – post consent	TBC – post consent
Scottish Government departments	TBC – post consent	TBC – post consent

## **7 Costs and Financial Security**

- 7.1.1.1 Required financial information including costs and financial security will be determined by the final design of Caledonia South and the technologies selected. This information will be provided in a separate annex prior to finalisation.

## 8 Schedule

- 8.1.1.1 The decommissioning activities are expected to take a similar duration as the construction and pre-construction programme.
- 8.1.1.2 A full decommissioning schedule will be provided in Part 2 of the Final Offshore DP. However, an indicative schedule has been produced and can be found in and Table 8-1.

Table 8-1: An indicative summary of key sequencing and approximate durations of decommissioning activities of Caledonia South.

Activity	Estimated Duration (Months)
Offshore export cable termination	3
Tow floating WTGs to harbour	10
Removal of WTGs (bottom-fixed)	8-12
Removal of dynamic/floating inter-array cables	8-9
Removal of OSPs (bottom-fixed)	4-5
Removal of foundation anchor (floating)	22
Removal of foundation substructures (bottom-fixed)	7-9
Removal of piling/anchors (e.g., monopiles, jacket pin piles, fully-restrained platform, tension leg or semi-submersible anchors)	9-18



## 9 Project Management and Verification

- 9.1.1.1 This section will be provided in the Final Offshore DP when assumptions and considerations have been consulted and confirmed based on the final decommissioning options.
- 9.1.1.2 Management roles and responsibilities will be confirmed post-consent.

## 10 Sea-bed Clearance

- 10.1.1.1 In line with the guiding principles, the Applicant is committed to covering the costs required to decommission Caledonia South (in line with the Polluter Pays Principle) and ensuring the seabed has been cleared of the development as far as reasonably practicable.
- 10.1.1.2 Upon completion of decommissioning, a survey will be undertaken to ensure that all debris has been removed, where required, similar to that of construction. The survey will enable identification and recovery of any debris located on the seabed which may have arisen from activities related to Caledonia South and which may pose a risk to navigation.
- 10.1.1.3 The required survey area will be determined during the decommissioning phase of Caledonia South taking into account best practice at the time and the views of stakeholders. It is anticipated that the survey area will focus around the Array Area (i.e., WTG and OSP locations) as it is assumed that inter-array and export cables will be left *in-situ*.
- 10.1.1.4 Discussions will also occur on the requirement for independent, third-party involvement in the surveys to provide evidence that the site had been cleared. It is likely that an independent party will conduct the surveys and provide an independent report on the findings.

# 11 Post-Decommissioning Monitoring, Maintenance and Management of the Site

- 11.1.1.1 As Caledonia South is not proposing to fully remove all installations, some post decommissioning activities and long term monitoring may be required to identify and mitigate any unexpected risks to navigation or other users of the sea which may be posed by remaining materials (i.e., foundations and cables that may have become exposed due to natural sediment dynamics).
- 11.1.1.2 As the Offshore DP has not been confirmed yet, the full scale of the monitoring program is unknown. The level of post decommissioning activities will be determined based on the scale of the remaining infrastructure, the risk of exposure, the risk to marine users and any results from surveys undertaken.
- 11.1.1.3 However, it is likely that these will focus on the cables and foundations below the seabed as these will remain *in situ* following decommissioning, and the programme will adapt over time if deemed appropriate and agreed to by the Scottish Ministers.
- 11.1.1.4 Details of the post-decommissioning monitoring, maintenance and management will be discussed and agreed with stakeholders during decommissioning.

## 12 References

<sup>1</sup> International Maritime Organization (IMO) (1989) 'Guidelines and standards for the removal of offshore installations and structures on the continental shelf and in the exclusive economic zone'. Available at:

[https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.672\(16\).pdf](https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.672(16).pdf) (Accessed 08/08/2024)

<sup>2</sup> UK Parliament (2004) 'Energy Act 2004'. Available at:

<https://www.legislation.gov.uk/ukpga/2004/20/contents> (Accessed 08/08/2024)

<sup>3</sup> United Nations (1982) 'United Nations Convention on the Law of the Sea'. Available at:

[https://www.un.org/depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf) (Accessed 08/08/2024)

<sup>4</sup> OSPAR (1992) 'The OSPAR Convention'. Available at:

<https://www.ospar.org/convention/text> (Accessed 08/08/2024)

<sup>5</sup> Scottish Government (2022) 'Offshore renewable energy: decommissioning guidance for Scottish waters'. Available at: <https://www.gov.scot/publications/offshore-renewable-energy-decommissioning-guidance-scottish-waters/> (Accessed 29/08/2024)

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

[www.caledoniaoffshorewind.com](http://www.caledoniaoffshorewind.com)

