



# White Cross Offshore Wind Farm: Outline Entanglement Monitoring and Remediation Plan

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## Glossary of Acronyms

<b>Acronym</b>	<b>Definition</b>
<b>AEZ</b>	Archaeological Exclusion Zone
<b>ADBA</b>	Archaeological Desk Based Assessment
<b>ADDs</b>	Acoustic Deterrent Devices
<b>ASCOBANS</b>	Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas
<b>BDMLR</b>	British Divers Marine Life Rescue
<b>ECT</b>	Environment and Consent Team
<b>EPS</b>	European Protected Species
<b>ES</b>	Environmental Statement
<b>IWC</b>	International Whaling Commission
<b>JNCC</b>	Joint Nature Conservancy Council
<b>KOW</b>	Kincardine Offshore Windfarm
<b>OSPAR</b>	Oslo and Paris Convention for the Protection of the Marine Environment 1992
<b>SAC</b>	Special Area of Conservation
<b>WTG</b>	Wind Turbine Generator

## 1. Introduction

1. This document has been produced in response to the following request made by Natural England during the statutory consultation on marine licence application MLA/2023/00113 for White Cross Offshore Windfarm (WCOW):

*'...Prior to consent Natural England requests to see a Project Environmental Monitoring Plan to address our concerns which should clearly state how entanglement will be monitor[ed] and reported. Furthermore, owing to the uncertainties in the design envelope and construction procedures, entanglement should be considered in the Construction Environmental Monitoring Plan and reviewed by relevant Statutory Nature Conservation Bodies (SNCBs) prior to construction.'*

### 1.1 Purpose and scope of the Outline Entanglement Monitoring and Remediation Plan

2. The purpose of the Outline Entanglement Monitoring and Remediation Plan (OEMRP) at this pre-consent stage is to outline the proposed approach to monitoring and remediation of entangled marine mammals, marine turtles and marine debris during the construction and operation of the proposed WCOW. The requirements for consultation and updates to the OEMRP are also set out, as are the personnel requirements and proposed reporting details.

### 1.2 National and international protection of marine mammals and marine turtles

3. Table 1-1 provides an overview of the relevant national and international legislation that affords protection to marine mammals and marine turtles in the UK.

*Table 1-1 Summary table for national and international legislations relevant for marine mammals*

Legislation	Level of Protection	Species Included	Details
<b>The Berne Convention 1979</b>	International	All cetaceans, grey seal and harbour seal  All marine turtle species	The Convention conveys special protection to those species that are vulnerable or endangered. Appendix II (strictly protected fauna): 19 species of cetacean. Appendix III (protected fauna): all remaining cetaceans, grey and harbour seal. Although an international convention, it is implemented within the UK through the Wildlife and Countryside Act 1981 (with any

Legislation	Level of Protection	Species Included	Details
			aspects not implemented via that route brought in by the Habitats Directive).
<b>The Bonn Convention 1979</b>	International	All cetaceans  All marine turtle species	Protects migratory wild animals across all, or part of their natural range, through international co-operation, and relates particularly to those species in danger of extinction. One of the measures identified is the adoption of legally binding agreements, including ASCOBANS.
<b>Oslo and Paris Convention for the Protection of the Marine Environment 1992 (OSPAR)</b>	International	Bowhead whale <i>Balaena mysticetus</i> , northern right whale <i>Eubalaena glacialis</i> , blue whale <i>Balaenoptera musculus</i> , and harbour porpoise	OSPAR has established a list of threatened and/or declining species in the North East Atlantic. These species have been targeted as part of further work on the conservation and protection of marine biodiversity under Annex V of the OSPAR Convention. The list seeks to complement, but not duplicate, the work under the EC Habitats and Birds directives and measures under the Berne Convention and the Bonn Convention.
<b>Convention on Biological Diversity (CBD) 1993</b>	International	All marine mammal species	Requires signatories to identify processes and activities that are likely to have impacts on the conservation of and sustainable use of biological diversity, inducing the introduction of appropriate procedures requiring an EIA and mitigation procedures.
<b>The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017</b>	National	All cetaceans, grey and harbour seal  All marine turtle species	'The Habitats Regulations 2017'.  Provisions of The Habitats Regulations are described further in <b>Chapter 12: Marine Mammal and Marine Turtle Ecology</b> . It should be noted that the Habitats Regulations apply within the territorial seas and to marine areas within UK jurisdiction, beyond 12 nautical miles (nm).

Legislation	Level of Protection	Species Included	Details
<b>The Wildlife and Countryside Act 1981 (as amended)</b>	National	All cetaceans  All marine turtle species	<p>Schedule five: all cetaceans are fully protected within UK territorial waters. This protects them from killing or injury, sale, destruction of a particular habitat (which they use for protection or shelter) and disturbance.</p> <p>Schedule six: Short-beaked common dolphin, bottlenose dolphin and harbour porpoise; prevents these species being used as a decoy to attract other animals. This schedule also prohibits the use of vehicles to take or drive them, prevents nets, traps or electrical devices from being set in such a way that would injure them and prevents the use of nets or sounds to trap or snare them.</p>
<b>Conservation of Seals Act 1970 (as amended)</b>	National	Grey and harbour seal	<p>As of 1<sup>st</sup> March 2021, a person commits an offence if they intentionally or recklessly kill, injure or take a seal.</p> <p>The legislative changes in England and Wales, amends the Conservation of Seals Act 1970, prohibiting the intentional or reckless killing, injuring or taking of seals and removing the provision to grant licences for the purposes of protection, promotion or development of commercial fisheries or aquaculture activities. These changes were enacted to ensure compliance with the US Marine Mammal Protection Act Import Provision Rule.</p>

### 1.3 Protected species and marine wildlife licence guidance

4. All cetacean species are listed as European Protected Species (EPS) under The Conservation of Habitats and Species Regulations 2017, and the Conservation of Offshore Marine Habitats and Species Regulations 2017 ('the Regulations'). They are therefore protected from the deliberate killing (or injury), capture and disturbance throughout their range. Under these Regulations, it is an offence to:
- Deliberately capture, injure or kill any cetacean species
  - To deliberately disturb them
  - To damage or destroy a breeding site or resting place.

5. The JNCC, Natural England and the Countryside Council for Wales have produced guidance<sup>1</sup> concerning the Regulations on the deliberate disturbance of marine EPS, which provides an interpretation of the regulations in greater detail.
6. For the purposes of marine users, the draft guidance states that a disturbance which can cause offence should be interpreted as:

*"Disturbance which is significant in that it is likely to be detrimental to the animals of an EPS or significantly affect their local abundance or distribution".*

7. JNCC *et al.* (2010) state that:

*"In any population with a positive rate of growth, or a population remaining stable at what is assumed to be the environmental carrying capacity, a certain number of animals can potentially be removed as a consequence of anthropogenic activities (e.g. through killing, injury or permanent loss of reproductive ability), in addition to natural mortality, without causing the population to decrease in numbers, or preventing recovery, if the population is depleted. Beyond a certain threshold however, there could be a detrimental effect on the population".*

8. Grey seals are protected in the UK under the Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017, as well as Conservation of Seals Act 1970.
9. All marine turtles recorded in the UK and Ireland are entitled to a range of legal protection. They are listed on Appendix I of CITES, Appendix I and II of the Bonn Convention and Appendix II of the Bern Convention. All species are protected by the Wildlife and Countryside Act 1981 (as amended), Conservation of Habitats and Species Regulations 2010 in England and Wales and are an EPS.
10. The United Kingdom Turtle Code (Marine Conservation Society, 2011) has been developed to provide advice for all sea users on how to deal with marine turtle encounters and all sea users are strongly encouraged to report sightings.

### **1.3.1 Marine Wildlife Licence Requirements**

11. The MMO have advised that a Marine Wildlife Licence should be considered as risks of injury and killing have been identified for the operation of WCOWL. If required, a Marine Wildlife Licence application will be submitted post-consent. At that point in

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<sup>1</sup><https://jncc.gov.uk/our-work/marine-mammals-and-offshore-industries/>



time, detailed design will have been further refined providing more detail on the mitigation and monitoring measures that will be in place.

12. If a licence is required, an application must be submitted, the assessment of which comprises three tests, namely:

- Whether the activity falls within one of the purposes specified in Regulation 55 of the Habitats Regulations.
  - Only the purpose of “preserving public health or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment” is of relevance to marine mammals in this context.
- That there are no satisfactory alternatives to the activity proposed (that would not incur the risk of offence)
- That the licensing of the activity will not result in a negative impact on the species/ population’s Favourable Conservation Status.

13. A Marine Wildlife Licence would consider all marine mammal species and marine turtles at potential risk of injury or killing.

14. There is no legislation that requires seals to be included under a Marine Wildlife Licence; disturbance is not an offence under the Conservation of Seals Act 1970, and in the case of injury to seals, the MMO is only able to grant licences under very specific circumstances as listed under Section 10(1) of the Conservation of Seals Act 1970.

## 1.4 Document structure

15. The proposed approach to updating the OEMRP and ensuring effective consultation is set out in Section 2: however, it has not been consulted on at this ‘outline’ stage.

16. Section 3 provides a brief background to the Project’s construction and operational entanglement risks. It also lists commitments made by the Project related to entanglement, as presented in Table 12.15 of Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore Environmental Statement (ES) (document reference FLO-WHI-REP-0002-12) and the Project Mitigations Register (WHX001-FLO-CON-ENV-REG-0001).

17. The proposed approach to monitoring entanglement is presented in Section 4 and the proposed approach to remediation of entangled individuals or snagged material is presented in Section 5. Both sections include proposed methodologies and reporting details.

18. Finally, Section 6 outlines the personnel responsible for ensuring compliance with the OEMRP and descriptions of the required roles.

## 2. Approach to updating the OEMRP

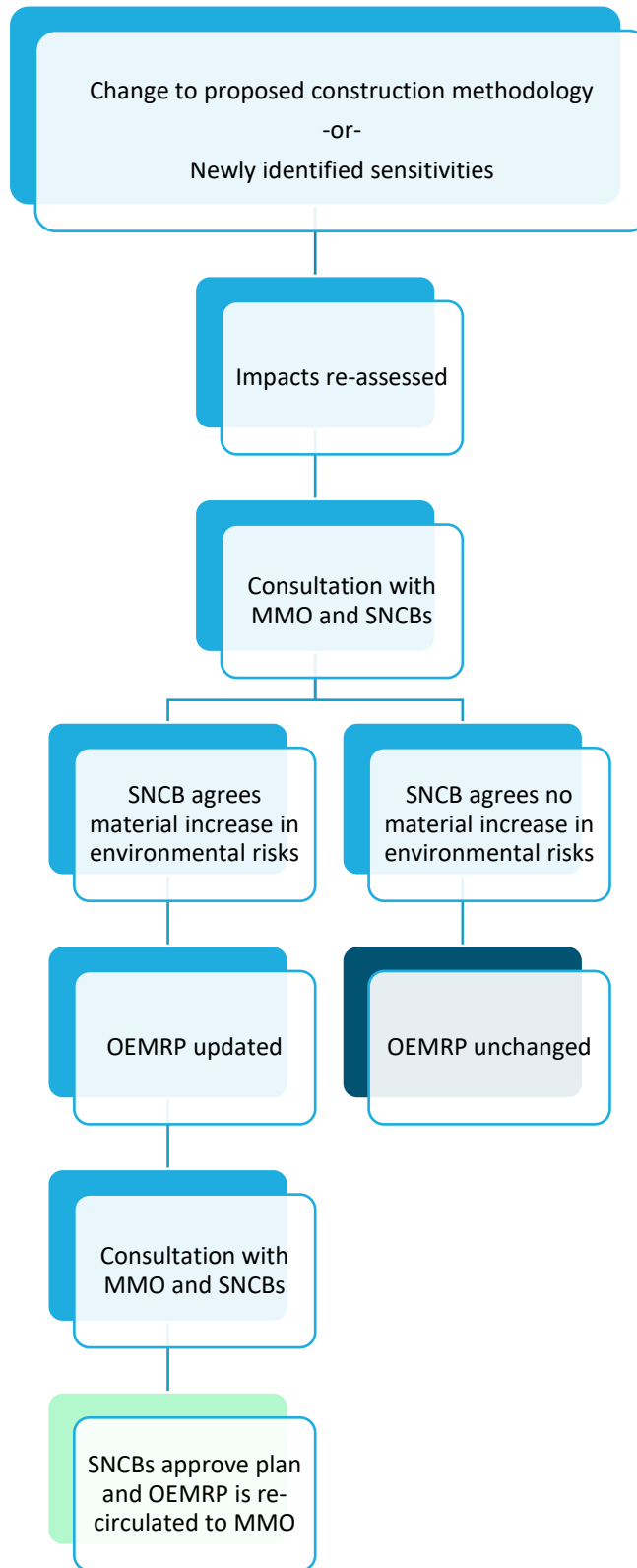
19. The OEMRP will be revised and updated as the project progresses to construction and operation, and as further information becomes available following decisions on final project design. For example, updates to the OEMRP may be required due to:

- changes to the proposed construction methodology that require additional management measures.
- changes to management measures already proposed.
- emergence of novel data collection technologies (i.e., autonomous data collection).
- identification of new environmental sensitivities.
- emerging guidance.
- new legislative requirements.
- lessons learnt from an entanglement event<sup>2</sup>.

20. Updates are also likely to be required following review by the relevant SNCBs, in consultation with the MMO. Initially, these updates are expected to be required at regular intervals during the 'outline' plan phase (i.e., during the consenting and pre-construction phases). Beyond this phase, the approach to updating the OEMRP will revert to the Change Management Process, as outlined in Figure 2-1.

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<sup>2</sup> N.B. To date, no entanglement events have been recorded at a floating offshore windfarm or FPSO vessels in the UK.



*Figure 2-1 OEMRP Change Management Process*

## 2.1 Consultation

21. The off-site WCOW Environment and Consents Team (ECT) are responsible for managing consultation on the OEMRP with the relevant consultees.
22. Statutory consultation on the OEMRP took place in March 2024 when the first version was shared with the MMO. Appendix 1 details the MMO's consultation comments and how WCOWL has addressed these.
23. Non-statutory consultation on the OEMRP with the British Divers Marine Life Rescue (BDMLR) also took place in March 2024 (via an online meeting). Primarily the reason for this consultation was to gain agreement on the inclusion of the BDMLR as responders or leaders of remediation efforts.
24. The BDMLR confirmed that the NOAA guidance (as described in Section 5.2) is appropriate to use and that they are content to be named as the main responder/lead organisation of the marine mammal disentanglement remediation efforts. This is because they are the only organisation in Europe with a Large Whale Disentanglement Team (national team) which holds experience of rescuing large whales (e.g., humpbacks, minke, sperm whales). The BDMLR also holds local team rescue experience with dolphins and porpoises.
25. This section will be further updated to summarise comments on this document as consultation progresses.

## 3. Project entanglement risks

26. Entanglement is the potential risk of marine mammals and marine turtles becoming caught within Wind Turbine Generator (WTG) mooring lines and dynamic cables as a primary cause; as a secondary cause, becoming caught in fishing gear that has first become caught within WTG mooring lines and dynamic cables; and as a tertiary cause the potential risk of marine animals, who are trailing fishing gear, to swim in close proximity to the subsea infrastructure, allowing the trailing gear to become entangled. Entangled animals may drown, asphyxiate, starve, suffer exhaustion, physical trauma or infections from the equipment which can cause bodily damage<sup>3</sup>.
27. The subsea infrastructure for WCOW includes a maximum of 48 WTG mooring lines (up to six per WTG, with a maximum of eight WTGs). The mooring lines will be either catenary, taut, or semi-taut (see **Figure 3-1**), and comprised of anchor chain,

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<sup>3</sup> <https://www.fisheries.noaa.gov/insight/entanglement-marine-life-risks-and-response>

mooring cables or polyester mooring line. The catenary option is the worst-case scenario for entanglement risk which has a maximum mooring line length of 760m; therefore, it was this option that was used in the entanglement assessment presented in Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore ES (document reference FLO-WHI-REP-0002-12). The mooring lines will be between 175mm and 300mm in diameter, depending in the type of mooring and material used. A full description of the Mooring System options is presented in Section 5.4.5 of Chapter 5: Project Description of the Offshore ES (document reference FLO-WHI-REP-0002-05).

28. It is expected that the full length of each mooring line will be suspended in the water column, with temporary surface buoys used during construction. See Figure 12.27 of Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore ES (document reference FLO-WHI-REP-0002-12) for an example of each of these mooring systems, and Section 5.4.6 of Chapter 5: Project Description of the Offshore ES (document reference FLO-WHI-REP-0002-05) for further detail on each of these types of mooring lines.
29. There will also be up to ten dynamic inter-array cables. The dynamic section of each cable will be freely suspended in the water column in a lazy wave configuration, with buoyancy modules attached to the mid-portion of the cable, creating a midwater arch. See Figure 12.28 of Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore ES (document reference FLO-WHI-REP-0002-12) for an example of the dynamic cable system, and Section 5.5.1 of Chapter 5: Project Description of the Offshore ES (document reference FLO-WHI-REP-0002-05) for further detail.
30. Following consultation on the OEMRP, WCOWL are investigating the feasibility of 'tethering' inter-array cables to reduce the water column area that poses an entanglement risk.
31. The worst-case scenario for entanglement is during the operational and maintenance phase of the Project due to the length of time the structures will be in place, creating a higher probability of receptors becoming caught within the WTG mooring lines and dynamic cables. However, there is the potential for a short period of time within the construction period where the WTGs will be installed before the operational period commences, and therefore a short period of time where there may be a risk of entanglement to marine mammals and marine turtles. Entanglement during the construction period is therefore a temporary risk, while entanglement during the operational phase is a long-term risk.

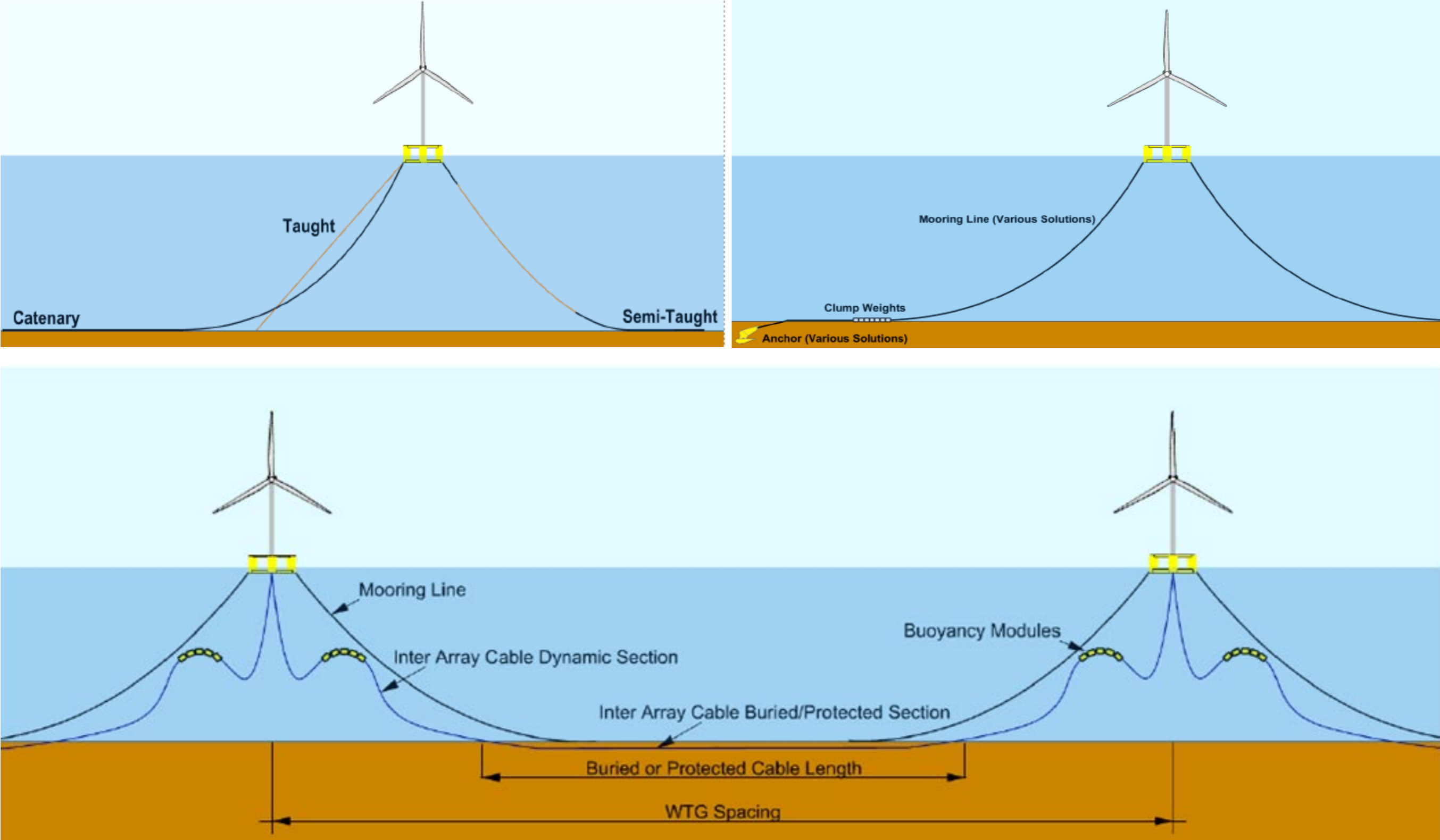


Figure 3-1 Possible mooring configurations

32. Despite the entanglement risk that discarded or lost fishing gear poses to cetaceans and seals (Mghili et al., 2023; Allen et al., 2012) no recorded evidence of instances of marine mammal or marine turtle entanglement in the mooring systems of renewable devices in the UK has been found (specifically at Kincardine Offshore Windfarm (KOW) or Hywind Scotland – both floating offshore windfarms in Scotland). Nor has there been for anchored floating production storage offloading (FPSO) vessels in the oil and gas industry, which use similar mooring lines. However, WCOWL acknowledge the uncertainty in the reporting requirements for KOW, Hywind Scotland and FPSO vessels, also acknowledging that these conclusions are made through lack of evidence rather than a confidence in the lack of incidence. Therefore, the potential for these lines and cables to present hazards for marine animals that may become entangled or entrapped in them, or confused by their presence remains an issue of uncertainty (Garavelli, 2020; Farr et al., 2021; Maxwell et al., 2022).
33. Discarded fishing gear, or ‘ghost gear’ can act as an attractor to fish species, and therefore attract larger marine species such as marine mammals and marine turtles (Filmlalter et al. 2013; Wilcox et al. 2013). Entanglement in ghost gear is one of the key threats to marine turtles and seals (Allen et al., 2012), however, there is little information on entanglement rates and the potential effect to marine turtle populations (Duncan et al., 2017). The review found that an average of 5.5% of all stranded marine turtle species were entangled, and the majority of which were due to ghost fishing gear. The Cornwall Seal Research Trust<sup>4</sup> report that the stranding rate of southwest UK seals (harbour or grey) for the years 2011-2022 is between 2-4%.
34. Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore ES (document reference FLO-WHI-REP-0002-12) assessed the risk of entanglement (primary, secondary and tertiary) for harbour porpoise, bottlenose dolphin, common dolphin, striped dolphin, grey seal and leatherback turtle only. This is because these were the key species identified in the site-specific monthly surveys<sup>5</sup> (see **Section 12.3.9.1** of FLO-WHI-REP-0002-12 **Chapter 12: Marine Mammal and Marine Turtle Ecology** of the Offshore Environmental Statement (ES) for further information). However, this plan also applies to harbour seal given the anecdotal evidence that

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<sup>4</sup><http://www.cornwallsealgroup.co.uk/>

<sup>5</sup>high resolution aerial digital still imagery including a 4km buffer, with a total survey area of 336km<sup>2</sup>. Conducted over a 24 month period between July 2020 and June 2022 via a grid based design, with 1.4km spaced transects across the Windfarm Site and buffer at a height of approximately 395m above sea level.

they are present in the area, albeit in low densities<sup>6</sup> and that they are protected under both national and international legislation as detailed in **Section 1: Introduction**.

35. Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore ES (document reference FLO-WHI-REP-0002-12) assessed the risk of entanglement for all species except minke whale as negligible to minor adverse significance; for minke whale the risk was assessed as negligible to moderate adverse significance. This is because it is likely that the presence of the wind farm infrastructure would provide marine mammals greater opportunity to detect (and avoid) any fishing gear that may be present in the area and caught on the subsea infrastructure. Tertiary entanglement is considered to be unlikely given that the Windfarm Site is neither an area of high fishing nor high species density.
36. The WCOWL Habitats Regulations Assessment concluded that there would be no adverse effect on site integrity (i.e., on the conservation objectives of the Bristol Channel Approaches Special Area of Conservation (SAC), Lundy SAC, Pembrokeshire Marine SAC or Cardigan Bay SAC) as a result of entanglement risk. This is because the Windfarm Site is not located on any known migration routes or within any known key foraging areas for any Annex II species (i.e., bottlenose dolphin, grey seal or harbour porpoise) so population level impacts (of the species-specific Management Unit) would not occur (see **Section 7 of Report to Inform Appropriate Assessment - Appendix 6.A** of FLO-WHI-REP-0002-06 **Chapter 6 EIA Methodology** of the Offshore ES).

### 3.1 Project commitments and compliance

37. Table 12.15 of Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore ES (document reference FLO-WHI-REP-0002-12) includes the following commitment to carrying out entanglement monitoring (this commitment is further captured in the Project Mitigations Register (WHX001-FLO-CON-ENV-REG-0001):

*Monitoring of all dynamic cables, mooring lines and wind turbine generators will be undertaken throughout the operation and maintenance phase of the Offshore Project to ensure there is no risk to the infrastructure of caught debris in the mooring lines and cables. This will likely be done by use of a Remotely Operated Vehicle (ROV). In the case of any fishing gear / debris caught in the Offshore Projects infrastructure, it will be removed.*

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<sup>6</sup>Communication from the Cornwall Seal Research Trust.



## 4. Approach to monitoring entanglement

38. Monitoring of entanglement will enable real-time reporting of entanglement events which helps increase the chance of successful marine mammal disentanglement, as well as facilitating an understanding of the conditions of the entanglement event.

### 4.1 Aims and objectives

39. The aims of entanglement monitoring are:

- To establish whether the presence of mooring lines present a risk to marine mammals in the vicinity of the Project.
- To establish whether entanglement of snagged material or marine mammals is a cause for strain on mooring lines.

40. The aims will be realised by committing to the following objectives:

- Identifying unexpected additional load on mooring lines or subsea cables as quickly as possible.
- Visually identifying snagged material on mooring lines and subsea cables.
- Investigating nature of additional load or material snagged on subsea infrastructure.
- Providing written reports, to include raw data, of every routine ROV survey and the absence / presence of snagged material.

### 4.2 Methodology

41. It is proposed, at this early stage, that a similar method of monitoring is undertaken as the current entanglement monitoring at KOW.

42. To date entanglement monitoring at KOW has been undertaken using load cells attached to mooring devices and subsea cables for continuous monitoring. Load cells are often used as strain gauges to sense load and monitor tension on taut subsea moorings or ropes.

43. In addition, at KOW mooring lines and suspended inter-array cables are regularly checked by an ROV. At WCOW this would take place during both planned and unplanned maintenance activities, or at least every six months in the initial phase of monitoring. This will identify snagged material such as discarded nets, ropes or other debris which could present a secondary or tertiary entanglement risk to marine mammals and marine turtles. It is proposed that the six-monthly ROV monitoring cycle is reduced over the life of the project, extending to an annual or bi-annual schedule. This will be determined by the WCOW Project Team who will implement a

Risk Based Inspection methodology to inform longer term inspection frequencies, which will utilise data gathered from routine and unplanned maintenance inspections (including any entanglement events).

44. Although it is acknowledged that the sensitivity of normal mooring monitoring systems is unlikely to detect fishing gear or even entangled megafauna (i.e., the function of both load cells and ROV surveys is predominantly to assess the performance of the subsea infrastructure during operation) they are considered at KOW to also offer a potential method for detecting entanglement from fishing equipment. Similarly, positioning monitoring is not likely to be sensitive enough without being coupled with a 'full digital twin'.
45. WCOW are collaborating with companies that are developing emerging technologies which may be suitable for monitoring entanglements in mooring lines by the time WCOW is installed and operational. Therefore, there is the possibility that novel dynamic cable monitoring systems (Nicholls-Lee et al., 2022) may become available in time for the operation of WCOW. These are currently in use in other industries but are at an early stage of development in offshore renewables; however, WCOWL are involved with and support current mooring monitoring research initiatives. If a new monitoring system is available prior to or during the operation of WCOW, it may be possible to test these systems.

### **4.3 Reporting**

46. ROV survey reports will be provided to the MMO and the relevant SNCBs within three months of receiving the finalised report from survey contractors, or equivalent, regardless of the absence or presence of snagged material.
47. Load cell continuous monitoring reports will only be provided for instances of additional load recordings that have been attributed to the presence of snagged material or marine mammal /marine turtle entanglement.
48. All reporting will include provision of raw data and details on which monitoring technique detected the snagging or entanglement.
49. WCOWL are committed to update the proposed monitoring and/or reporting in line with emerging findings from research and experience from using load cells, cameras and ROVs for monitoring of subsea infrastructure.

## **5. Approach to remediation**

50. There is no known best practice, UK specific guidance or lessons learnt to inform the remediation approach marine mammal or marine turtle entanglement for WCOW.

## 5.1 Snagged material remediation

### 5.1.1 Methodology

51. Snagged material will be removed using an ROV; however; it is not currently possible to provide further information on how quickly snagged material (marine debris or lost fishing gear) can be removed from the subsea infrastructure. WCOWL is committed to providing this information within the final version of this plan and as soon as it is possible.

## 5.2 Marine mammal and turtle entanglement remediation

52. The National Marine Mammal Entanglement Response Networks<sup>7</sup> administered by the USA's National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) provides coordination of safe and effective emergency responses to marine mammal entanglement events. In the absence of other useful guidance, it is considered appropriate that the approach to marine mammal entanglement remediation for the Project adopts the same principles of NOAA Fisheries response objectives.

### 5.2.1 Methodology

53. NOAA Fisheries entanglement response is specific to taxonomic groups (large whales, small cetaceans and pinnipeds) with responses requiring collaboration of many agencies, non-profit organisations, coastal communities, and other individuals. However, in all cases, only experienced responders who have the appropriate training, experience, equipment and support attempt to disentangle or closely approach an entangled marine mammal.

54. In the UK, the British Divers Marine Life Rescue (BDMLR) and the Marine Animal Rescue Coalition (MARC) are the organisations with the most experience in marine wildlife rescues. It is therefore proposed that entanglement events are reported to these organisations as soon as possible to enable them to lead the remediation attempts.

55. The BDMLR Rescue Hotline (01825 765546) is open 24 hours a day, seven days a week, including weekends and bank holidays. Since BDMLR and MARC work together, there is not a contact number for MARC.

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<sup>7</sup><https://www.fisheries.noaa.gov/national/marine-life-distress/national-marine-mammal-entanglement-response-networks>

56. Reporting of the confirmed entanglement should be carried out by the organisation that discovers the entanglement (i.e., the contractor or equivalent), informing the BDMLR and MARC at the same time as informing the operators of the WCOW.

57. It is critical to report a large whale entanglement as soon as possible. For all entanglement events, reports should include the following information, where possible:

- Date
- Photos/videos of individual
- Location of the animal
- A detailed description of the entangling gear or debris
- Where the entanglement is located on the animal
- The behaviour of the animal
- Condition of the animal (alive or dead)
- Species (if known)

58. If possible, photos or videos from different angles and from a safe and legal distance should be provided to entanglement response teams. Contractor presence at a safe distance should be maintained until responders arrive.

59. Once response teams have been informed and remediation action planned, the following organisations should be informed:

- Cetacean Stranding Investigation Programme
- MMO
- Natural England
- Maritime and Coastguard Agency (MCA)
- Trinity House (TH)
- Inshore Fisheries and Conservation Authority (IFCA)
- Joint Nature Conversation Committee (JNCC)
- Natural Resources Wales (NRW)
- Seal Research Trust
- Fishing organisations (Cornish Fish Producers Organisation and North Devon Fishermen's Association).

### **5.3 Reporting**

60. Post-remediation reports will be provided to the MMO and the relevant SNCBs within three months of the event. All reporting will include the information set out in Section 5.2.1, as well as detail on how the material or individual entanglement was detected and how the remediation was undertaken.

## 6. Roles, responsibilities, and personnel

61. The off-site WCOW Environment and Consents Team (ECT) are responsible for:

- Managing consultation on the OEMRP with the relevant consultees.
- Maintaining and updating the OEMRP.
- Supporting the contractor tendering process to ensure monitoring requirements are efficiently communicated to suppliers.
- Ensuring that all environmental monitoring is undertaken at the appropriate intervals.
- Timely review and submission of monitoring reports.

62. It is expected that an on-site Environmental Clerk of Works (ECoW) will be required during construction to inform contractors of OEMRP requirements, monitor compliance and to ensure best practice is being followed. The EcoW will report to the ECT.

63. Other key monitoring contractors and subcontractors are outlined in Table 1.

*Table 6-1 Key monitoring contractors and subcontractors*

Objective	Contractor	Contact details
ROV surveys		
Load cell deployment and monitoring		

## 7. References

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Garavelli, L., 2020. Encounters of Marine Animals with Marine Renewable Energy Device Mooring Systems and Subsea Cables. In A. E. Copping and L. G. Hemery (Eds.), OES-Environmental 2020 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World. Report for Ocean Energy Systems (OES). (pp. 146-153). Doi:10.2172/1633184

Wilcox C, Hardesty BD, Sharples R, Griffin DA, Lawson TJ, Gunn R (2013) Ghostnet impacts on globally threatened turtles, a spatial risk analysis for northern Australia. *Conserv Lett* 6: 247–254

Nicholls-Lee et al. (2022) Non-destructive examination (NDE) methods for dynamic subsea cables for offshore renewable energy, *Progress in Energy*, Vol 4,

## Appendix 1 Detailed consultation comments and responses

Consultee	Date, Document, Forum	Comment	Response	Where addressed
<b>Cornwall Seal Research Trust</b>	<b>19<sup>th</sup> March 2024</b>	What is WTG sorry couldn't find detail	Definition added	Glossary
		Great to include primary and secondary causes!	N/A	N/A
		Add asphyxiate – seals are voluntary breathers so don't try to take a breath underwater!	Updated	Section 3: Project entanglement risks
		The [mooring and cable] diagrams you sent were super helpful. Could they not be added as an appendix to this report? Taut lines seem to intuitively pose less of an entanglement risk with less seabed area impacts by potentially shifting cables in substantial groundswells? The diagrams have prompted a thought about the actual structure of the platforms posing an entanglement risk. They appear to be open structures (although this might just be artistic licence?) If open structures then assessment for entanglement here too needs to be done. We are super keen to explore the possibility of floating wind platforms being seal friendly and potentially increasing seal haul out habitat.	<p>Created new figure to show mooring configurations (taut, semi-taut and catenary).</p> <p>The entanglement risk assessment can be applied to entanglement in both subsea infrastructure (mooring lines and inter-array cables) as well as 'open' floating substructures, given that the configuration of the subsea infrastructure extends over a much wider area than the floating substructure occupies (i.e., such that it is already assessed by proxy).</p> <p>WCOWL is pleased to be able to commit to</p>	Figure 3-1

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			six-monthly meetings with the Cornwall Seal Research Trust to explore the possibility of incorporating measures to enhance the offshore infrastructure of WCOW for seals. Next planned meeting is 3 <sup>rd</sup> July 2024.	
		An unlikely but potential possibility depending on size of buoys is that seals may haul out on them. Harbour seals are particularly agile at throwing themselves onto big mooring buoys and resting there.	Noted. No response required.	N/A
		Wondering why this is [cables suspended in the water column]? In theory this adds to the entanglement risk by having floating moveable cables mid water and creating a partially looped space between that and the mooring line that poses a great risk to large whales for example??Depending on the tension of this cable and flexibility/thickness of cable, it could pose a risk to seals with their panic 'spin' response? Could the mooring lines and cables not be 'tethered' together to reduce water column area involved and reduce entanglement risks?	This comment is noted. WCOWL commit to investigating the feasibility of tethering inter-array cables. However, tethering cables together may increase EMF strength. Although the sensitivity of marine biodiversity to EMF exposure is not yet well understood, this could be a disadvantage of tethering.	Section 3: Project entanglement risks
		And seals Allen et al 2015 Entanglement of grey seals <i>Halichoerus grypus</i> at a haul out site in Cornwall, UK Marine Pollution Bulletin	Updated text and added in reference.	Section 3: Project entanglement risks



Consultee	Date, Document, Forum	Comment	Response	Where addressed
		[No reported instances of .... Entanglement of mooring systems of renewable devices in the UK] Isn't this because these are new infrastructure?	No evidence of instances of entanglement recorded at Kincardine or Hywind (both floating offshore windfarms in Scotland) has been found.  Text updated to reflect this.	Section 3: Project entanglement risks
		How and why would this [% of stranded turtles which were entangled] have been recorded and reported and who by? Even fishers legally obliged to report marine mammal bycatch within 24hours of landing don't do it.	This is addressed by the change in wording noted above – no evidence has been found.	Section 3: Project entanglement risks
		Allen paper has entanglement rate. We have long term data for grey seal entanglement rates in the SW UK ( <i>JPEG attached to comment, see Images tab, Fig. 01</i> )	Text updated to reflect this.	Section 3: Project entanglement risks
		Harbour seals – Thinking they do exist in this area albeit in very small numbers currently. Might want to add this species?	This specific paragraph is summarising the conclusions of the EIA and HRA therefore it is correct that harbour seal is excluded from this list. This is because Project site species use has been established using site specific data, as well as existing data from other offshore wind farms in the area and	Section 3: Project entanglement risks

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			<p>other available information for the region (See Scoping Report and Section 12.5 of Chapter 12: Marine Mammal and Marine Turtle Ecology of the Offshore Environmental Statement (ES) (document reference FLO-WHI-REP-0002-12).</p> <p>The key species and therefore the focus of the EIA and HRA are:</p> <ul style="list-style-type: none"> <li>▪ Harbour porpoise</li> <li>▪ Bottlenose dolphin</li> <li>▪ Striped dolphin</li> <li>▪ Common dolphin</li> <li>▪ Minke whale</li> </ul> <p>o Seasonal occurrence in low numbers</p> <ul style="list-style-type: none"> <li>▪ Grey seal</li> <li>▪ Leatherback turtle.</li> </ul> <p>Nevertheless, given harbour seal are protected under both national and international legislation (see updates to Section 1:</p>	

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			Introduction) the text is updated at Section 3 to confirm that the OEMRP applies to harbour seal too.	
		Assume [assessment in Chapter 12] this is referring to primary entanglement?	No – this is for all types – primary, secondary and tertiary	N/A
		The devil will be in the detail -how often [will monitoring be undertaken]? Too often and noise, pollution and disturbance will increase and not often enough means bycaught creatures will decompose before being observed. What happens when marine life is bycaught, what emergency protocols as well as recording and reporting protocols and to whom (?) will be put in place?	This is explained in Section 4.2: Methodology.	N/A
		How will real time monitoring be undertaken? Presumably underwater cameras will be deployed for this? What emergency protocols will be deployed should an entanglement occur? (I think you answered this below)	This is explained in Section 4.2: Methodology.	N/A
		Why significant risk? A fatal entanglement is pretty serious for the individual and its welfare. Significant usually refers to population level effect. Is this good enough? Don't individual creatures count?	The use of the word 'significant' has been removed	Section 4.1: Aims and objectives
		Who will these [routine monitoring reports] be shared with? (I think you answered this below)	This is explained in Section 4.3 Reporting	N/A
		How often [is regular for checking mooring lines and cables]? Need to be specific	ROV monitoring will be carried out on a six-monthly basis for the first year, as already stated in Section 4.2: Methodology, extending to an annual or bi-annual schedule. Eventually, the WCOW Project Team will implement a	N/A

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			Risk Based Inspection methodology to inform inspection frequencies, utilising data gathered on entanglement events through the earlier more frequent initial inspections.	
		...and seabirds given guillemots can dive to 180-200m! This will need to be changed throughout unless a separate seabird entanglement report is being prepared	A separate seabird entanglement report is not being prepared and seabirds are not applicable to this plan.	N/A
		Good to build in flexibility as technology develops	Noted. No response required.	N/A
		So how long does a report take to write after ROV survey and then another 3 months delay - not very dynamic or responsive	This is an outline plan so timelines for reporting will be refined during the detailed design phase.	N/A
		There should be a commitment here to act upon emerging findings from the load cells, cameras and ROVs [in reporting]	Updated text	Section 4.3 Reporting
		Not quite sure who this would be? BDMLR?	No, this would be the inspection contractor.	N/A
		Whose responsibility will this be [to undertake environmental monitoring]? And what is an appropriate interval?	This is the responsibility of the off-site WCOW Environment and Consents Team as noted in Section 6: Roles, responsibilities, and personnel.	N/A
		'Timely review and submission of monitoring reports'. By whom? For whom? And definition of timely?	Post-remediation reports will be	N/A

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			provided to the MMO and the relevant SNCBs within three months of the event, as noted in Section 6: Roles, responsibilities, and personnel.	
<b>Marine Management Organisation</b>	<b>14<sup>th</sup> May 2024</b>	The MMO advises that the introduction should set out the relevant species protections for added context.	Text added	Section 1.2: National and international protection of marine mammals and marine turtles
		MMO suggests that this document should outline the protections that marine mammals and turtles are afforded in UK waters.	As above	As above
		MMO advise that a wildlife licence should be considered as risks of injury and killing have been identified.	Text added	Section 1.3.1: Marine Wildlife Licence Requirements
		Paragraph 11 mentions that 'entangled animals may drown', the MMO recommends the addition of the word 'asphyxiate' here. This is to incorporate seals who are voluntary breathers and will not try to breath underwater	Updated	Section 3: Project entanglement risks
		MMO advises that the Project considers the addition of diagrams to an appendix to illustrate the points covered in paragraph 12.	Created new figure to show mooring configurations (taut, semi-taut and catenary).	Figure 3-1
		The MMO would like to raise awareness of the possibility of harbour seals hauling themselves out on surface buoys during construction. This is in reference to the surface buoys mentioned in paragraph 13.	Noted. No response required.	N/A

Consultee	Date, Document, Forum	Comment	Response	Where addressed
		<p>Paragraph 14 states 'The dynamic section of each cable will be freely suspended in the water column in a lazy wave configuration, with buoyancy modules attached to the mid-portion of the cable, creating a midwater arch' The MMO requires clarification on the footprint size per WTG from this format. The MMO also considers that the presence of floating movable cables mid water, creating a partially looped space between the cable and the mooring line could pose a risk to large whales. Depending on the tension and the flexibility of the cable this could cause a risk to seals with their panic spin response. The MMO wishes to explore the possibility of the mooring lines and cables being tethered together to reduce the water column area involved and reduce entanglement risk.</p>	<p>It is not possible to provide a footprint size per WTG and its subsea infrastructure; however, WCOWL commit to providing this information in the final version of the plan.</p> <p>WCOWL commit to investigating the feasibility of tethering inter-array cables. However, tethering cables together may increase EMF strength. Although the sensitivity of marine biodiversity to EMF exposure is not yet well understood, this could be a disadvantage of tethering.</p>	<p>Section 3: Project entanglement risks</p>
		<p>The MMO advises that entanglement risk during the construction period and operational phase should be considered in combination as referred to in paragraph 15.</p>	<p>It is not clear what this means - the in-combination effect (assuming this terminology is <u>not</u> referring to HRA) isn't doubling in magnitude – instead, the in-combination effect is a short increase in the</p>	<p>N/A</p>

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			duration of time the entanglement risk may be present (i.e., a proportion of the construction phase added to the already considered operational phase). Therefore, the same monitoring measures would apply in both the construction and operational phases.	
		The MMO recommends that the document should acknowledge the uncertainty and reporting requirements for current offshore floating windfarms with regards to paragraph 16, confirming whether this conclusion is made through lack of evidence or lack of incidence.	Text added.	Section 3: Project entanglement risks
		Consider mentioning seals in addition to cetaceans within paragraph 16 when describing species at risk from entanglement in discarded or lost fishing gear.	Updated text and added in reference.	Section 3: Project entanglement risks
		With reference to the comment 'there have been no recorded instances of marine mammal or marine turtle entanglement from mooring systems of renewable devices in the UK' within paragraph 16, it should be made clear that this may be because floating offshore wind infrastructure is relatively new. The Plan goes on to state 'nor has there been for anchored floating production storage offloading (FPSO) vessels in the oil and gas industry, which use similar mooring lines'. Further detail on how and when this has been recorded would be beneficial.	Text added.	Section 3: Project entanglement risks
		Further assessment of impact is required in paragraph 16. The MMO recommend assessing the visual disturbance on marine mammals and the threat of obstruction to navigation or other behavioural/ foraging impacts.	Section 12.8.8 of FLO-WHI-REP-0002-12 Chapter 12 Marine Mammal and Marine Turtle Ecology of the	N/A

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			Offshore ES assesses Barrier Effects Due to the Physical Presence of WCOW. This has been assessed as negligible for all species.	
		Paragraph 17 would benefit from the inclusion of entanglement to ghost gear is a key threat to seals. MMO understands that Cornwall Seal Group have provided additional references to the Project for inclusion within the Plan.	Updated text and added in reference.	Section 3: Project entanglement risks
		Paragraph 18 refers to the assessed risk of entanglement of harbour porpoise, bottlenose dolphin, common dolphin, striped dolphin, grey seal, and leatherback turtle as negligible to minor adverse significance; for minke whale. MMO are required to defer to NE and JNCC on whether this list of species is complete.	Noted.	N/A
		<p>The plan (paragraph 20) mentions monitoring of entanglement will enable real-time reporting. Further clarity is needed on whether monitoring and reporting will be constant or periodic. Protocols should be detailed here, including who will be informed during recording/reporting. What are the timeframes for submission of any reporting?</p> <p>MMO are concerned that the currently proposed method is not suitable for monitoring entanglement events, therefore constituting an inappropriate approach.</p> <p>It is noted that WCOWFL is currently “collaborating with some companies that are developing emerging technologies which may be suitable for monitoring entanglements in mooring lines”. While MMO recognise that White Cross is seeking a solution to this issue, this doesn’t account for monitoring entanglement events before this new technology is ready, as the monitoring approach mentioned in the document is could be stated as not fit for</p>	Ideally, constant monitoring measures would be available and adopted in time for the operation of WCOW; however, it is not currently possible to provide further clarity on technologies that will be used for constant monitoring of tension on subsea infrastructure as these are not available yet. Therefore, periodic monitoring using an ROV is proposed in this outline plan (Section 4.2).	<p>Section 4.2: Methodology</p> <p>Section 4.3: Reporting</p>



Consultee	Date, Document, Forum	Comment	Response	Where addressed
		<p>purpose. There is also no confidence that any future technology will work.</p> <p>MMO wish to address the monitoring issue before this new technology is available and in the future, should the technology not be effective.</p>	<p>As explained in Section 4.3, ROV survey reports will be provided to the MMO and the relevant SNCBs within three months of receiving the finalised report from survey contractors.</p> <p>Construction of WCOW is not planned until 2028. As stated in Section 4.2, given the test and demonstration status of WCOW, WCOWL are working with the industry to develop and test technologies to constantly monitor tension on the subsea infrastructure. Ahead of new technologies being deployed, or in the instance that such technologies are found to be ineffective, the periodic ROV inspection strategy will be implemented.</p>	

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			<p>It is important to balance the imposed requirements of monitoring against the evidenced level of the risk of entanglement in the first instance: it should be remembered that there has been no evidence found for debris (i.e. discarded fishing net) entanglement being an issue in the existing floating wind projects or floating Oil and Gas projects in the UK (see Section 3).</p> <p>Furthermore, it is expected that any discarded fishing nets would float close to the surface allowing them to be easily identified by a service vessel already in the field, and therefore easily collected. If debris were to become entangled, depending on the depth, this would be likely to be identified by the</p>	

Consultee	Date, Document, Forum	Comment	Response	Where addressed
		More detail on the specific snagged material and entangled animals is required in paragraph 22.	<p>vessel, and would be removed with an ROV.</p> <p>'Snagged material' at Section 4.1 refers to any marine debris that becomes 'caught' on the subsea infrastructure. It is not possible or useful to pre-empt the specifics.</p> <p>Section 4.1 doesn't specifically mention 'entangled animals'; instead, these aims are to 'identify unexpected additional load...' which is different to 'investigating the nature of the additional load...', since the former requires routine monitoring and the latter requires reactive/unplanned investigation.</p>	N/A
		Paragraph 24 mentions that mooring lines and suspended inter-array cables will be regularly checked. The MMO recommends that more detail is applied here and state how often they are to be checked.	Text added.	Section 4.2: Methodology
		The possibility of testing new mooring monitoring systems either pre or during operation of White Cross OWF is mentioned in the plan (paragraph 26). The MMO suggests that it would be helpful to	Given the test and demonstration status of WCOW, WCOWL	N/A

Consultee	Date, Document, Forum	Comment	Response	Where addressed
		<p>know if there are proposals to commit to new technologies after construction. Would this mitigation plan be reviewed on a regular basis following construction? Prevention via taut lines and other designs should be prioritised over remediation where possible.</p>	<p>are working with the industry to develop and test technologies to constantly monitor tension on the subsea infrastructure; however, WCOWL are not in a position to commit to utilising technologies that are not yet developed.</p> <p>WCOWL are content to comply with a marine licence condition imposed by the MMO pertaining to regular reviews of this plan.</p> <p>Prevention/reduction of entanglement risk through design measures is a priority for WCOWL, as evidenced through the investigation of the feasibility of 'tethering' inter-array cables to reduce the water column area that poses an entanglement risk.</p>	

Consultee	Date, Document, Forum	Comment	Response	Where addressed
		The MMO queries whether there should be a commitment to act within a certain timeframe detailed in paragraph 29, should monitoring show that a marine mammal is at risk.	Section 4.3: Reporting is specifically referring to the reporting of snagged material detections and the associated reporting protocol. Reporting of a marine mammal at risk is addressed in Section 5.2.1 which states this should be done as soon as possible.	N/A
		With regards to paragraph 33, the MMO request clarification on how applicable the NOAA emergency response is to entanglement in mooring lines. The MMO advises that the Project considers the practicalities of rescue at significant water depths and fixed lines. Has the project engaged with rescue organisations to understand these practicalities?	A meeting with the BDMLR took place on 8 March 2024. Text added.	Section 2.1: Consultation.
		Paragraph 38 details who will be informed once response teams have been informed and remediation action planned. The MMO advises that you consider if the Cetacean Standings Investigation Programme (CZIP) wish to be informed.	Text added	Section 5.2.1: Methodology
		The MMO advises that the acronyms WTG and BDMLR to be defined in the first use to improve understanding.	Defined in first use. WTG and BDMLR also included in glossary and acronym list.	Glossary and Acronym List.
		Incorrect spelling of taut throughout document.	Updated throughout document	N/A
		The MMO advises that it would be useful to include a reference to support the point made in paragraph 16 where it is stated ' <i>no recorded instances of marine mammal or marine turtle entanglement from mooring systems of renewable devices in the UK</i> '.	Text updated to be clearer on distinction between no evidence or no incidence. No reference is available	Section 3: Project entanglement risks

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			since this refers to the lack of recorded evidence of entanglement events.	
		Consider revising sentence structure in paragraph 16 to improve clarity.	Text edited.	Section 3: Project entanglement risks
		In section 5 of the document a methodology for snagged material (5.1.1) referenced. However, this appears to be blank upon review. The MMO advises that the correct methodology is added to the report.	Text added.	Section 5.1.1: Methodology
<b>Marine Management Organisation</b>	<b>3<sup>rd</sup> June 2024</b>	<p><b>MMO advise that a wildlife licence should be considered as risks of injury and killing have been identified.</b></p> <p>Comment 1.5 in our letter dated 17 November 23 states the following:            'Chapter 12 of the Environmental Statement considers noise impacts to marine mammals. Table 12.1 of this report acknowledges that piling is likely to cause an offence to protected species. The report concludes that it is anticipated that an application for a European Protected Species / Marine Wildlife licence will be submitted post-consent.            Based on the information provided to date, MCT are minded to consider that a wildlife licence may be required for potential disturbance and injury offences to marine mammals. Please see our webpage on the application process for a marine wildlife licence here: <a href="https://www.gov.uk/guidance/understand-marine-wildlife-licences-and-report-an-incident">https://www.gov.uk/guidance/understand-marine-wildlife-licences-and-report-an-incident</a>            The MMO would like to remind you that you are responsible for satisfying yourselves that the activities will not result in an offence. If you deem the activities may cause an offence, it is your responsibility to consider the need for a wildlife licence.'</p>	Text added	Section 1.3.1: Marine Wildlife Licence Requirements

Consultee	Date, Document, Forum	Comment	Response	Where addressed
		<p>Please see our MMO webpage which provides details on how to apply for a wildlife licence here:</p> <p>Wildlife licence are currently free of charge and we have an 8-week determination target. However, please be aware that MMO have not yet granted a wildlife licence for the operational stage of an offshore wind project.</p> <p>It is likely that further consideration would be needed by MMO as to an appropriate licensing route as this is a novel proposal. MMO Marine Conservation Team will be able to advise further at the time of application when details are submitted to MMO if you decide to apply.</p>		
		<p><b>The MMO would like to raise awareness of the possibility of harbour seals hauling themselves out on surface buoys during construction. This is in reference to the surface buoys mentioned in paragraph 13.</b></p> <p>This comment was for your consideration during the ES addendum when considering impacts during the construction phase, or to respond with signposting to the ES as to where this has already been considered.</p>	<p>This is considered highly unlikely during construction given the level of disturbance (activity and noise). No response required in ES Addendum.</p>	<p>N/A</p>
		<p><b>Paragraph 14 states 'The dynamic section of each cable will be freely suspended in the water column in a lazy wave configuration, with buoyancy modules attached to the mid-portion of the cable, creating a midwater arch' The MMO requires clarification on the footprint size per WTG from this format.</b></p> <p>MMO understands that this is stated within the Benthic Chapter, but for full clarity, MMO requests that this is included within the Outline Entanglement Monitoring and Remediation Plan. This should be</p>	<p>It is not possible to provide a footprint size per WTG and its subsea infrastructure; however, WCOWL commit to providing this information in the final version of the plan.</p>	<p>N/A</p>

Consultee	Date, Document, Forum	Comment	Response	Where addressed
		<p>included in detail in all areas where relevant to ensure it is being considered in different aspects of the project.</p>		
		<p><b>entanglement risk during the construction period and operational phase should be considered in combination</b></p> <p>It is understood that the combined impact is not doubling, however our comment was an acknowledgement that the impacts of both should be considered together as well as separately.</p>	<p>It is not clear what this means - the in-combination effect (assuming this terminology is <u>not</u> referring to HRA) isn't doubling in magnitude – instead, the in-combination effect is a short increase in the duration of time the entanglement risk may be present (i.e., a proportion of the construction phase added to the already considered operational phase). Therefore, the same monitoring measures would apply in the construction and operational phases.</p>	<p>N/A</p>
		<p><b>With reference to the comment 'there have been no recorded instances of marine mammal or marine turtle entanglement from mooring systems of renewable devices in the UK' within paragraph 16, it should be made clear that this may be because floating offshore wind infrastructure is relatively new. The Plan goes on to state 'nor has there been for anchored floating production storage offloading (FPSO) vessels in the oil and gas</b></p>	<p>Text updated to be clearer on distinction between no evidence or no incidence. No reference is available since this refers to the lack of recorded evidence of entanglement events.</p>	<p>Section 3: Project entanglement risks</p> <p>Section 4.2: Methodology</p>



Consultee	Date, Document, Forum	Comment	Response	Where addressed
		<p><b>industry, which use similar mooring lines'. Further detail on how and when this has been recorded would be beneficial.</b></p> <p>MMO are querying whether WCOWFL are referencing any monitoring/scientific papers to evidence the statement or whether WCOWFL are simply stating that they can find no records of entanglement from mooring systems. If it is the former, MMO would like more detail on the methods of monitoring. If it is the latter, MMO would like WCOWFL to make it clear in the plan, as the statement implies that mooring systems do not present a risk - but this is unfounded at present.</p>	<p>There is known entanglement monitoring happening at KOW, the details of which are somewhat mirrored in this plan, as stated throughout.</p>	
		<p><b>The MMO recommend assessing the visual disturbance on marine mammals and the threat of obstruction to navigation or other behavioural/ foraging impacts.</b></p> <p>MMO agrees with WCOWL's statement that this should be considered within the ES. Please can signposting be provided to where this is. to the MMO can highlight comments at any stage of the process when additional information is submitted. SNCBs are likely to comment on these impacts. Permanent structures may present a barrier which should be considered further.</p>	<p>Section 12.8.8 of FLO-WHI-REP-0002-12 Chapter 12 Marine Mammal and Marine Turtle Ecology of the Offshore ES assesses Barrier Effects Due to the Physical Presence of WCOW. This has been assessed as negligible for all species.</p>	<p>N/A</p>
		<p><b>Paragraph 18 refers to the assessed risk of entanglement of harbour porpoise, bottlenose dolphin, common dolphin, striped dolphin, grey seal, and leatherback turtle as negligible to minor adverse significance; for minke whale. MMO are required to defer to NE and JNCC on whether this list of species is complete.</b></p> <p>MMO is yet to make a determination on this case, and can present queries and comments on all documents up to the determination phase, regardless of whether we have raised it before. The comments MMO have provided to date are to assist WCOWFL in making a fully considered application and are initial comments in</p>	<p>Noted.</p>	<p>N/A</p>

Consultee	Date, Document, Forum	Comment	Response	Where addressed
		<p>respect of the proposed White Cross OWF. Our comments to date are without prejudice to any future representation the MMO may make about the proposed Project and associated documents.</p> <p><b>Would this mitigation plan be reviewed on a regular basis following construction?</b></p> <p>While the document contains a monitoring plan and a reporting plan, there is no section addressing a mitigation plan, should monitoring detect that the mooring lines are indeed causing significant entanglement issues. Long term mitigation solutions should be explored in this document with details of how they would be selected and deployed including timing and duration.</p> <p>MMO query if taut mooring lines are possible? Can any other design considerations which could mitigate the risk of entanglement, be implemented. Prevention via taut lines and other designs should be prioritised over remediation where possible.</p> <p>As WCOWFL are open to 'engagement with academia and research industry initiatives to develop efficient monitoring over time ', the MMO will be looking to request that the plan is reviewed on a regular basis in order to incorporate these. In the event that better technologies become available we would hope that these would be utilised.</p> <p>We would propose that any mitigation plan be re-reviewed on a regular basis via post-consent conditions (e.g., on a yearly basis/time period deemed appropriate).</p>	<p>It is not possible to provide details of a mitigation strategy at this outline stage; however, WCOWL commit to providing a detailed mitigation strategy in the final version of the plan. This will include details on how they will be identified, selected and deployed.</p> <p>Prevention/reduction of entanglement risk through design measures is a priority for WCOWL, as evidenced through the investigation of the feasibility of 'tethering' inter-array cables to reduce the water column area that poses an entanglement risk. At present, the use of taut subsea</p>	<p>N/A</p>

Consultee	Date, Document, Forum	Comment	Response	Where addressed
			<p>infrastructure is still being considered.</p> <p>WCOWL are content to comply with a marine licence condition imposed by the MMO pertaining to regular reviews of this plan.</p>	
		<p><b>With regards to paragraph 33, the MMO request clarification on how applicable the NOAA emergency response is to entanglement in mooring lines. The MMO advises that the Project considers the practicalities of rescue at significant water depths and fixed lines. Has the project engaged with rescue organisations to understand these practicalities?</b></p> <p>As advised previously, MMO is not aware of UK specific entanglement remediation guidance and appreciates WCOWFL's willingness to engage and appropriately use their status as a demonstration project to fulfil this knowledge gap.</p> <p>MMO was querying the level of engagement with the BDMLR and the conversations behind the practicalities of rescue in different scenarios.</p> <p>It should be acknowledged that existing entanglement practices may not be transferrable to mooring lines and that a tailored approach should be considered.</p>	<p>A meeting with the BDMLR took place on 8 March 2024. Text added.</p>	<p>Section 2.1: Consultation.</p>