



# **SOFIA** **OFFSHORE** **WIND FARM**

## **PRE-CONSTRUCTION PLANS AND DOCUMENTATION**

Project Environmental Management and Monitoring Plan (PEMMP) including Marine Pollution Contingency Plan (MPCP), Chemical Risk Assessment (CRA) and Waste Management and Disposal Plan (WMDP)

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# 1. INTRODUCTION

## 1.1 OVERVIEW

- 1.1.1 Sofia Offshore Wind Farm (SOWF) was developed and consented by the Forewind Limited Consortium and previously known as Dogger Bank Teesside B (Teesside B). The Dogger Bank Teesside A and B Offshore Wind Farm Order 2015 (the DCO) was granted on 4th August 2015 and came into force on the 26th August 2015. The DCO was amended in 2019. The Forewind Limited consortium disbanded and since August 2017, Innogy Renewables UK Limited (innogy) has held 100% ownership of SOWF under a new subsidiary, Sofia Offshore Wind Farm Limited (SOWFL). On 30 June 2020, innogy, and its subsidiary SOWFL, transferred to become part of RWE.
- 1.1.2 This document forms part of a suite of documents that will be produced under the requirements set out within Condition 16 of Schedule 9 (Deemed Marine Licence (dML) 2: Project B (SOWF) Offshore Generation - Work Nos. 1B and 2T) (Variation No. 2, April 2019). This Condition requires Pre-Construction Plans and Documents to be submitted and approved by the Marine Management Organisation (MMO) where relevant in consultation with statutory and non-statutory advisors. Further information with respect to the relevant conditions to be discharged by this plan and the legislative context can be found in APPENDIX D.
- 1.1.3 The sections of this document, and their contents are briefly described below:
- Section 2** outlines the consented SOWF;
- 🌀 **Section 3** identifies the objectives of this PEMMP;
  - 🌀 **Section 4** presents the roles and responsibilities of the key personnel relevant to this PEMMP;
  - 🌀 **Section 5** details the Health, Safety and Environmental policies adhered to during the works;
  - 🌀 **Section 6** outlines the Marine Pollution Contingency Plan (MPCP), **Reference should be made to Section 6.6 in an emergency**;
  - 🌀 **Section 7** presents the Chemical Risk Assessment (CRA), including information regarding how and when chemicals are to be used, stored and transported and practice guidance;
  - 🌀 **Section 8** presents the Waste Management and Disposal Plan (WMDP);
  - 🌀 **Section 9** discusses the environmental and anthropogenic considerations; and
  - 🌀 **Section 10** includes the relevant contractor requirements for the construction and operation of SOWF, including how compliance will be monitored.
- 1.1.4 Under the dMLs, this document must be submitted to the MMO for approval, at least 4 months before the intended commencement of relevant licenced activities except where otherwise stated or unless otherwise agreed in writing by the MMO. SOWFL is submitting this document prior to the commencement of the horizontal directional drill for the export cable at the landfall and site clearance anticipated to commence in early 2022. This PEMMP covers the construction and operational phases of SOWF and the infrastructure

located in the intertidal and offshore areas. Decommissioning is anticipated to require a new PEMMP that will be produced and submitted prior to decommissioning.

- 1.1.5 Following completion of the construction phase this PEMMP will undergo a thorough review and will be updated to ensure that the principles outlined within the document remain appropriate for the operational phase.

## 1.2 PEMMP REVIEW

- 1.2.1 The PEMMP will be reviewed at regular intervals and following subsequent updates during the lifetime of SOWF (construction and operation). It is anticipated that a review will be undertaken for operation when details of the OFTO are known. It is then expected that the PEMMP will be reviewed at three yearly intervals during operation to ensure it remains fit for purpose. There will be a further review of the PEMMP prior to decommissioning. The MMO will be consulted on any material amendments to the PEMMP as required under dML Condition 33, Schedule 9 (Variation No. 2, 2019) and dML Condition 31, Schedule 11 (Variation No. 2, 2019).

## 2. PROJECT DESCRIPTION

### 2.1 OVERVIEW

- 2.1.1 The SOWF site is located approximately 165 km offshore on the shallow central area of the North Sea known as the Dogger Bank with the export cable landfall in an area between Redcar and Marske-by-the-Sea (Figure 1). Water depths in the array area are between 21 m and 37 m and water depths along the export cable corridor are up to 82 m.

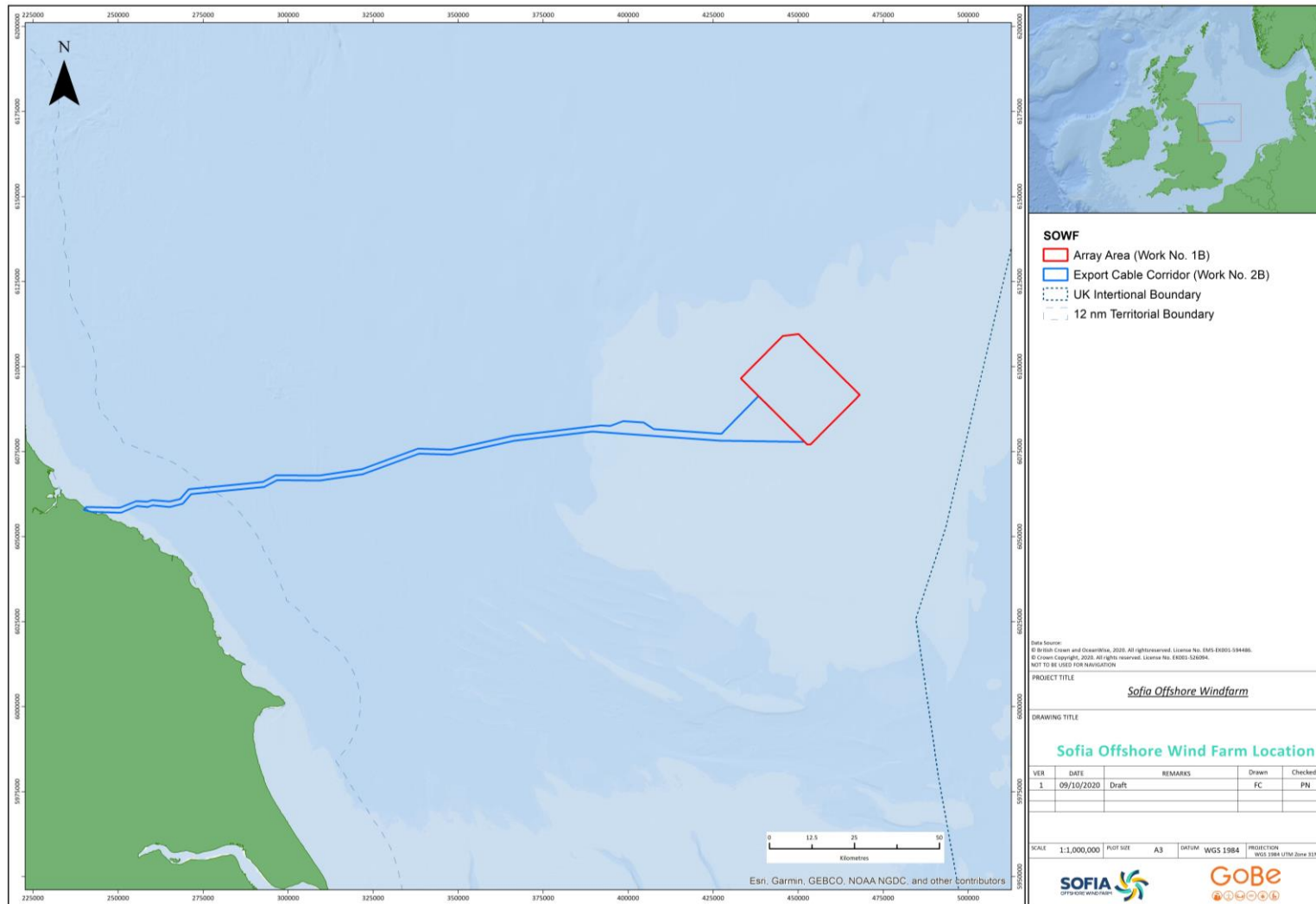


Figure 1 Sofia Offshore Wind Farm.

2.1.2 SOWF has a generating capacity of up to 1.4 gigawatts (GW). The footprint of the layout area is approximately 593 km<sup>2</sup>. Offshore, the DCO (as amended in March 2019) allows for:

- ✦ Offshore wind turbine generating station with a gross electrical output capacity of up to 1.4 GW;
- ✦ Up to 200 wind turbines and supporting tower structures;
- ✦ Wind turbine foundations and associated support and access structures;
- ✦ One offshore converter platform (OCP), and associated foundations;
- ✦ Up to four offshore collector platforms, and associated foundations<sup>1</sup>;
- ✦ Up to two offshore accommodation or helicopter platform(s) for operations and maintenance activities, and associated foundations<sup>1</sup>;
- ✦ Subsea inter-array cables between the wind turbines; between wind turbines and offshore collector platforms; between wind turbines and offshore converter platform; linking to meteorological stations and accommodation platforms<sup>2</sup>;
- ✦ Subsea inter-platform cables: between offshore collector platforms; between offshore collector platforms and the High Voltage Direct Current (HVDC) offshore converter platform<sup>2</sup>;
- ✦ Offshore export cable systems, carrying power from the offshore HVDC converter platform to the landfall(s);
- ✦ Crossing structures at the points where project cables cross existing subsea cables and pipelines or other Dogger Bank project cables;
- ✦ Up to five offshore meteorological monitoring stations. This is in addition to the two meteorological stations which were subject to an earlier and separate consent application and installed in 2013;
- ✦ Protection against scour and subsea foundation damage;
- ✦ Seabed preparation measures;
- ✦ Cable protection measures; and
- ✦ Up to ten vessel mooring buoys.

2.1.3 Onshore the DCO allows the export cables to connect the offshore cables to the onshore cables and the associated onshore infrastructure required to transport the power for connection to the National Grid substation at Lackenby.

<sup>1</sup> Since the project was consented, the detailed design has been ongoing, and the project currently comprises one HVDC OCP which includes a Helideck. There will be no offshore collector platforms, offshore accommodation or separate helicopter platforms, and no meteorological masts.

<sup>2</sup> The wind turbine generators will connect to each other and then directly, via the HVAC (High Voltage Alternating Current) subsea array cables, to the HVDC offshore converter platform.

## 2.2 OWNERSHIP OF GENERATION AND TRANSMISSION ASSETS

- 2.2.1 SOWFL will design, procure, construct and commission the offshore generation system and the transmission system. Following commissioning, SOWFL (the Wind Farm Operator (WFO)) will transfer the assets to a licensed Offshore Transmission Owner (OFTO). SOWFL will retain ownership of the offshore generation system.
- 2.2.2 The offshore boundary of ownership between SOWFL and the OFTO occurs at the high-voltage and low-voltage interface between the generation system and the transmission system and is known as the Grid Entry Point (GEP).
- 2.2.3 Table 2.1 and Figure 2 show the breakdown in asset ownership and boundary locations between the generation system and the transmission system.

**Table 2.1 Asset ownership of the Wind Farm Operator and Offshore Transmission Owner.**

NON OFTO (GENERATION)	OFTO (TRANSMISSION)
<ul style="list-style-type: none"> <li>☞ up to 200 wind turbines and supporting tower structures;</li> <li>☞ wind turbine foundations and associated support and access structures;</li> <li>☞ subsea inter-array cables (950 km maximum);</li> <li>☞ array cable protection measures (where necessary); and</li> <li>☞ the 66 kV switchgear, SCADA systems and the control and protection panels located at the OCP.</li> </ul>	<ul style="list-style-type: none"> <li>☞ 400 kV bay at the National Grid Lackenby substation;</li> <li>☞ 400 kV cables linking the Onshore Converter Station (OCS) to the National Grid substation;</li> <li>☞ One OCS;</li> <li>☞ 320 kV export cables linking the OCS to the OCP (~230 km offshore, ~7 km onshore), export cable protection measures where necessary;</li> <li>☞ One OCP, comprising of the HVDC converter system, converter transformers, 66 kV AC and HVDC switchgear, auxiliary cooling system, diesel generators, control systems, battery Direct Current (DC) and Uninterruptable Power Supply (UPS) systems; and</li> <li>☞ OCP foundations and protection against scour and subsea foundation damage (where necessary).</li> </ul>

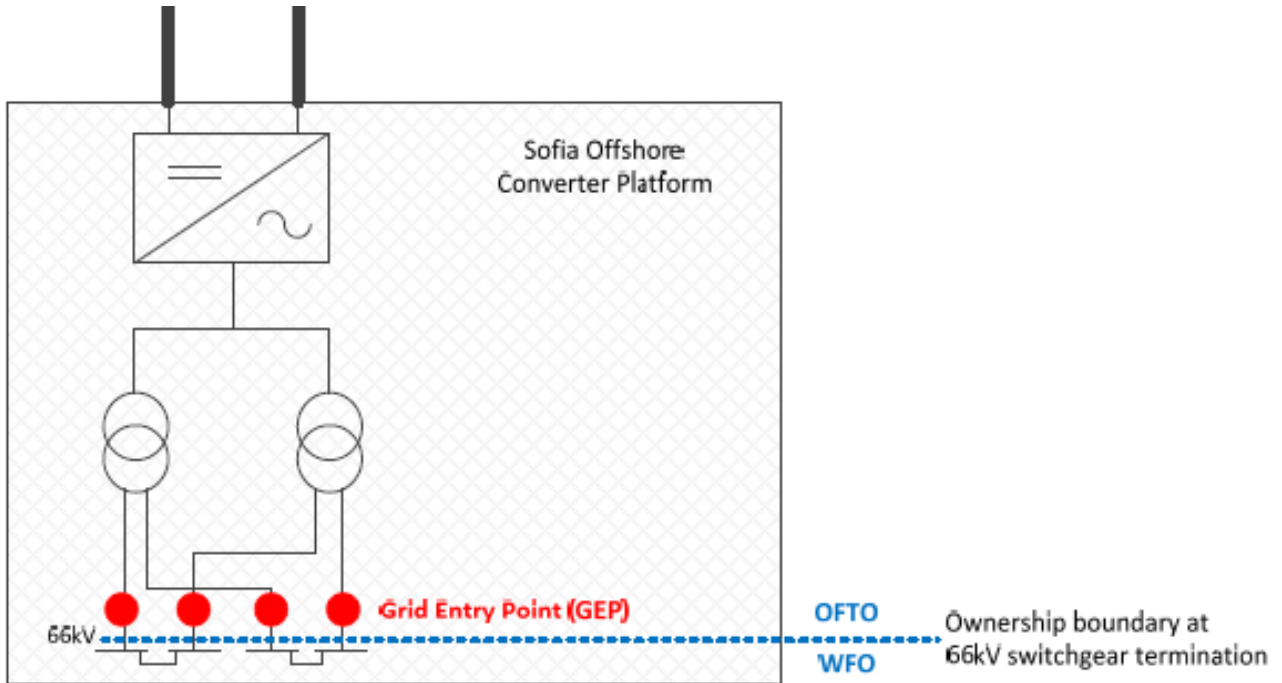


Figure 2 Diagram showing the Grid Entry Point between the Wind Farm Operator and Offshore Transmission Owner systems.

## 3. PEMMP OBJECTIVES

### 3.1 OVERVIEW

- 3.1.1 This PEMMP sets out the proposed environmental management framework and procedures that will be followed by all Contractors and subcontractors for the construction and operation of SOWF. In addition, it includes the Marine Pollution Contingency Plan (MPCP), Chemical Risk Assessment (CRA); Waste Management and Disposal Plan (WMDP) and the linkage to the Contractors Environmental Management Obligations (CEMO). The CEMO has been produced by SOWFL and does not require approval from the MMO. The obligations in the CEMO document incorporate this PEMMP (including the MPCP, CRA and WMDP) plus all other necessary environmental matters (onshore and offshore) to facilitate compliance with the management plans throughout construction and operation of the project. Only information relevant to the dML conditions are contained within this PEMMP, however the CEMO is referenced throughout this document where relevant.

### 3.2 OBJECTIVES

- 3.2.1 The broad objectives of the PEMMP are as follows:
- ✿ To provide a mechanism to ensure that measures to mitigate potentially adverse environmental impacts are implemented during all works;
  - ✿ To promote and meet good practice standards throughout the phases of SOWF;
  - ✿ To provide guidance to contractors, site team and subcontractors; and
  - ✿ To provide a framework for compliance auditing and inspection to enable SOWFL to be assured that the necessary levels of environmental performance are being met.
- 3.2.2 All SOWFL personnel and contractors involved in the Project must comply, as a minimum, with the mitigation and management measures and procedures presented in this PEMMP.
- 3.2.3 Contractors will be responsible for the construction of the main infrastructure associated with SOWF. Preparation of an Environmental Management Plan (EMP) will be the responsibility of the appointed Contractor for the works that they have been awarded to demonstrate compliance with this PEMMP, the CEMO and all other relevant documents.
- 3.2.4 All Contractors involved in the operation of SOWF will also be required to produce an EMP for their works which should show compliance with this PEMMP, the CEMO and all other relevant documents.
- 3.2.5 A copy of this PEMMP must be held by all Contractors and present on all vessels undertaking works for SOWF.

### 3.3 CONTRACTORS ENVIRONMENTAL MANAGEMENT OBLIGATIONS (CEMO)

- 3.3.1 SOWFL has prepared the CEMO document which is in line with RWE's ISO14001:2015 Environmental Management System (EMS) requirements. Each contractor must prepare an environmental management plan which is fully aligned to the CEMO.
- 3.3.2 As noted above, the CEMO is an internal additional document that is produced for SOWF and does not require approval under the dML.
- 3.3.3 The purpose of the CEMO is to ensure that the contractors' environmental management plans take account of SOWFL's internal management procedures to ensure that all potential impacts associated with SOWF are managed in accordance with statutory legislation and obligations together with adhering to environmental best practices.
- 3.3.4 The CEMO includes details on but not limited to; internal reporting systems, inspections audits, non-conformities, incident investigation analysis, risk assessment, weekly and monthly reporting requirements.
- 3.3.5 Please note that the obligations set out within the CEMO do not duplicate the requirements of the PEMMP. The CEMO provides tools, processes and procedures that will be adopted to ensure that the requirements of the PEMMP and standard environmental practices are being met and adhered to, together with providing an auditable system that demonstrates compliance.

## 4. ROLES AND RESPONSIBILITIES

### 4.1 OPERATIONAL STRUCTURE

4.1.1 The SOWF organisational structure is outlined in Figure 3. The roles and responsibilities of key personnel relevant to this PEMMP are outlined in Table 4.1. More specific roles and responsibilities pertinent to key activities or aspects of this plan are detailed in Sections 4.2.2, 4.2.3 and 4.2.4.

**Table 4.1 Roles and Responsibilities of SOWF Personnel**

ROLE	RESPONSIBILITIES	CONTACT DETAILS
<b>Project Director</b>	Overall responsibility for the delivery of SOWF.	Matthew Swanick <a href="mailto:matthew.swanwick@rwe.com">matthew.swanwick@rwe.com</a>
<b>Senior Project Manager</b>	Accountable for the day to day activities on the construction site, including HSE and represents a link between site operations and senior management.	Vince Read - <a href="mailto:vince.read@rwe.com">vince.read@rwe.com</a>
<b>Principal Contractor</b>	Responsible for planning, managing, monitoring and coordinating the entire construction phase in accordance with the CDM Regs. They must take account of the health and safety risks to everyone affected by the works (including members of the public) and will plan and manage the measures needed to control them.	SOWFL will assume the role of PC for all works offshore and will be overseen by the General Site Manager
<b>Package Managers</b>	Package Managers will report to the Project Director and have responsibility for the delivery of their respective Work Package.	Wind turbines: Frank Fuhrmanneck - <a href="mailto:frank.fuhrmanneck@rwe.com">frank.fuhrmanneck@rwe.com</a>  Wind turbine foundations: Jonathan Bowler - <a href="mailto:jonathan.bowler@rwe.com">jonathan.bowler@rwe.com</a>  HVDC (onshore OCS and offshore OCP) Larry Clare - <a href="mailto:larry.clare@rwe.com">larry.clare@rwe.com</a>  Export cables: Merle Resow – <a href="mailto:merle.resow@rwe.com">merle.resow@rwe.com</a>  Array cables: Colin Shellard – <a href="mailto:colin.shellard@rwe.com">colin.shellard@rwe.com</a>  O&M * Alexander Macdonald - <a href="mailto:a.macdonald@rwe.com">a.macdonald@rwe.com</a>
<b>General Site Manager</b>	Responsible for the technical delivery of the construction activities in relation to the offshore works and co-ordinating all construction works and ensuring health and safety standards on site including Management of the PC team	Neville Horton - <a href="mailto:neville.horton2@rwe.com">neville.horton2@rwe.com</a>

ROLE	RESPONSIBILITIES	CONTACT DETAILS
<b>Health, Safety and Environmental (HSE) Manager</b>	Delivery of HSE elements including HSE performance and promoting safety leadership across the Project, encouraging an exemplary behavioural safety culture.	Ivor Mower - <a href="mailto:i.mower@rwe.com">i.mower@rwe.com</a>
<b>Environmental Manager</b>	Delivery of environmental elements of project. Responsible for implementation and maintenance of Project Environmental Manual together with environmental management, monitoring, maintaining, managing and communicating the PEMMP (refer to Paragraph 4.2.2).	Pippa Doodson - <a href="mailto:pippa.doodson@rwe.com">pippa.doodson@rwe.com</a>
<b>Consent Manager(s)</b>	Overall responsibility for ensuring the Project remains compliant with the key project consents, that the relevant consent Conditions are discharged prior to the commencement of construction and that all Contractors are aware of and have a responsibility to comply with the relevant consents. The Consent Manager is also responsible for liaising with the relevant licensing authorities.	Senior Consent Manager: Kim Gauld-Clark – <a href="mailto:kim.gauld-clark@rwe.com">kim.gauld-clark@rwe.com</a>  Offshore: Harriet Thomas - <a href="mailto:harriet.thomas@rwe.com">harriet.thomas@rwe.com</a>  Onshore: Sandra Painter - <a href="mailto:sandra.painter@rwe.com">sandra.painter@rwe.com</a>
<b>Designated On-site Environmental and Consent Manager</b>	Working with Environmental Manager for delivery of environmental elements of project. Responsible for implementation and maintenance of Project Environmental Manual together with environmental management, monitoring, maintaining, managing and communicating the PEMMP (refer to Paragraph 4.2.2).	Appointed by Contractor
<b>Lead Marine Co-ordinator</b>	Disseminates construction information and Vessel activities to all marine stakeholders in conjunction with the Stakeholder Management and issues Notices to Mariners when deemed necessary. Compiles and issues Weekly Notice of Operations and maintains the project multi-vessel contact list. Responsible for Incident Management Procedure, Offshore Transfer Procedure and Marine coordination procedure. Responsible for reporting spills or collision incident to relevant authorities.	To be appointed by SOWFL
<b>Duty Marine Co-ordinator</b>	Responsible for daily coordination of all vessels and personnel going offshore to the wind farm construction site.	To be appointed by SOWFL
<b>Client Representative</b>	Responsible for monitoring the technical delivery of works on site on behalf of the Client in accordance with SOWFL specification and health and safety standards.	To be appointed by SOWFL
<b>Incident Commander (IC)</b>	Responsible for coordinating and managing the response to a spill to the marine environment (Tier 2 and above). This is likely to be existing personnel on the project who assume this role as required.	To be appointed by SOWFL

ROLE	RESPONSIBILITIES	CONTACT DETAILS
<b>Ecological Clerk of Works (ECoW)</b>	Responsible for overseeing onshore construction activities and ensuring that they are carried out in accordance with environmental commitments and legislation (refer to Paragraph 4.2.3). Will interface with the Environment Manager at the landfall.	Appointed by contractors
<b>Company Fisheries Liaison Officer (FLO)</b>	Responsible for the dissemination of relevant vessel movements and updates on construction activities to the interested fisheries parties (refer to Paragraph 4.2.4).	Nigel Procter, Precision Marine Survey Limited - <a href="mailto:n.proctor@precisionmarine.co.uk">n.proctor@precisionmarine.co.uk</a>
<b>Fisheries Liaison Representative (FLR)</b>	Responsible for the dissemination of relevant project information to the local fishing industries.	Appointed by contractors

For operation, the PEMMP will be reviewed and updated with operations roles

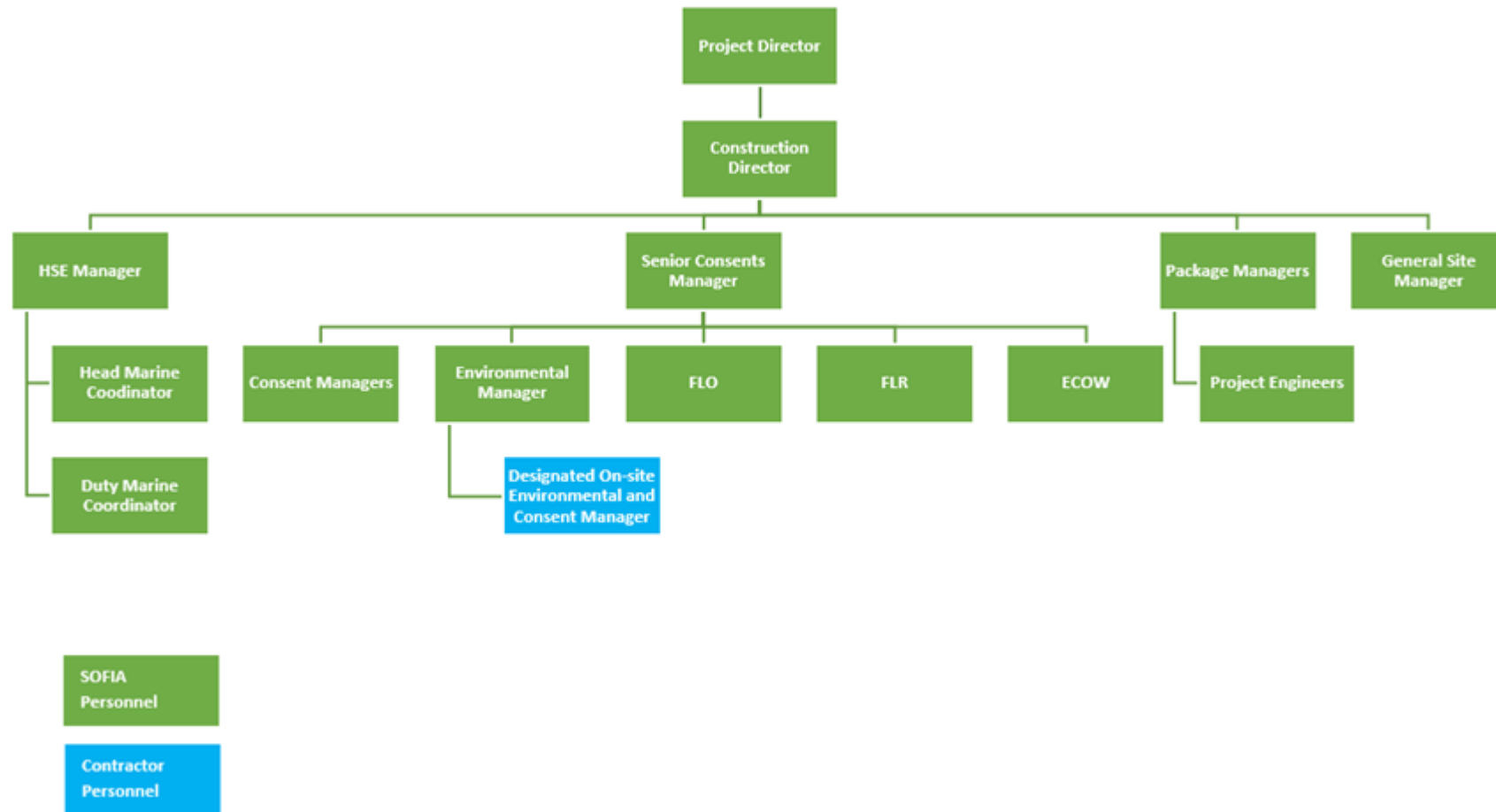


Figure 3 SOFW Organisational Structure (to be updated for operation when OFTO details are known)

## 4.2 ROLES AND RESPONSIBILITIES

### LIAISON OFFICERS

4.2.1 It should be noted here that Table 5.1 shows the organisation structure of all personnel which have duties associated with the PEMMP and detailed through the document. Below is a detailed description of the key liaison officers who are involved with the PEMMP and dML Conditions.

### ENVIRONMENTAL MANAGER

4.2.2 SOWF have appointed an Environmental Manager (name and contact details can be found in Table 4.1). The specific responsibilities of the Environmental Manager will include, but are not limited to the following:

- ✦ Monitoring compliance with the commitments made in the Environmental Statement (ES) and this PEMMP and advising the MMO immediately if any issues arise:
- ✦ Commitments and mitigation actions will be tracked by the Environmental Manager and Consent Management Team, including the outcomes of any offshore audits;
- ✦ If any issues in the delivery of the commitments or mitigation measures are envisaged, the Environmental Manager will notify the Consent Manager and aim to remedy the issue;
- ✦ If issues arise before internal action can be taken, then the Environmental Manager will advise the MMO as soon as possible in consultation with the Natural England Case Manager and Officer (see APPENDIX A) for SOWF and the local officers, if relevant; and
- ✦ The Environmental Manager will manage the interface between the Consent Management Team and the General Site Manager and relevant Package Managers to coordinate any environmental responsibilities, communications or actions.
- ✦ Providing a central point of contact for the pre-, during and post-construction monitoring programmes:
- ✦ The Environmental Manager is responsible for the implementation of approved monitoring programmes, with support from the rest of the Consent Management Team(s).
- ✦ Inducting personnel on site and inducting offshore Contractors on environmental policy and procedures:
- ✦ This PEMMP will be provided to relevant intertidal and offshore construction Contractors prior to the start of construction. Contractors will be inducted on the commitments and mitigation measures set out in the PEMMP, ES and any other relevant documentation;
- ✦ The Vessel Master of each offshore vessel will hold and maintain a copy of this PEMMP and will be responsible for contacting the Environmental Manager and Health, Safety and Environmental (HSE) Manager if any environmental issues arise; and
- ✦ Delivering the functions and duties specified in the SOWF Archaeological Offshore Written Scheme of Investigation (WSI) (SOWFL, 2019 EcoDoc No.003034372) and managing the retained archaeologists.

- 🌀 Reviewing the Weekly Construction Progress Checklist prepared by the Contractor's Designated On-site Environmental and Consent Manager. The purpose of the checklist is to provide an update on the status of compliance with each of the Employer Consents and status of compliance with and procurement of any Contractor Consents.

### ONSHORE ECOLOGICAL CLERK OF WORKS

- 4.2.3 An ECoW will be appointed by SOWFL prior to the commencement of works and the appointed person will be notified to the MMO<sup>3</sup> (see Table 4.1). The responsibilities of the ECoW will be down to Mean Low Water Springs (MLWS) and include communicating information relating to the works, sensitivities of the area, monitoring information and other relevant information to the Contractors. This includes but is not limited to providing toolbox talks prior to the commencement of works, promoting environmental awareness, monitoring adherence to this PEMMP, liaising with stakeholders as required, maintaining records of inspections and meetings and producing reports. In the event that there is or has been a deviation from the proposed works, the ECoW is expected to notify the Environmental Manager (during office hours), who will liaise with the MMO and Natural England, or outside office hours, the ECoW will liaise directly with Natural England and the MMO for their advice on appropriate courses of action if an incident occurs.

### FISHERIES LIAISON OFFICER

- 4.2.4 In accordance with the dMLs, a FLO has been appointed for SOWF (see Table 4.1). The FLO reports directly to the SOWF Consent Manger. The FLO will establish and maintain effective communications between the project, contractors, fishermen, fisheries industry groups and other relevant stakeholders. Where required, the FLO will liaise with the Fisheries Liaison Representatives (FLR) appointed by the Contractor and other SOWFL staff as required. The specific roles and responsibilities of the FLO and FLR are detailed in the SOWF Fisheries Liaison Plan including Co-Existence (SOWFL, 2020).

### DESIGNATED ON-SITE ENVIRONMENTAL AND CONSENT MANAGER

- 4.2.5 The Contractor will appoint a designated On-site Environmental and Consent Manager who will assume the responsibility for consents and environmental management during construction. Their role will include but is not limited to:
- 🌀 Implementation of the DCO and dML and associated plans, reporting and notifications;
  - 🌀 Adherence with DCO and dML and associated plans, reporting and notifications;
  - 🌀 Adherence with its environmental management plan which must accord with the CEMO and implementation of requirements;
  - 🌀 Ensure all staff are aware of consent requirements in relation to their roles and responsibilities;
  - 🌀 Ensure subcontractors are provided with the relevant information regarding their responsibilities;

<sup>3</sup> Note that the MMO will only be notified of works that may affect their area of responsibility, i.e. below Mean High Water Springs (MHWS)

- ✿ Consents induction and familiarisation for new staff and sub-contractors;
- ✿ Ensure lines of reporting are understood by personnel in conjunction to their roles and responsibilities;
- ✿ Ensure that any issues arising concerning consents are notified to the Consents Management Team and Environmental Manager at the earliest opportunity;
- ✿ Environmental Incidents and investigations are completed in accordance with relevant regulations and SOWFL requirements;
- ✿ Working with the Consents Management Team and Environmental Manager to ensure that audit findings are closed out in a timely manner;
- ✿ Implementation and maintenance of the SOWFL Dropped Object Procedure (2020) including management of the Dropped Object Register with the Environmental Manager; and
- ✿ Completion of the Weekly Construction Consent Checklist.

## **5. HEALTH, SAFETY AND ENVIRONMENTAL POLICY**

- 5.1.1 RWE's Health, Safety and Environmental (HSE) Policy sits at the highest level of the company's functions and operations. The CEMO ensures that the contractors' environmental management plans encompass the policy and sets out targets and objectives to ensure compliance and continual improvement associated with environment in conjunction with the project works.

# RWE

## RWE Renewables Health, Safety and Environment Policy Statement

#Enjoytomorrow



As a member of the RWE family, RWE Renewables rallies behind RWE's purpose: Our energy for a sustainable life. It describes why we exist and what drives us forward every day. We are passionate about renewables and the impact we create for the world. We are responsible corporate citizens and have a positive environmental, economic and societal contribution.

### Health, Safety and Environmental Excellence the Cornerstone of Sustainable Performance

At RWE Renewables we believe that long-term, sustainable success can only be reached through people. We create and provide safe and healthy working conditions. We believe that all accidents are preventable and therefore, one accident is one too many. We are passionate about helping to protect our planet and are committed to support societies globally to meet the United Nations' two degree target and commit to net zero by 2040.

In short: We care for each other, our assets and the environment wherever we operate, whatever we do.

### Our Care Commitments

We live the following commitments and require all colleagues and encourage all business partners to abide by these and act accordingly:

- Our management visibly demonstrates leadership in Health, Safety and Environment (HSE) throughout all our business processes, activities and decisions.
- We take decisive action to ensure and promote the health and safety of all employees, business partners and neighbours as well as to assure the protection of the environment – no matter where we are or what we do. We avoid hazards, reduce risk and continually improve our performance.
- We devote energy and attention to prevent harm, and to maintain and improve the health and wellbeing of employees, business partners and others involved with us along the value chain.
- We empower and expect our colleagues and business partners to take personal responsibility, role-model HSE and be brave by stopping unsafe work and challenging unsafe conditions.
- We appreciate and recognize good HSE behaviour and performance, strive to find safer ways of working and take pride in actively sharing good HSE practice.
- We welcome constructive feedback and challenge on the implementation of our HSE Policy.
- We take a holistic, life-cycle wide approach to environmental protection aiming at reducing environmental impacts whilst increasing the production, storage and use of green energy.
- We are committed to ensuring the integrity of our assets to increase clean energy production whilst preventing harm to people and the environment.

**We care today, so everyone enjoys tomorrow**



Anja-Isabel  
Dotzenrath



Tom Glover



Halger Himmel



Silvia Orth Rios



Sven Utermöhlen



Katja Wunschel

[rwe.com](http://rwe.com)

## 6. MARINE POLLUTION CONTINGENCY PLAN (MPCP)

### 6.1 OVERVIEW

- 6.1.1 As outlined within **Error! Reference source not found.**1, the PEMMP must include detailed measures in response to an actual marine pollution incident in the form of a Marine Pollution Contingency Plan (MPCP). The plan is relevant for all works up to MHWS. Where there is an interface with the onshore works, at the landfall, the Environment Manager will manage this to ensure compliance with both this plan and the arrangements established within the CEMO and associated H&S Plan.
- 6.1.2 The purpose of this MPCP is to provide the necessary information to deliver an effective and proportionate response to all pollution incidents arising from SOWF.
- 6.1.3 In accordance with the dML (Schedule 9, Condition 16(d)(i) and Schedule 11, Condition 14(d)(i) (as varied in April 2019)), this section of the PEMMP addresses the risks, methods and procedures to deal with any spills and collision incidents during construction and operation of the authorised scheme in relation to all activities carried out.
- 6.1.4 The MPCP sets out the roles and responsibilities of those persons likely to be involved in reporting and responding to a spill. This MPCP covers all vessels and activities being undertaken for SOWF. This includes vessels in transit to and from the site when under contract.
- 6.1.5 All potential pollutants used throughout the works and held on the turbines and the OCP must be banded to at least 110% of the volume of the storage container (dML Schedule 9, Condition 14(6) and Schedule 11, Condition 12(6) (as varied April 2019)) and therefore the risk of any spill from a stored pollutant is considered to be very low as the banding will act as the primary mitigation measure. As such, the primary focus of this MPCP is on the reporting and management of spills from vessels or activities associated with the construction or operation of the project rather than from stored material.

### 6.2 INTERFACING PLANS

- 6.2.1 All vessels working on SOWF that are 400 tonnes (gross) or more, are required to have an approved Shipboard Oil Pollution Emergency Plan (SOPEP) under Regulation 37, Annex I of the International Convention for the Prevention of Pollution by Ships (MARPOL). In addition, under Regulation 17 of Annex II of MARPOL, any ship of 150 gross tonnage or more, certified to carry noxious liquid substances in bulk, is required to have a Shipboard Marine Pollution Emergency Plan (SMPEP). Given that vessels involved on SOWF are not anticipated to be carrying noxious substances in bulk, a SMPEP is not likely to be required for SOWF. Small work boats will be required to comply with the MCA Small Work Boat Code (Edition 2, 2018)<sup>4</sup>.

<sup>4</sup>  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/769826/Workboat\\_Code\\_2\\_FINAL\\_12.18.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769826/Workboat_Code_2_FINAL_12.18.pdf)

- 6.2.2 The Environmental Manager will review the relevant Contractor SOPEPs (where applicable) to confirm that they align with this MPCP.
- 6.2.3 The procedures in this plan provide guidance that will be adhered to, along with procedures outlined in any SOPEP. The MPCP also aligns with the following plans:
- ✿ The construction port<sup>5</sup> Oil Spill Contingency Plan which sets out how Harbour Authorities and other relevant organisations deal with an oil spill incident;
  - ✿ The MMO Marine Pollution Contingency Plan<sup>6</sup> (MMO, 2020): and
  - ✿ The National Contingency Plan: A Strategic Overview for Responses to Marine Pollution from Shipping and Offshore Installations<sup>7</sup> (MCA, 2014).
- 6.2.4 Following the completion of construction, the MPCP will be updated to ensure that it is relevant for the operational phase.

## 6.3 ROLES AND RESPONSIBILITIES

### ROLES AND RESPONSIBILITIES AND RACI

- 6.3.1 Table 6.1 presents the RACI Chart for the maintenance and implementation of the MPCP.

<sup>5</sup> The MMO and its regulator advisors will be informed of the location of the construction ports once they have been selected

<sup>6</sup>  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/870123/Marine\\_Pollution\\_Contingency\\_plan.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/870123/Marine_Pollution_Contingency_plan.pdf)

<sup>7</sup>  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/638623/170817\\_NCP.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/638623/170817_NCP.pdf)

**Table 6.1 SOWF Marine Pollution Contingency Plan RACI Chart**

Procedural Responsibilities	General Site Manager (GSM)/ Principal Contractor (PC)	Incident Commander (IC)	Vessel Masters (VM)	Marine Coordinators (MC)	Environmental Manager (EM)	SOWF Health and Safety Advisor (H&S)	Technical Advisors (TA)/ Tier 2 Response Contractor	SOWFL Contractors and sub-contractors
Ensure adequate resources and budgetary support is provided for marine contingencies and overall implementation of the MPCP.	A	R	R					R
Determine the initial level of manpower and equipment mobilisation required to adequately manage pollution incidents.	A	R	R		C		C	R
Obtain relevant information relating to the incident, ensure that an Incident Log has been started and Pollution report (POLREP) (MCA) Report Form has been completed, obtain regular briefings from clean-up supervisor on progress of clean up.	A	R	R	R	I & C		C	
Within Offshore site: ensure that statutory reporting requirements and offshore Oil/Chemical Proforma (HSE, MMO, NE etc.) have been completed.	A	R	R	R	R	C		
On transit and out with Offshore site: determine level of response that has been initiated and inform MCA, EA and NE of intended response. Determine level of response required from duty personnel.	I	I	A & R	I	I	I	I	A & R
Advice on legislation, monitoring, handling, storage, transport and disposal.	A			C	R	C		
Inform all contractors and subcontractors of the MPCP and disseminate associated documentation as required.	A & R							
Comply with the MPCP and provide bridging documents as required and participate in exercises and programmes.	A	R	R	R	C	C	R	R
Provide spill response equipment up to Tier 2 spill specification in SOWFL Offshore site.	A	R	R	I	C	C	R	R

R – Responsible for performing the action; A – Accountable to ensure action happens; C – Consulted during the action; I – Informed after the action is complete

### SOWFL RESPONSIBILITIES

- 6.3.2 SOWFL as the Principal Contractor (PC) offshore has the operational responsibility for a pollution incident originating from the SOWF throughout the lifetime of the Project.
- 6.3.3 As such, the Principal Contractor would be responsible for:
- ✿ Implementing the MPCP and the production of any project-specific documentation contained herein;
  - ✿ Managing an ongoing spill response; and
  - ✿ Liaising with the relevant statutory bodies in the event of a spill.
- 6.3.4 The PC will be defined according to the requirements of the CDM Regulations and the final construction management system employed by SOWFL.

### CONTRACTOR RESPONSIBILITIES

- 6.3.5 As discussed previously, all vessels that are > 400 t (gross), are required to have an approved SOPEP and any vessels of > 150 t (gross), certified to carry noxious liquid substances in bulk, are required to have a SMPEP.
- 6.3.6 It is the Contractor's responsibility to ensure that they conduct their activities in accordance with their SOPEP and any other relevant legislation.
- 6.3.7 All contractors will comply with the requirements set out within this PEMMP. All Contractors will be required to adopt this MPCP and ensure that their own emergency response procedures align with the obligations set out herein.
- 6.3.8 All spills, regardless of type or size, must be reported as set out below.

### REGULATORY AND AUTHORITY RESPONSIBILITIES

- 6.3.9 In the UK, there is a defined structure and procedure for responding to spill incidents which clearly defines the roles and responsibilities of the UK Government (including environmental agencies), local Maritime Authorities and the MMO as outlined in Table 6.2. In the case of the use of oil spill treatment products (i.e. dispersant) being requested, the MMO will grant approval following consultation with its advisors on a range of aspects.

**Table 6.2 Regulatory Advisors and their Responsibilities**

Authority	Description of responsibility	Area of jurisdiction						
		Harbour limits	HWS	LWS	3NM	6NM	12NM	200NM
Marine Management Organisation (MMO)	Responsible for the protection of the marine environment and fisheries in England and approval of dispersants and marine pollution emergencies.	✓	✓	✓	✓	✓	✓	✓
Department for Business, Energy & Industrial Strategy (BEIS)	Responsible for environmental regulation, prevention, monitoring and reporting illegal discharges of oil at sea from offshore installations and approval of oil pollution emergency plans.	✓	✓	✓	✓	✓	✓	
Joint nature Conservation Committee (JNCC)	Advises the Government on environmental matters and must be notified so that they may assess any likely effect on sea birds and mammals.							✓
Natural England (NE)	Natural England provides advice relating to designated sites, habitats and species and the likely environmental impacts of pollution. Natural England provides advice on: <ul style="list-style-type: none"> <li>• Location and features of designated sites</li> <li>• Sensitivity of those features to marine pollution</li> <li>• Priorities for protection from any pollutants</li> <li>• Suitability of various clean-up techniques</li> </ul> This advice could be provided directly or through their representative on the established Standing Environment Group (SEG)*.	✓	✓	✓	✓	✓	✓	
Environment Agency	Should be notified if a spill is likely to encroach within 3 nm of the coastline. They have responsibility for water quality in coastal and estuarine areas and will also consider waste disposal concerns.		✓	✓	✓			
Marine and Coast Guard Agency (MCA)	MCA is required to react to maritime incidents and to have a comprehensive response procedure to deal with any emergency at sea that causes or threatens to cause a pollution incident.	✓	✓	✓	✓	✓	✓	✓
Local planning Authorities (LPAs)	LPAs have powers to take action in the event of serious damage to or risk to human welfare of the environment.		✓					
Harbour Authorities	Have responsibilities within the harbour limits.	✓						
Her Majesty's Revenue and Customs (HMRC)	Cover import duties when oil is brought to shore as a result of a spill							

\* Works undertaken for SOWF will be within the North East SEG as redefined in 2019.

## 6.4 CATEGORISATION OF INCIDENT

- 6.4.1 In line with best practice the Project has determined to adopt a variant of the MCA structure for incident categorisation as outlined in Section 6.5. The MCA has a three-tiered approach describing the scale of an incident under their National Contingency Plan. These tiers are not given generic quantification, assessments are made based on potential risks in specific areas and responses are planned accordingly, therefore the quantities noted in SOWFL’s categorisation in Table 6.3 below must be considered as indicative only. The tiers identify the resources which are required in responding to spills of increasing magnitude by extending the geographical area over which the response is co-ordinated.
- 6.4.2 For the purposes of this MPCP and in line with SOWFL incident categorisation matrix the oil spill tiers are defined in Table 6.3 below. The level of response will be broadly dependent upon this tier classification. However, the specific response to a pollution incident may require additional support and resources, dependent on the type and scale of the pollution.
- 6.4.3 In the event of a Tier 1 or Tier 2 incident, the MCA is unlikely to intervene, but will monitor the incident and provide advice if necessary, in respect of a response action. In the event of, or in the likelihood of, an escalation in an incident, the MCA may assume control and will inform the Secretary of State’s Representative for Maritime Salvage and Intervention (SOSREP), who may assume overall incident control.

**Table 6.3: MCA Categorisation of oil spill incidents**

Tier	Scale	Description
1	Local	Small operational spills of local geographical reach where events can be successfully controlled by onsite or readily deployed resources. A Tier 1 spill will involve an internal response only, except for the purpose of notification to the regulators.
2	Regional	Medium sized spills of regional or national geographical reach will be handled by the personnel nominated within this plan and the additional services of an incident response contractor or other external assistance, where the immediate internal resources available are considered insufficient to cope with the incident. A Tier 2 incident may involve local government and could be subject to government controls should the internal response not be effective.
3	National	Larger volume spills or an incident involving a significant loss of containment will require full involvement of other authorities and possible mobilisation of Tier 3 and national stockpiles. A Tier 3 incident is one that is beyond the capability of both local and regional resources and will be subject to government controls. More complex arrangements would be required to be in place, which should include SOWFL representation at a multi-agency co-ordination structure that may be convened at strategic and tactical levels.

## 6.5 SOWFL INCIDENT CLASSIFICATION

- 6.5.1 SOWFL internally classifies incidents within three categories based on the MCA Categorisation which considers people, assets or the environment as detailed below. Appendix C provides further details each of the categories and describes the necessary internal notifications, reporting, investigations and documentation that are triggered. A summary of the three incident categories is summarised below and their linkage to the tiered spill response categories detailed above indicated:

 **Category High (H):** A serious or major incident requiring immediate notification (immediate information by phone within 6 hours) (links to **Tier 3**).

- ☼ **Category Medium (M):** A moderate incident requiring formal notification via email within 24 hours (links to **Tier 2**).
- ☼ **Category Low (L):** A minor incident, requiring formal notification via email within 24 hours (links to **Tier 1**). All incidents should be reported within the Contractors weekly and monthly reports (as appropriate). Reporting timelines are consistent with the requirements of MCA and MMO, however RWE have their own requirements for reporting as set out in documents RD 302 A01 Classification Notification and RD-302 Incident Management which all personnel will also be required to adhere to.

**Table 6.4 – SOWFL Categorisation Table of oil spill incidents**

MCA Tier	SOWFL Category Matrix	Oil Volumes
<i>De minimis</i> provision	Low (L)	< 5L Liquid
1	Low (L)	< 100L Liquid < 100kg Gaseous/Solid
2	Medium (M)	100 to 10,000L Liquid 100 to 10,000 kg Solid
3	High (H)	> 10,000L Liquid >10,000kg Gaseous/Solid

- 6.5.2 A spill of five litres or less may well be visible and capable of containment and removal, in those circumstances the practice is that this will be dealt with in accordance with this plan, in all instances the spill must be reported to the SOWFL and Coastguard via a POLREP.

## 6.6 RESPONSE STRATEGIES

- 6.6.1 Due to the nature of the works at SOWF, the most likely spill incidents are expected to be classified under Tier 1 (Category L), caused by small spills of diesel or other fuel arising from vessel operations or leaks or spills of hydrocarbon from plant or machinery. These spills are likely to be dealt with through the respective vessels own SOPEP, however, the statutory notifications in this MPCP would still need to be followed (see Figure 5).
- 6.6.2 The responsibility of elevating an incident classification and designating an Incident Commander (IC) lies with the HSE Manager, in consultation with the Environmental Manager and Lead/Duty Marine Co-ordinator.
- 6.6.3 The suitable spill response strategies that may be implemented are outlined within Figure 4. Under most cases, the preferred response will be to monitor, evaluate and allow natural dispersion.
- 6.6.4 SOWFL will retain the services of a Category M Spill response Contractor to assist with the management of any incidents of medium categorisation and above.
- 6.6.5 If appropriate, an Oil Spill Response Management Team will be set up lead by an Incident Commander in consultation with the HSE Manager and Lead/Duty Marine Co-ordinator to respond to specific spills and to liaise with the Contractor, the Category M oil Spill response Contractor, relevant authorities and any external resources that may be required.
- 6.6.6 The SOWF Emergency Response Plan (SOWFL, 2020) will be followed when responding to a notification of an incident or any other event that has already or has the potential to result in a threat to life, serious injury, the environment, infrastructure or reputation of SOWF.

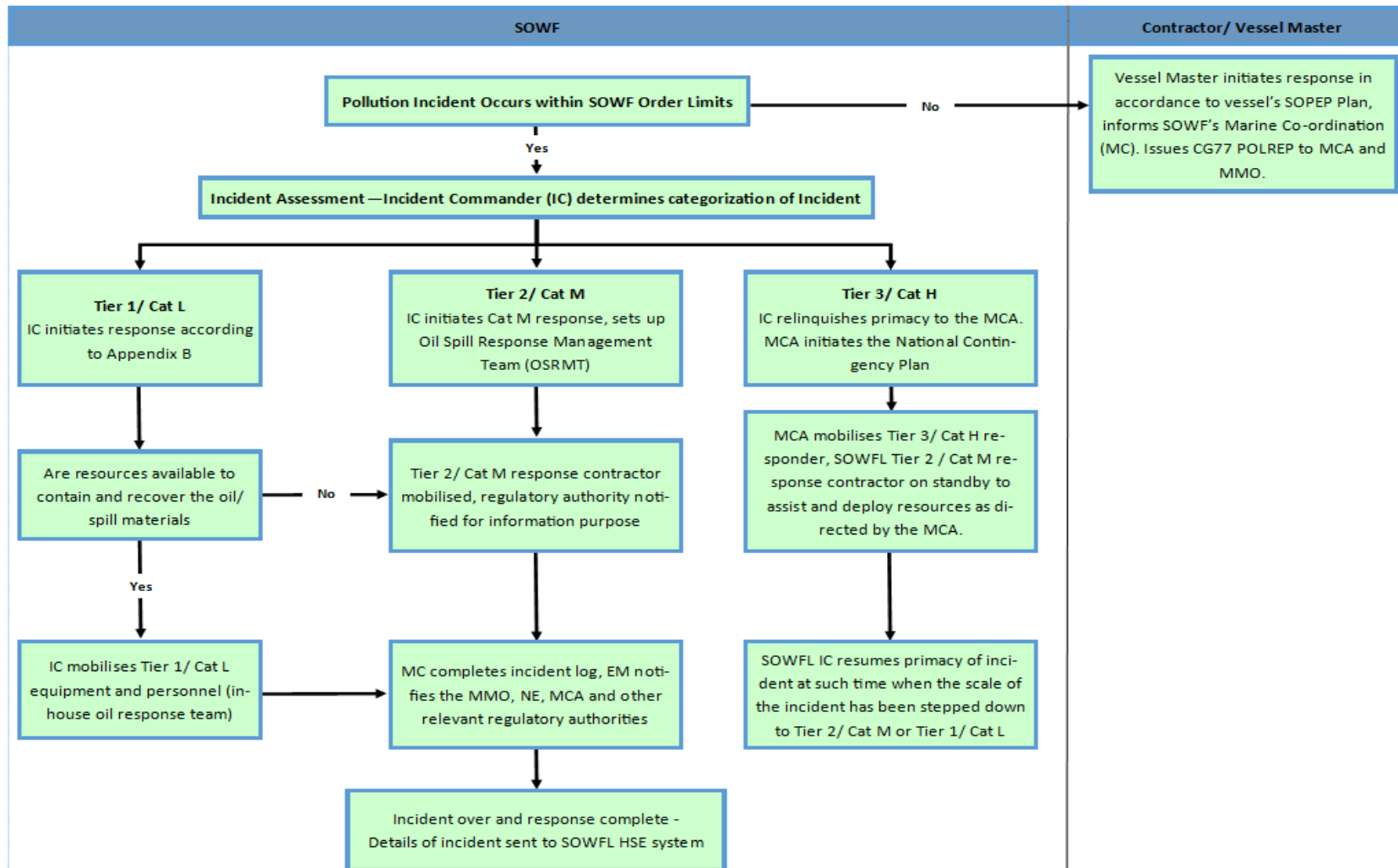


Figure 4 Potential Spill Response Strategies

## 6.7 REPORTING AND NOTIFICATION PROCEDURES

6.7.1 All spills, regardless of type or size, must be reported including:

- ✦ Any spills of diesel, lubricants, hydraulic fluids, or any chemicals etc.
- ✦ Any visible sheen of oil on the sea surface
- ✦ Any spills of an attributable source.

6.7.2 In such an event, responses will be prioritised using the *PEAR* principle, and therefore, where there is no potential for injury or risk to personnel on site, the environmental aspect of the spill will take priority:

1. People
2. Environment
3. Asset
4. Reputation

6.7.3 Figure 5 shows the initial actions to be followed in the event of an spill or collision incident. It is important to note that the person expected to undertake the initial notifications will vary depending on whether the incident is from a vessel or whether that vessel has a Client Representative on board.

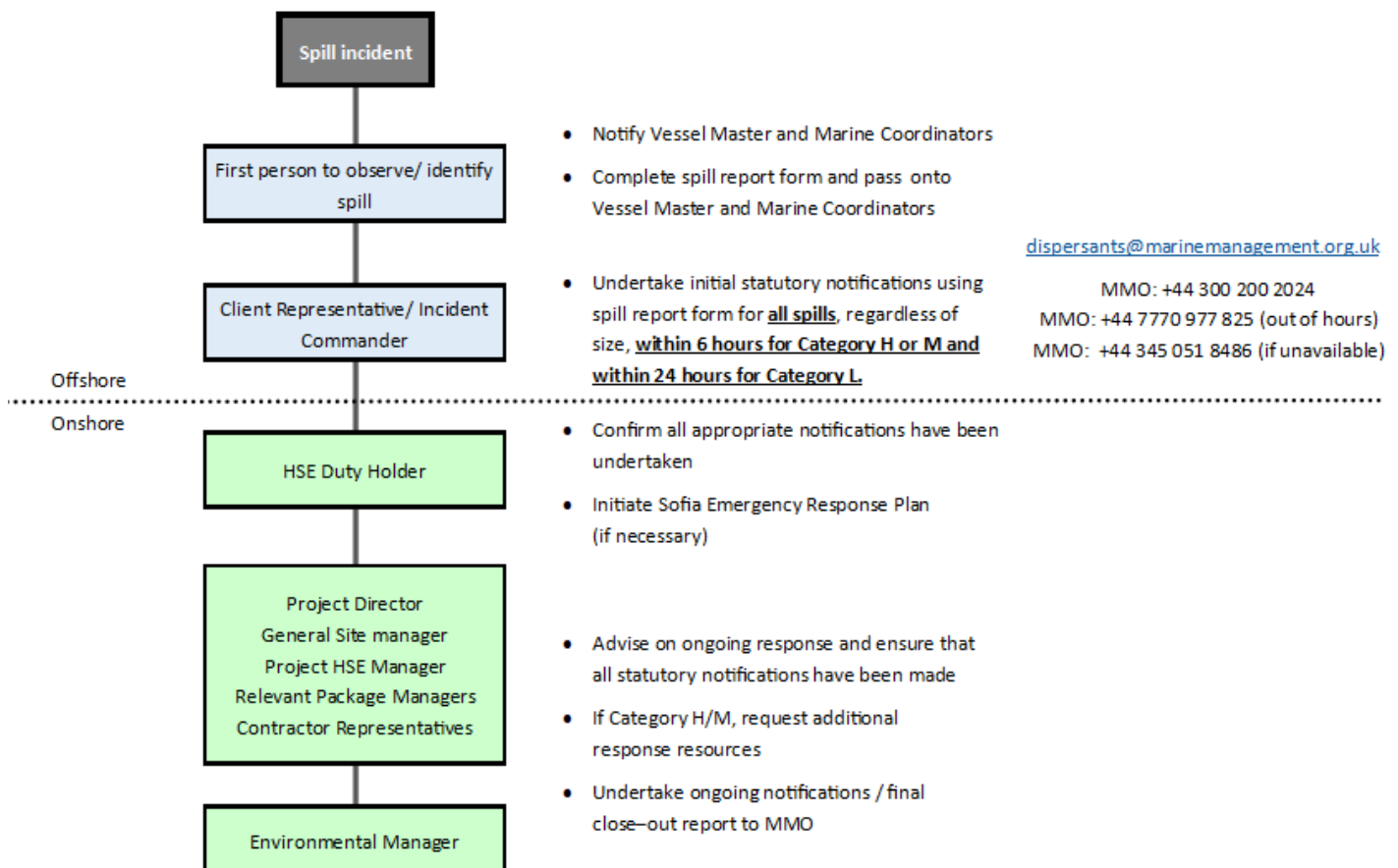
- ✦ If on a vessel and a Client Representative is on board, the Client Representative will undertake the initial notification duties to the Incident Commander and/or Lead/Duty Marine Co-ordinator.
- ✦ If on a vessel and a Client Representative is not on board, then it will be the responsibility of the Vessel Master to fulfil the role and undertake the initial notifications.
- ✦ If not on a vessel, the Contractor must inform the Incident Commander and/or Lead/Duty Marine Co-ordinator.

6.7.4 In all cases, the Client Representative, Vessel Master Incident Commander or Lead/Duty Marine Co-ordinator will inform the relevant authorities (MMO and local coastguard operations office), the Environmental Manager and the HSE Manager of the incident. Notifications should initially be reported via telephone, followed up with an email which details as much of the information as possible using Form CG 77 (POLREP) (Appendix C) in accordance with the relevant timescales: Category M (Tier 2) and Category H (Tier 3) spills need to be reported within 6 hours and Category L (Tier 1) spills within 24 hours.

### POST POLLUTION MONITORING

6.7.5 Following a spill there may be a need to undertake monitoring depending on whether the incident is expected to have the potential for a significant environmental impact. This is influenced by the nature of the oil and/or chemical spilled, or potentially spilled, the quantity, the location and the resources at risk locally. The need for monitoring will be discussed with the relevant authorities

- 6.7.6 The PREMIAM guidelines should be consulted which provide the key principles of an environmental monitoring programme should one be required. They also describe why, where, when, what and how monitoring is conducted, and key scientific techniques and approaches to be taken into. The Premium Guidelines can be found at <https://www.cefas.co.uk/premium/guidelines.aspx?RedirectMessage=true>
- 6.7.7 Contact details for the relevant authorities are provided in APPENDIX A.
- 6.7.8 The responsibilities for subsequent actions are detailed in the following Action Checklists.



**Figure 5 Overview of Actions in the event of an Incident – Contractors to refer to the Sofia Offshore Wind Farm Emergency Response Plan as appropriate**

## 6.8 ACTION CHECKLISTS

- 6.8.1 Action checklists have been prepared in accordance with the SOWF Emergency Incident Notification Procedure (SOWFL, 2020).

### FIRST PERSON SIGHTING A SPILL

- 6.8.2 The role and responsibilities of the first person sighting a spill incident are presented within Table 6.5.

**Table 6.5 First Person Sighting a Spill Incident**

First Person Sighting a Spill		
Responsibilities and/or Actions	Actioned	Reference
1. Notify the Vessel Master/Client Representative/Contractor of a spill incident, providing details of: <ul style="list-style-type: none"> <li>⌘ Time;</li> <li>⌘ Current spill location;</li> <li>⌘ Source of spill;</li> <li>⌘ Oil/chemical type;</li> <li>⌘ Estimate of quantity spilt;</li> <li>⌘ Any other relevant actions.</li> </ul>	<input type="checkbox"/>	APPENDIX C
2. Contact all personnel in the vicinity of the leak or spill and warn them of the potential hazard.	<input type="checkbox"/>	
3. Act as instructed by the Vessel Master.	<input type="checkbox"/>	
4. <b>If safe to do so</b> , stay in the vicinity of the leak or spill and continue to observe/monitor.	<input type="checkbox"/>	
5. <b>If safe to do so</b> , take any reasonable action to contain or minimise the leak or spill.	<input type="checkbox"/>	
6. Maintain a log of all actions and provide to the Vessel Master when requested. The Vessel Master will disseminate this information to the HSE Manager, Environmental Manager and relevant response teams.	<input type="checkbox"/>	

## VESSEL MASTER

6.8.3 The role and responsibilities of the Vessel Master are presented within Table 6.6.







**Table 6.6 Vessel Master Responsibilities and Actions**

Vessel Master		
Responsibilities and/or Actions	Actioned	Reference
1. Receive report and take initial charge of the situation	<input type="checkbox"/>	
2. <b>If safe to do so</b> , immediately initiate actions to identify the source of the spill and take any reasonable action to contain or minimise the leakage at source.	<input type="checkbox"/>	
3. Ensure the safety of all personnel, the vessel and any other vessels/assets within 500 m of the spill	<input type="checkbox"/>	
4. Activate the SOPEP (if spill is associated with the vessel)	<input type="checkbox"/>	
5. If there is <b>no</b> Client Representative on board the vessel, then the Vessel Master assumes the role of the Client Representative  If there <b>is</b> a Client Representative on board, then the Vessel Master notifies them <b>immediately</b> .  Client Representative (or Vessel Master) notifies the relevant authorities and the Lead/Duty Marine Co-ordinator (Incident Commander), the HSE Manager and Environmental Manager in accordance with the required timescales for Category H, M and L spills.	<input type="checkbox"/>	Table 4.1
6. Assess the ongoing nature of the spill and the possible need to mobilise additional resources. Act as instructed by the Lead/Duty Marine Co-ordinator and maintain close contact with the HSE Manager and Environmental Manager in making spill assessments.	<input type="checkbox"/>	Table 4.1
7. In most cases (i.e. Category L), unless there are compelling reasons to do so, the spill will be monitored and will be allowed to disperse naturally.	<input type="checkbox"/>	
8. In the event of a diesel spill and where safe to do so, consider 'prop washing' to aid natural dispersion of a diesel spill.	<input type="checkbox"/>	
9. If possible, and where the source of the spill is undetermined, consider taking a sample of the spilt substance.	<input type="checkbox"/>	
10. Maintain a chronological log of all events and actions taken. Maintain until stand-down.	<input type="checkbox"/>	
11. At the end of the incident, collate logs and prepare incident report for SOWFL.	<input type="checkbox"/>	

## LEAD/DUTY MARINE CO-ORDINATOR

### 6.8.4 The role and responsibilities of the Lead/Duty Marine Co-ordinator (Incident Commander) Table 6.7 .











**Table 6.7 Lead/Duty Marine Co-ordinator Responsibilities and Actions.**

On-Scene Commander		
Responsibilities and/or Actions	Actioned	Reference
1. Receive report and take charge of the situation	<input type="checkbox"/>	
2. <b>If safe to do so</b> , take any reasonable action to contain or minimise the leak or spill.	<input type="checkbox"/>	
3. Ensure the safety of all personnel, the vessel and any other vessels/assets within 500 m of the spill	<input type="checkbox"/>	
4. Notify the following personnel <b>immediately by Telephone</b> : <ul style="list-style-type: none"> <li> The Duty / Lead Marine Co-ordinator in the Marine Co-ordination Centre</li> <li> HSE Manager</li> <li> General Site Manager</li> <li> Environmental Manager</li> </ul>	<input type="checkbox"/>	Figure 4 Table 4.1
5. Gather information and complete the Spill Notification Form (GC77).	<input type="checkbox"/>	APPENDIX C
6. Use the completed Spill Notification Form and undertake the following Statutory Notifications <b>immediately</b> or at least <b>within 6 hours of Category H or M and within 24 hours for Category L spills</b> : <ul style="list-style-type: none"> <li> MMO</li> <li> HM Coastguard</li> </ul> <p>For ongoing spills, submit subsequent updates by telephone or email.  <b>Note that this may be delegated to the Environmental Manager during office hours.</b></p>	<input type="checkbox"/>	Figure 4 APPENDIX A
7. Inform nearby vessels of the spill and likely trajectory of the slick	<input type="checkbox"/>	
8. Confirm source and estimate quantity of oil/chemical spilt. Classify Category and likely spill movement in conjunction with the HSE Manager.	<input type="checkbox"/>	Section 6.4
9. Assess the ongoing nature of the spill, suitable response strategies and possible need to mobilise additional resources. Maintain close contact with the MCC, HSE Manager, Contractor and the Environmental Manager in making this assessment.	<input type="checkbox"/>	Section 6.6
10. In most cases (i.e. Category L), unless there are compelling reasons to do so, the spill will be monitored and will be allowed to disperse naturally.	<input type="checkbox"/>	
11. Maintain a chronological log of all events and actions taken. Maintain until stand-down.	<input type="checkbox"/>	
12. At the end of the incident, collate logs and prepare incident report for RWE.	<input type="checkbox"/>	

## HSE MANAGER

6.8.5 The HSE Manager will be notified of an incident by the Lead/Duty Marine Co-Ordinator (Incident Commander), the Client Representative or the Vessel Master. The HSE Manager will be available 24/7. Their roles and responsibilities are presented in Table 6.8.

**Table 6.8 Project HSE Manager Responsibilities and Actions**

HSE Duty Holder		
Responsibilities and/or Actioned	Actioned	Reference
1. <b>Immediately</b> contact the MCC to determine the severity of the situation and response required.	<input type="checkbox"/>	APPENDIX A
2. Establish communications with the relevant offshore personnel.	<input type="checkbox"/>	
3. Confirm that the MMO and Coastguard have been informed of an incident. Request the Environmental Manager continues liaison with these stakeholders and provides regular updates.	<input type="checkbox"/>	Figure 4 APPENDIX A
4. In conjunction with the MCC and Lead Marine Co-ordinator, confirm source and estimate quantity of oil/chemical spill.	<input type="checkbox"/>	
5. If the spill is agreed to be a Category L incident, notify the MCC and discuss initial details of the incident and action taken and determine potential for escalation. If determined that it will remain Category L, remain on standby to provide advice and assistance along with the MCC. Notify the following personnel of the incident during the next working hours/day: <ul style="list-style-type: none"> <li> Construction Director</li> <li> General Site Manager</li> <li> Relevant Package Manager</li> <li> Contractor Site Manager</li> <li> Environmental Manager</li> </ul>	<input type="checkbox"/>	Table 4.1
6. Where it is confirmed to be a Category H/M incident or where there is the potential to escalate, initiate the SOWF Emergency Response Plan (ERP).  If additional external resources and support are required from an oil spill response contractor such as Oil Spill Response Limited or Sea Alarm, it is the responsibility of the HSE Manager, with authorisation of the Project Director, to call-out external response contractors. The MMO will be advised if this course of action is undertaken during the regular updates throughout the course of an incident.  In accordance with the ERP then <b>immediately</b> notify and mobilise: <ul style="list-style-type: none"> <li> Construction Director</li> <li> General Site Manger</li> <li> Relevant Package Manager</li> <li> Contractor Site Manager</li> <li> Environmental Manager</li> </ul>	<input type="checkbox"/>	Table 4.1
7. Confirm that other vessels and any asset owners in the vicinity of the spill have been informed.	<input type="checkbox"/>	

HSE Duty Holder		
Responsibilities and/or Actioned	Actioned	Reference
8. In liaison with the Environmental Manager: <ul style="list-style-type: none"> <li>☛ Ensure that spill has been correctly quantified;</li> <li>☛ Ensure Category has been correctly classified;</li> <li>☛ Consider escalation potential;</li> <li>☛ Determine appropriate response strategy and available resources;</li> <li>☛ Assess the need to mobilise additional resources; and</li> <li>☛ Obtain up-to-date information on meteorological conditions at the site.</li> </ul>	<input type="checkbox"/>	Section 6.6
9. In most cases (i.e. Category L), unless there are compelling reasons to do so, the spill will be monitored and will be allowed to disperse naturally.	<input type="checkbox"/>	
10. Maintain a chronological log of all events and actions taken, until stand-down	<input type="checkbox"/>	
11. At the end of the incident, collate logs and prepare incident report.	<input type="checkbox"/>	
12. Ensure a <i>lessons learned</i> workshop is held soon after the event to improve on processes or procedures where necessary.	<input type="checkbox"/>	

## ENVIRONMENTAL MANAGER

6.8.6 The role and responsibilities of the Environmental Manager are presented within Table 6.9.

**Table 6.9 Environmental Manager Responsibilities and Actions.**

Environmental Liaison Officer		
Responsibilities and/or Actions	Actioned	Reference
1. Receive report and standby to provide advice to the Oil Spill Response Team.	<input type="checkbox"/>	
2. Confirm that the MMO and the local coastguard operations centre have both been notified of the incident <b>within 6 hours of Category H or M and within 24 hours for Category L spills:</b>	<input type="checkbox"/>	Figure 4
3. Obtain up-to-date information on the events that have occurred, in particular: <ul style="list-style-type: none"> <li>☞ Spill type and quantity released</li> <li>☞ Is the release ongoing?</li> <li>☞ Has a sample been taken, is it deemed necessary?</li> <li>☞ How is the spill being tracked?</li> <li>☞ Actions taken so far</li> <li>☞ Obtain up-to-date weather information</li> </ul>	<input type="checkbox"/>	
4. In liaison with the Lead/Duty Marine Co-ordinator and HSE Manager: <ul style="list-style-type: none"> <li>☞ Ensure that the spill has been correctly classified</li> <li>☞ Consider escalation potential</li> <li>☞ Determine appropriate response strategy and confirm requirement for any external resources.</li> </ul>	<input type="checkbox"/>	Section 6.4 Section 6.6
5. Contact the MMO and local coastguard operations centre, provide regular updates if the incident is ongoing and advise on the end/closure of the incident and actions taken. For incidents <b>within 12 nm</b> , the Environmental Manager must notify Natural England. Where an incident may affect the coast, the Natural England local officers should also be contacted. The Environmental Manager should also contact the Environment Agency where a spill is likely to encroach or have an impact within the 3nm limit. For incidents <b>beyond 12 nm</b> , JNCC should be notified.	<input type="checkbox"/>	APPENDIX A
6. Advise on the environmental sensitivities at risk and determine whether dispersant is a suitable response. <b>Records must be kept of any dispersant requests and use<sup>8</sup>.</b>	<input type="checkbox"/>	Section 6.6
7. In most cases (i.e. Category L), unless there are compelling reasons to do so, the spill will be monitored and will be allowed to disperse naturally.	<input type="checkbox"/>	
8. Maintain a chronological log of all events and actions taken, until stand-down.	<input type="checkbox"/>	
9. At the end of the incident, collate logs and prepare incident report.	<input type="checkbox"/>	
10. In co-ordination with HSE Manager carry out team debriefs following Category H, M and L incidents	<input type="checkbox"/>	

<sup>8</sup> Due to the nature of hydrocarbons that may be present during construction of SOWF, it is unlikely that dispersant would be considered an appropriate response strategy. The option is mentioned here in the event that it is requested by the MMO, JNCC, Natural England and/or CEFAS.

11. In co-ordination with HSE Manager ensure that information is provided for lessons learnt and corrective action is carried out for	□	
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## 6.9 TRAINING AND EXERCISES

- 6.9.1 It is important to maintain the capability for a rapid and effective response to any spills or collision incidents. The Lead/Duty Marine Co-ordinator and team members will be suitably trained in order to manage the response.
- 6.9.2 SOWFL require all Contractors to employ appropriately qualified and suitably experienced personnel, where appropriate. The Contractor will be responsible for identifying the training needs of their relevant personnel to ensure that they are suitably qualified and experienced to deal with emergency situations assigned to their role.
- 6.9.3 Tool Box Talks, workshops and training on familiarisation of the spill reporting form, requirements for statutory reporting and use of spill kits will be provided to contractors and key personnel by the HSE Manager, Site HSE Manager and/ or Designated Onsite Environmental & Consent Manager.
- 6.9.4 Familiarisation of the MPCP will also involve drill exercises for Category H, M and L emergencies. These will be either paper exercises to verify communication procedures, or operational exercises involving deployment of personnel, equipment and materials. All exercises shall be observed, and upon completion of each exercise, an evaluation is conducted to examine any deficiencies that may have been identified. This allows revisions and amendments to be made to improve the effectiveness of the MPCP.
- 6.9.5 The Contractors will be required to develop their own EMP and will be expected to carry out drills as agreed with the HSE Manager.

## 6.10 HEALTH AND SAFETY

- 6.10.1 Any pollution incident represents a potentially hazardous environment; in all cases, the health and safety of personnel must take priority. Risk assessments for spills will be followed in all circumstances (both pre-approved and dynamic assessments as applicable).
- 6.10.2 As required by the nature of the incident, the emergency response team may be mobilised; full details of which will be provided within the SOWFL Emergency Response Co-operation Plan (ERCoP). In the absence of the ERCoP, the Emergency Action Card will be implemented. Where applicable, the material safety data sheets of the spilled substance will be used to inform the appropriate responses and the necessary PPE requirements.

## 6.11 ASSURANCE

- 6.11.1 The Environmental Manager will undertake periodic audits to ensure compliance with this plan and relevant associated plans. This will include reviews of spill response equipment, training and competence and waste management following spills.

## 7. CHEMICAL RISK ASSESSMENT (CRA)

### 7.1 OVERVIEW

- 7.1.1 The purpose of this plan is to establish and maintain a system for the control, use, storage, transport and reporting requirements of chemicals during the construction phase of SOWF ensuring compliance with the requirements of the Offshore Chemical Regulations (OCR) as amended and dMLs (Schedule 9, Condition 16(d)(ii) and Schedule 11, Condition 14(d)(ii) (as varied in April 2019))
- 7.1.2 Specifically, this Chemical Management Plan affirms:
- ☼ An effective framework for improving overall environmental and chemical performance while achieving the goal of zero discharge; and
  - ☼ A management approach which allows continuous chemical management improvement and minimisation of environmental impact.
- 7.1.3 The dMLs require that “All chemicals used in the construction of the authorised scheme, including any chemical agents placed within any monopole or other foundation structure void, must be selected from the list of notified chemicals approved for use by the offshore oil and gas industry under the Offshore Chemicals Regulations 2002 unless otherwise agreed in writing by the MMO, and managed in accordance with the chemical risk assessment and the marine pollution contingency plan.” (Schedule 9, Condition 14(1) and Schedule 11 Condition 12(1) (as varied in January 2021).
- 7.1.4 The *List of Notified Chemicals*<sup>9</sup> is a product of the Offshore Chemical Notification Scheme (OCNS) which manages chemical use and discharge by the UK and Netherlands offshore petroleum industries. This has also been applied to the offshore renewables industry, where appropriate, as it incorporates a risk-based approach to chemical use and discharge on the UK Continental Shelf (UKCS). The List of Notified Chemicals is maintained by CEFAS (<https://www.cefass.co.uk/cefass-data-hub/offshore-chemical-notification-scheme/>).
- 7.1.5 The OCNS does not apply to all chemicals, only those that are routinely discharged into the marine environment. It therefore does not include chemicals used during routine maintenance activities on vessels such as lubricants, fuels and coolants, those used in closed systems such as air conditioning systems, hydraulic fluid in cranes, and those chemicals solely used in domestic areas such as potable water systems.
- 7.1.6 Where feasible chemicals that Pose Little or No Risk (PLONOR) shall be selected.
- 7.1.7 Where SOWFL identify that there may be a requirement to use a chemical that is not on the List of Notified Chemicals, full details of the use, storage and transportation will be included in the relevant management plan required under the dMLs associated with the project activity that must be approved by the MMO (for example, the Construction Method Statement or the Cable Specification and Installation Plan).

<sup>9</sup> The CEFAS Definitive Ranked List of Registered Products under the OCNS can be found here: <https://www.cefass.co.uk/cefass-data-hub/offshore-chemical-notification-scheme/> Note that this list is updated on a fortnightly basis and only this link should be used, any other versions are considered uncontrolled and may be incorrect.

- 7.1.8 Where chemicals proposed for use are not on the Definitive Ranked List of Registered Products, a review shall be undertaken to ascertain if the substance can be eliminated or substituted. Should there be no alternative substance on the Offshore Chemical List, SOWFL/Contractors shall provide detailed justification on the proposed use of the chemical to enable SOWFL to seek approval from the MMO in writing. Approval is not guaranteed, it is at the discretion of the MMO and associated statutory consultees. These substances shall not be permitted for use until written approval from the MMO has been received.
- 7.1.9 The MMO must be notified of chemicals used, where there is an opportunity for emission or discharge even accidentally or as a one-off, regardless of whether the chemicals are on the registered list.

## 7.2 CHEMICAL MANAGEMENT

- 7.2.1 The following measures shall be employed by SOWF and their respective Contractors, and incorporated into associated Method Statements as required:
- ✦ SOWF will solely utilise chemicals that are included on the List of Notified Chemicals, unless otherwise agreed with the MMO and CEFAS through the approval of the relevant management plan required under the dML;
  - ✦ Substances and objects to be deposited are inert (or appropriately contained and protected) and shall not contain toxic elements;
  - ✦ Suitable bunding (110% of the total volume of any chemical container) and suitable containers shall be utilised to prevent the release of any stored chemicals into the marine environment.
  - ✦ Contractors will be expected to produce a chemical inventory detailing how and when relevant chemicals will be used, stored and transported (in accordance with relevant guidance and legislation), which will be made available to the HSE Manager and Environmental Manager for approval;
  - ✦ On board the vessels, the Vessel Master will be ultimately responsible for ensuring that chemicals are adequately stored, and that the manufacturer's instructions for the storage, handling and use of the chemical are complied with.
- 7.2.2 Materials Safety Data Sheets (MSDS) and Control of Substances Hazardous to Health (COSHH) forms for each chemical shall be present on the vessels where they are stored and/or used. These data sheets also contain control measures to minimise the risk to the marine environment should they be released.

### CHEMICAL RISK ASSESSMENT REGISTER

- 7.2.3 The Chemical Risk Assessment Register (CRAR) will be completed by each Contractor providing specific details of proposed chemicals relevant to their works and sent to the MMO. It is designed to enable the MMO to review the acceptability of the use of specific chemicals (specific/branded chemicals) throughout the offshore construction phase. Information should be provided but is not limited to the quantity, frequency and method of use, together with any relevant toxicity degradation or bioaccumulation data and justifications or risk assessments for use where there are associated warnings (i.e. substitution warning). The CRAR assesses how much of each chemical is planned to be used on what piece(s) of equipment, how it will be stored for transportation and in what

quantities. Based on these parameters and the best practice techniques used, a risk assessment of the likelihood of a spill to the marine environment is undertaken. The risk assessment is based on the assessment of the storage equipment integrity, and four principal criteria have been identified as being of key importance to the assessment of whether the integrity of the containment equipment is good to very poor. These are:

- ✦ Whether or not the item or equipment is certified;
- ✦ Whether or not the item or equipment is subject to a pre-use inspection;
- ✦ Whether or not an approved Risk Assessment and Method Statement (RAMS) will be in place for the activity; and
- ✦ Whether or not the operator of the item or equipment is competent and trained to operate it.

7.2.4 The risk assessments will be produced and managed through the CRAR in accordance with detailed procedures set out in the SOWFL Health and Safety Management Plan (SOWFL, 2020) and also managed through the contractors’ approved environmental management plans .

### 7.3 ESTIMATED HYDROCARBON AND CHEMICAL INVENTORY

7.3.1 Different types of hydrocarbons and chemicals may be used during the construction and operation of SOWF as presented within Table 7.1.

**Table 7.1 Estimated Inventory of Hydrocarbons and Chemicals for SOWF.**

Type of Hydrocarbon/Chemical	ITOPF Group <sup>10</sup>	Function
Diesel (light)	Group 1/2	Plant/machinery fuel
Intermediate Fuel Oil	Group 3	Vessel fuel.
Marine Gas Oil (Marine Diesel)	Group 2	Vessel fuel.
Lubricating Oil	Group 3	Used for vessels and machinery during construction.
Hydraulic Oil	Group 2/3	Used within hydraulic plant e.g. cranes, machinery, remotely operated vehicles etc.
Chemicals	N/A	Various chemicals used routinely; paints, thinners, solvents, cleaning fluids, cement/grout and drilling chemicals and additives.

Information regarding specific chemicals will be submitted to the MMO in accordance with the procedure described in section 7.2.3.

### 7.4 CHEMICAL USE, STORAGE AND TRANSPORTATION

7.4.1 Appropriate procedures, method statements and risk assessments shall be in place for the use, transport and storage of chemicals in accordance to best practice including, but not limited to: transportation of chemicals in line with the Carriage of Dangerous Goods (CDG) note under the Carriage of Dangerous Goods “ADR” Regulations 2015, International Maritime Dangerous Goods (IMDG) Code; storage of chemicals in line with the Control of Substances Hazardous to Health Regulations (COSHH as amended), HSE

<sup>10</sup> International Tanker Operators Pollution Federation (ITOPF) Classification based on the properties of the hydrocarbons and their likely persistence in the marine environment.

guidance on offshore storage of chemicals OCM guidance note 8, in addition to applicable manufacturers guidance on storage, instructions and recommendations.

- ✿ Method statements shall fully describe the environmental management aspects of storage, spill management and waste disposal arrangements;
- ✿ All hazardous materials shall be stored using impermeable primary and secondary containment. The storage areas for all drums and totes must be bunded and capable of containing at least 110% of the total volume stored within the container;
- ✿ Where drums are transported, bunding must be at least 110% of the total volume of the material being transported;
- ✿ Where drums are temporarily in use in an area outside of any dedicated storage area, spill containment must be at least 110% of the total stored volume;
- ✿ Impermeable bunded chemical storage areas shall be provided at each work front as required;
- ✿ Mobile temporary bunding units and drip trays shall be used at construction work fronts;
- ✿ Spill prevention equipment, including spill kits/plant nappies shall be provided at all locations where a risk of spill is identified;
- ✿ All drums shall be stored in vertical position at all times, including when in use;
- ✿ Only chemicals that don't react with each other shall be stored together, incompatible chemicals must be stored separately. For example: Acids and alkalis shall not be stored within the same storage container. This will prevent the release of quantities of toxic gases in the event of accidental mixing; and acids and organic chemicals shall not be stored at the same location. This should prevent a fire or explosion in the event of accidental mixing; and
- ✿ For chemicals on vessels/Crew Transfer Vessels a nominated individual shall be responsible for ensuring that all chemicals are adequately stored and protected.






## 7.5 CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSHH)

- 7.5.1 All substances in use during the construction phase of SOWF shall be subject to the COSHH (Control of Substances Hazardous to Health) Assessment. SOWFL and Contractors associated with the Project shall undertake an assessment of the chemicals they use on site and on vessels and use this assessment process to ensure that the risk of pollution is minimised by adopting best practice techniques.
- 7.5.2 COSHH assessments shall be undertaken using the manufacturer's safety data sheet (SDS). This will include the following:
- ✿ Identification of hazardous substances;
  - ✿ Collation and recording of product information;
  - ✿ Detailed assessment of hazardous substances;
  - ✿ Use of control measures;

- ✦ Maintenance, examination and test of control measures;
- ✦ Information, instruction and training; and
- ✦ Monitoring and auditing of COSHH assessments and control measures taken by contractors and suppliers as appropriate.

## 8. WASTE MANAGEMENT AND DISPOSAL PLAN (WMDP)

### 8.1 OVERVIEW

- 8.1.1 This section of the PEMMP sets out the Waste Management and Disposal Plan (WMDP) in accordance with the dMLs (Schedule 9, Condition 16(d)(iii) and Schedule 11, Condition 14(d)(iii) (as varied in April 2019)).
- 8.1.2 The purpose of this plan is to establish and maintain a management system for the production, handling, transport, storage, treatment and disposal of waste during the offshore construction phase of SOWF.
- 8.1.3 All SOWFL personnel and Contractors shall comply with the requirements contained herein. Prior to commencement of works, the appointed Contractor shall prepare a Waste Management Plan with detailed processes applicable to their operational requirements.
- 8.1.4 The general methods and principles contained herein, as well as within referenced legislative instruments, shall be adhered to by the Contractor in developing their Waste Management Plan. The regulation of waste and its fate is primarily governed by the Waste Framework Directive (2008/98/EC) which is transposed throughout the UK by The Waste (England and Wales) Regulations 2011<sup>11</sup> (as amended). In accordance with this legislation and The Environmental Protection Act 1990<sup>12</sup>, SOWFL is ultimately responsible for the handling and fate of all wastes generated during its offshore (and onshore operations). This WMDP therefore demonstrates that the handling and treatment of waste and disposals will be in line with the regulatory requirements and that SOWFL are fulfilling their 'Duty of Care' obligations with respect to waste. Further requirements with regard to waste under all other relevant legislation will also be adhered to as required, with all waste management operations carried out as part of the SOWF project being compliant with all applicable environmental legislation and periodically reviewed to accommodate new or changes in legislation.
- 8.1.5 The two SOWF dMLs (Schedules 9 and 11, Part 1, 2(3), as varied in April 2019) authorise the deposit of the following substances or articles at sea associated with the SOWF:
-  iron, steel and aluminium;
  -  stone and rock;
  -  concrete and grout;
  -  sand and gravel;
  -  plastic and synthetic;

<sup>11</sup> <http://www.legislation.gov.uk/ukdsi/2011/9780111506462/contents>

<sup>12</sup> <http://www.legislation.gov.uk/ukpga/1990/43/contents>

- ✿ material extracted from within the offshore areas within the Order limits during construction drilling and seabed preparation for foundation works and cable sandwave preparation works; and

- ✿ marine coatings, other chemicals and timber.

8.1.6 The Waste Management Plan provided by Contractors shall be compliant with the requirements of this plan and shall include but not be limited to:

- ✿ A description of each waste type expected to be produced in the course of the work scope;

- ✿ An estimate of the quantity (volume) of each different waste stream / type of waste expected to be produced;

- ✿ A written statement demonstrating what actions were taken to minimise the volume of each type of waste produced prior to commencement of the activity generating the waste;( Reuse, Recycle, Recover, Dispose) including any treatment;

- ✿ The storage arrangements for each waste type; and

- ✿ Procedures for identification of the waste management actions proposed for each different waste type, including re-using, recycling, recovery and disposal; and

- ✿ Assigned responsibility for the completion of the Waste Returns form required for submission to the MMO.

## 8.2 DISPOSAL AREAS AND PROPOSED ACTIVITIES

8.2.1 Under dML Schedule 9, Part 1, 2(4), a single disposal site has been identified for SOWF based on the site characterisation undertaken as part of the ES. The disposal site identified for construction drilling and seabed preparation for foundation works and cable sandwave preparation works is presented within Figure 6 and is identified as site DG025.

8.2.2 A summary of the activities and volumes of material that may be disposed of within this site are provided below, in Section 8.3.

8.2.3 It is expected that the monopiles will be installed using pile driving. In the event that the pile is refused, a drive-drill-drive methodology may be used. If this is to occur, only water-based drilling muds (WBDM) will be used along with seawater (in accordance with dML Schedule 9, Condition 14(7) and Schedule 11, Condition 12(7) (as varied in April 2019)). Drill spoils using WBDM will be deposited directly onto the seabed adjacent to the monopile. Use of non-WBDM can only be used with prior agreement with the MMO and any subsequent disposals may require a separate Marine Licence application and standalone assessment of potential environmental effects and as such are not within the remit of this document.

8.2.4 Boulder removal and relocation from within the construction areas as necessary will be undertaken, prior to the commencement of any construction activities as authorised under dML Schedules 9 and 11, Part 1 Work No. 2T and Ancillary Works.

8.2.5 Dredging, pre-sweeping of sandwaves and megaripples will be undertaken as necessary, in advance of the infrastructure installation as authorised under dML Schedules 9 and 11, Part 1 Work No. 2T and Ancillary Works. The specific methodologies will be detailed within the relevant Construction Method Statements and Cable Specification and Installation

Plans which will be submitted to the MMO for approval prior to the commencement of the licenced activities.

### 8.3 AUTHORISED DISPOSALS

- 8.3.1 The authorised disposal within the SOWF disposal site is set out in Schedule 9 Part 1, 2(4). A submission to vary Schedule 11 to include for the disposal of material to the disposal site for the construction of the foundations for the OCP has been submitted to the MMO (May 13<sup>th</sup> 2020).
- 8.3.2 The disposal site is identified as disposal area DG025 (as presented within Figure 6) and the dML authorises the disposal of up to **968,789 m<sup>3</sup>**. This disposed material should consist of material of natural origin within Work No. 1B (an offshore wind turbine generating station, see Figure 1), produced during construction drilling and seabed preparation for foundation works and cable sandwave preparation.

### 8.4 MONITORING AND REPORTING REQUIREMENTS

- 8.4.1 The foundation drilling and seabed preparation works will be closely monitored to confirm that the authorised volume and activities identified in the dMLs and above in Paragraph 8.3.2 are not exceeded.
- 8.4.2 Under dML Schedule 9, Part 1, 2(5), SOWFL must inform the MMO of the location and quantities of material disposed of each month, by submission of a disposal return by 31<sup>st</sup> January each year (for the previous months August to January inclusive), and by 31<sup>st</sup> July each year (for the previous months; February to July inclusive) these returns to be made through MCMS. A submission to vary Schedule 11 to include for the reporting of material to be disposed of to the disposal site for the construction of the foundations for the OCP has been submitted to the MMO (May 13<sup>th</sup> 2020).
- 8.4.3 The disposals will be monitored and reported through the Marine Case Management System (MCMS) website, the disposal return forms will require information on each disposal. The required information will be the source location, date, type of material, volume and the reason for disposal (i.e. drilling, sandwave clearance or foundation drilling).
- 8.4.4 In addition, dMLs Schedule 9, Condition 16(c)(x) and Schedule 11, Condition 14(c)(xi) and 11, Part 2, Condition 16(c)(x) (as varied in April 2019) requires the details of the notification of closure for the disposal site to be included within the Construction Method Statement (CMS).

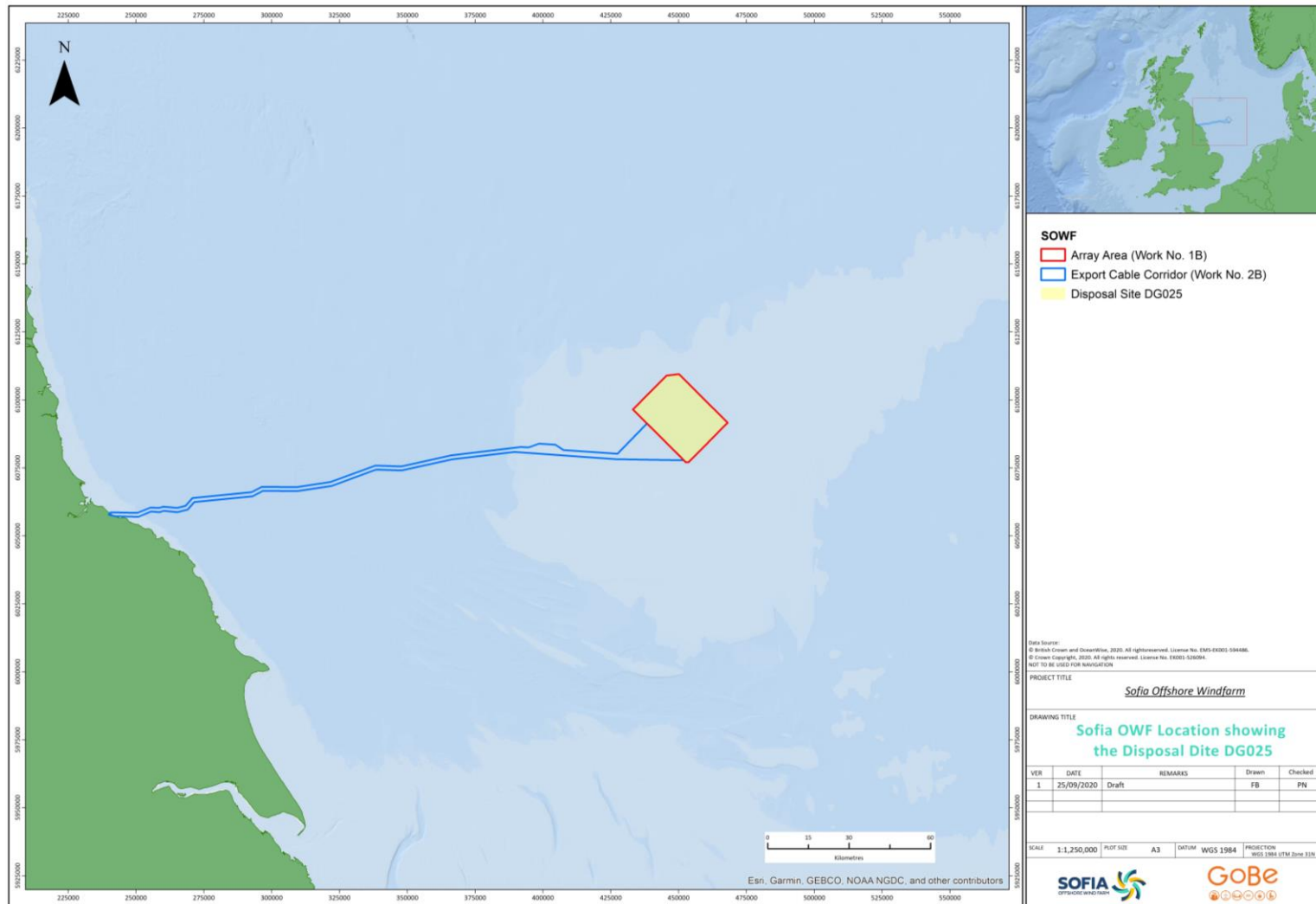


Figure 6 Sofia OWF location and Disposal Site Area

## 8.5 TYPES OF WASTE

8.5.1 The legal definition of waste is “any substance or object which the producer or person in possession of it discards, or intends to discard, or is required to discharge - (Department for Environment, Food and Rural Affairs) (DEFRA), 2012). Note: offshore waste is referred to as garbage under the Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008<sup>13</sup>.

8.5.2 Waste is broadly categorised into hazardous and non-hazardous (general) waste streams, if any waste from an unidentified source is discovered, it will be treated as hazardous (following a precautionary approach). These are defined as follows:

🌀 **Hazardous (Special) Waste** – classified in the Waste Framework Directive as waste that is too difficult or dangerous to dispose of by standard routes such that special provisions are required for its disposal. Examples include medical waste, oil-soaked rags, certain chemicals and batteries. Packaging and containers associated with hazardous waste are also classified as hazardous waste; and

🌀 **Non-Hazardous (General) Waste** – can be divided into putrescible solids (sewage, grey waters and kitchen/food waste) and inert solids (scrap materials, packaging, wood, cardboard, paper etc.).

8.5.3 The types of waste that are likely to be generated during the construction and operation of SOWF are outlined below, but are not limited to:

🌀 OCP generated waste (hydraulic fluids where replacement is required, etc.);

🌀 Offshore waste (dredging and drill arisings); and

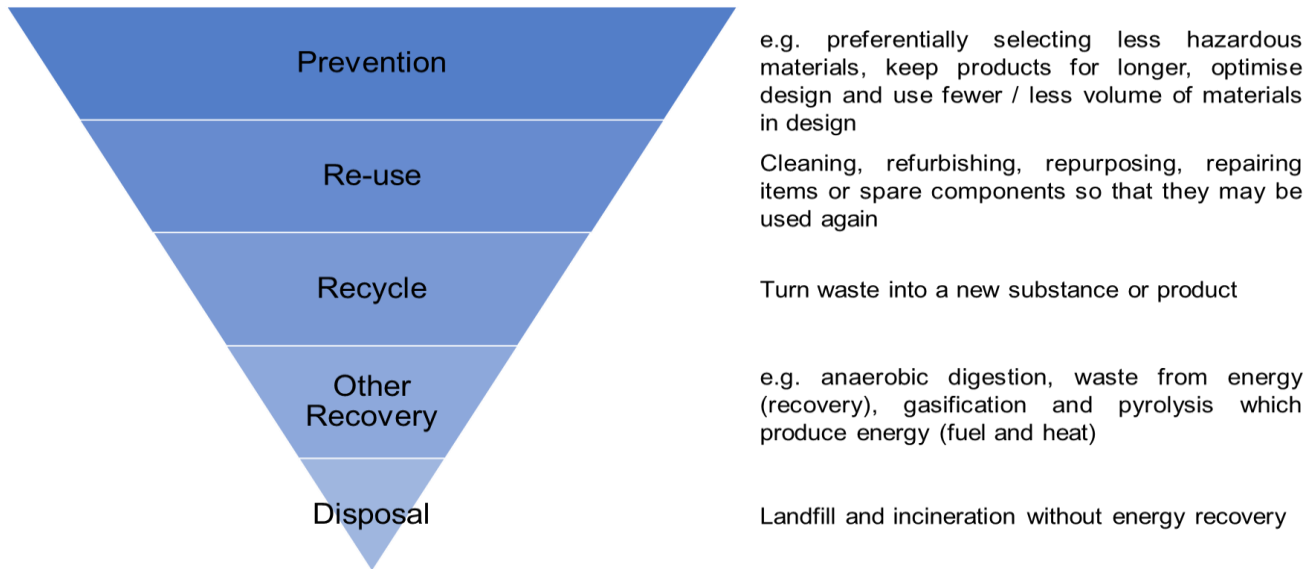
🌀 Vessel waste (such as general waste and sewage).

8.5.4 The most likely types of waste expected to be generated during the construction works are general waste and sewage.

## 8.6 WASTE MANAGEMENT

8.6.1 SOWF and its Contractors will employ the waste hierarchy principles throughout the pre-construction and construction operations, these are summarised below in Figure 7.

<sup>13</sup> <https://www.legislation.gov.uk/uksi/2008/3257/contents/made>



**Figure 7 Overview of Waste Hierarchy (modified from DEFRA, 2011)**

8.6.2 SOWFL and their appointed Contractors shall aim to meet 100% recycling rate where practicable, and aim for a Landfill rate of 10%, only where hazardous waste cannot be treated should landfill be considered as an option. Targets for recycling are detailed below in Table 8.1.

**Table 8.1 SOWFL Waste Hierarchy Targets**

Material	Recycling Rate
Metal	100%
Paper	90%
Timber	90%
Plastic	90%
Masonry Materials/Concrete	90%

## WASTE MANAGEMENT PLAN IMPLEMENTATION

8.6.3 The Waste Management Plan provided by Contractors shall be compliant with the requirements of this plan and shall include but not be limited to:

- ✦ A description of each waste type expected to be produced in the course of the work scope;
- ✦ An estimate of the quantity (volume) of each different waste stream / type of waste expected to be produced;
- ✦ A written statement demonstrating what actions were taken to minimise the volume of each type of waste produced prior to commencement of the activity generating the waste (Reuse, Recycle, Recover, Dispose) including any treatment;
- ✦ The storage arrangements for each waste type; and
- ✦ Procedures for identification of the waste management actions proposed for each different waste type, including re-using, recycling, recovery and disposal; and
- ✦ Assigned responsibility for the completion of the Waste Returns form required for submission to the MMO.

## WASTE IDENTIFICATION AND CLASSIFICATION

- 8.6.4 All wastes generated by the Project shall be classified in accordance with waste regulations. Essentially this requires wastes to be classified as either hazardous or non-hazardous based on specific characteristics. If any waste from an unidentified source is discovered, it will be treated as hazardous (taking a precautionary approach) until an analysis is carried out so as to enable the correct characterization and handling of the materials and a suitable management route identified.
- 8.6.5 Under MARPOL Annex V, all vessels > 400 gross tonnage and/or those carrying > 15 persons, are required to carry a Garbage Management Plan (GMP) on board and must carry a Garbage Record Book to document volumes and types of waste generated and their fates.
- 8.6.6 The roles and responsibilities of key personnel (for offshore construction and works in the intertidal area) are outlined in Table 8.2 (Note: please refer to entire table as a number of roles have multiple rows of responsibility), and responsibilities are identified in Table 8.3.

**Table 8.2 Waste Management Responsibilities**

Role	Responsibilities
Vessel Master(s)	<ul style="list-style-type: none"> <li>✦ Responsible for all waste generated on board the vessel and for ensuring waste management procedures are followed.</li> <li>✦ Ensuring that wastes are appropriately segregated and stored.</li> <li>✦ Responsible for the Garbage Record Book and ensuring a Garbage Management Plan and this PEMMP are available on the vessel and are appropriately communicated to personnel.</li> <li>✦ Completion and retention of Waste Transfer Notes/consignment notes (offshore).</li> </ul>
Environmental Manager	<ul style="list-style-type: none"> <li>✦ Responsible for developing this WMDP and reviewing and updating where relevant.</li> </ul>
Designated On-site Environmental and Consent Manager	<ul style="list-style-type: none"> <li>✦ Responsible for obtaining any additional licences necessary for waste management and disposal purposes.</li> <li>✦ Training crew/staff in waste management and awareness.</li> <li>✦ Responsible for reviewing this PEMMP and ensuring Contractor and Subcontractor procedures are aligned.</li> <li>✦ Ensure that waste is appropriately segregated and stored.</li> <li>✦ Responsible for ensuring staff and contractors operate in accordance with the requirements of the PEMMP and applicable regulatory requirements.</li> <li>✦ Ensuring that all waste carriers/handlers are registered to dispose of the relevant waste.</li> <li>✦ Completion and retention of Waste Transfer Notes/consignment notes</li> </ul>
HSE Manager/Environmental Manager	<ul style="list-style-type: none"> <li>✦ Reviews waste management procedures of Contractors and their carriers prior to contracting and ensure they align with SOWFL's expectations.</li> <li>✦ Responsible for wider company reporting of waste.</li> </ul>

Role	Responsibilities
	<ul style="list-style-type: none"> <li>☞ Communication of environmental targets pertinent to waste.</li> <li>☞ Responsible for reviewing this PEMMP.</li> <li>☞ Responsible for ensuring that adequate records are centrally held; Waste Transfer Notes are kept for two years and consignment notes/returns are kept for three years.</li> </ul>
Designated On-site Environmental and Consent Manager/Environmental Manager	<ul style="list-style-type: none"> <li>☞ Responsible for bridging this WMDP with waste plans those of Contractors and development of site-specific waste procedures.</li> <li>☞ Undertake spot checks and audits of vessels, Contractors and Sub-Contractors (refer to Section 8.13).</li> <li>☞ Undertake any investigation/follow up of incident reporting and closing out of any findings.</li> <li>☞ Responsible for confirming that waste carriers/handlers used by Contractors/Sub-Contractors are registered to dispose of the relevant waste.</li> <li>☞ Responsible for collating Waste Transfer Notes/consignment notes and providing them to the HSE Manager.</li> </ul>
All personnel (SOWFL and Contractors)	<ul style="list-style-type: none"> <li>☞ Ensure that waste generated throughout operations is effectively and responsibly managed and disposed of in accordance with Company policy and procedures, legislation and this PEMMP.</li> <li>☞ Reporting of non-conformities/incidents to relevant supervisor.</li> </ul>

**Table 8.3 SOWF Waste Management and Disposal Plan RACI Chart**

Procedural Responsibilities		General Site Manager	Environmental Manager	Designated On-site Environmental and Consent Manager	HSE Manager	Package Managers	Vessel Master/ Operator	Shipping Agent	Contractors	Workforce
R	Responsible for performing the action									
A	Accountable to ensure action happens									
C	Consulted during the action									
I	Informed after the action is complete									
	Ensure adequate resources and budgetary support are provided for waste management services and overall implementation of this Offshore WMDP.	A				R	R			
	Undertakes waste management compliance and duty of care audits, document review and reporting, ensures only registered waste contractors are employed for the work scope, communicates results from audits and KPI Targets.		A&R	A&R	C		R	R	R	
	Implements WMDP in accordance to MARPOL Annex IV.		I	I	I		A&R			
	Maintain the waste returns spreadsheet and associated documentation (waste transfer notes and consignment notes).	A	A	R	R	R	R	R	R	
	Implements waste awareness campaigns, monitor changes in legislation, provides adequate signage on waste receptacles.		C&I	R	R		R	R	A&R	

Provides training and advice on waste legislation, monitoring, handling, storage, transport and disposal.		A	R	I		R	R	R	
Inform all contractors of the WMDP and disseminate associated documentation as required.	A	I	R	I	R		R		
Comply with provisions of the waste hierarchy and WMDP	A	A	R		R	R	R	R	R
To liaise with Agents and the Approved Waste Contractor to ensure the provision of appropriate facilities for waste collection, storage and disposal.			R			A	R		
Liaise with the Shipping Agent to ensure that all general and hazardous waste landed is done so in accordance with this plan.			R			A	R		
Ensure waste landings and transfers are adequately controlled and coordinated			R			R	A		

## 8.7 STORAGE AND HANDLING OF WASTE

8.7.1 All waste generated from the project operations must be adequately controlled during storage and transportation without causing harm or pollution to the environment. SOWFL and Contractors shall:

- ✦ Use containers suitable for the composition and constituent of waste contents-check that containers are not corroded or worn out to minimise the risk of accidental spillage or leaks; containers used for storing wastes will be compatible with their contents and appropriate in terms of volume and shape (for filling/emptying the material that is being stored). Only containers in good condition will be utilised.
- ✦ Bungs and lids will be securely fastened, or other forms of covering will be provided. Waste storage containers will also be clearly labelled, indicating the characteristics of the contents, and data on toxicity and/or other potential hazards. Storage of hazardous waste will be carried out in accordance with the safety data sheet (SDS) and in a designated area, with a suitable surface and a method to contain any leakage or contaminated runoff water.
- ✦ Ensure all waste is segregated at the source of generation and stored in accordance with their waste type on site or on board the vessel. It is illegal to mix hazardous waste with either a non-hazardous waste or another type of hazardous waste;
- ✦ Ensure that the description of the waste is accurate and contains all the information for safe handling, transport, treatment, recovery or disposal by subsequent holders;
- ✦ Ensure that the transfer of waste is covered by a Controlled Waste Transfer Note (WTN) or Hazardous Waste Consignment Note (WCN) as appropriate, and ensure copies are available for spot audits (these should include relevant details such as the waste codes for each type of waste being transferred; the Standard Industrial Classification (SIC) number for the business; and Waste Management Licence/Carrier Number for the Waste Contractor and signed as they are legal documents);
- ✦ Ensure only companies authorised to carry out collection, transport and final treatment are utilised;
- ✦ Ensure that waste is stored in a manner that one distinct waste stream does not contaminate another, e.g. oil contaminated rags or cardboard must not be placed in with the general waste, which is destined for landfill;
- ✦ Encourage the workforce to think about where they place their waste and discharge the waste hierarchy;
- ✦ Ensure liquid waste is held in suitable containers where the contents cannot escape and find a pathway to a sensitive receptor, such as controlled waters, surface water drains or un-made ground;
- ✦ Ensure that waste receptacles are lidded or covered to prevent contents becoming airborne in high winds. Likewise, consideration shall be given to the storage of waste liable to be affected by rainfall or scavenging animals' e.g. waste electrical and electronic equipment contain hazardous substances and as such shall be stored in dry conditions whilst awaiting collection or food waste shall be kept in a sealed receptacle to prevent vermin infestation;
- ✦ Where practical ensure waste receptacles are stored at least 10 metres from any watercourse/controlled water;

- ✦ Ensure waste is transported in accordance with legal and duty of care requirements;
- ✦ Ensure storage containers/skips are clearly labelled with the types of waste they hold. Waste will either be stored in these receptacles until shipment or transferred for shipment when full. Containers will be carefully selected to ensure that they are of a suitable capacity for the likely waste type and volumes;
- ✦ Ensure waste is transported from site at an appropriate frequency by a registered waste carrier to prevent overfilling of waste receptacles/containments facilities;
- ✦ Ensure that where possible packaging material is returned to the originator for reuse instead of recycling or disposal;
- ✦ Ensure that cleaning activities (e.g. for plant, vehicles, wheel washes, concrete truck wash out etc.) are carried out in an appropriate enclosed area and waste water captured for treatment and as per the dML requirements or applicable legislation; and
- ✦ Ensure waste is assessed for its chemical composition and classified accordingly.

## 8.8 HAZARDOUS WASTE

8.8.1 Hazardous wastes are wastes that can potentially be harmful to human health and/or could potentially damage the natural environment if not managed and disposed of appropriately. They include wastes which have any of the following characteristics:

- ✦ explosive;
- ✦ flammable;
- ✦ toxic;
- ✦ infectious;
- ✦ carcinogenic;
- ✦ radioactive;
- ✦ release flammable or toxic gases on contact with water; and
- ✦ organic peroxides etc.

8.8.2 Despite being hazardous, several types of hazardous wastes can and should be recycled, to the extent practical (e.g. waste oils, batteries etc).

8.8.3 Hazardous wastes must be clearly labelled. Storage of hazardous waste such as fuels, oils, paints and other chemicals shall be in a manner that minimises risk of release into the marine environment. This includes but is not limited to; storage of liquids in drip trays, storage in suitably bunded areas (to hold 110% of the total volume of all reservoirs and containers), volume of hazardous material stored will be limited to that which is necessary, storage in accordance with MSDS and any COSHH assessments with the relevant documentation being clearly provided at the storage point. Storage areas must also be suitably ventilated and access to hazardous waste areas should be restricted to relevant personnel only.

- 8.8.4 All loads of general (non-hazardous) waste that are moved off premises (site or off a vessel) must be accompanied by a correctly completed Waste Transfer Note. All hazardous wastes that are moved off premises must be accompanied by a correctly completed consignment note. Consignment notes must stay with the hazardous waste load until it reaches its destination.

## 8.9 UNIDENTIFIED WASTE

- 8.9.1 Where materials of unknown type or composition are identified, they will be presumed to be hazardous waste until further investigation (which may include sampling) can be undertaken to provide sufficient information about the composition or origin of the material so as to enable a decision about its appropriate management. If the material is determined to be waste and the risks have been assessed, the integrity of the storage container, if any, will be evaluated and the waste will be transferred to an appropriate management area, where it can be properly managed and/or disposed of.

## 8.10 VESSEL GENERATED WASTE

- 8.10.1 All waste generated from the vessel operations must be adequately controlled during storage and transportation without causing harm or pollution to the environment.
- 8.10.2 SOWFL and Contractors shall ensure that vessels employed to conduct construction activities comply with Annex V of MARPOL 73/78 or MCA Workboat Code and have an adequate ship waste/garbage management plan;
- 8.10.3 Any offshore discharge (bilge, ballast water) shall be compliant with current legislation. Monitoring records in relation to the disposal of greywater, bilge water or ballast water during the construction phase must be retained on the vessel.
- 8.10.4 Transport of waste to the onshore port or site shall comply with International Marine Dangerous Goods (IMDG) regulations where applicable. Waste transported to shore will be secured to avoid loss and damage and control measures implemented to contain any spillage on deck;
- 8.10.5 All vessels must provide notification 24 hours prior to shipment of waste onshore to the marine agent / port reception facilities;

## 8.11 OFFSHORE SUBSTATION PLATFORM (OSP) GENERATED WASTE

- 8.11.1 As a normally unmanned installation, the current arrangements for waste management is that all construction waste generated on the OSP is removed daily by the operatives/technicians via the CTV/Vessels.

## 8.12 TREATMENT AND FATE OF WASTE

- 8.12.1 As outlined in Section 8.6 the generation of waste will be minimised as far as possible in accordance with the Waste Hierarchy. Table 8.4 shows the waste types that may be generated in the course of normal construction activities and their likely fate.

8.12.2 All wastes generated offshore shall be taken to shore and appropriately disposed of by licenced waste handlers at licenced facilities. Priority is given to the management of wastes as close to the source as possible thereby minimising unnecessary transportation.

**Table 8.4 Types of Wastes and their Expected Treatment and/or Fate**

Type of Waste	Source of Waste	Fate
<b>Non-Hazardous</b>		
Paper/cardboard	Magazines, packaging, office paper, newspaper.	Re-used or recycled.
Glass	Drinks bottles, jars.	Re-used or recycled.
Metals (not-contaminated)	Mixed scrap metals, copper cables, drinks and food cans.	Re-used or recycled.
General plastics	Bottles, mixed plastic packaging (types 1-7)	Re-used or recycled, where facilities exist.
Wood	Pallets, crates, furniture	Re-used or recycled.
Residual mixed waste	General mixed waste that may contain food scraps/residues.	Re-used or recycled at suitable facilities (after cleaning) or other recovery (e.g. waste to energy).
Galley waste (offshore)	Food waste	Macerated or ground and may be discharged at sea (beyond 3 nautical miles (nm) from shore), or 12 nm from shore if not macerated/ground, in line with MARPOL.
Galley/food waste (onshore)	Cooking/catering facilities	Preferentially sent for re-use as fodder for farm animals or composting, or possible waste to energy.
Cooking grease	Used cooking oil	Re-used or recycled at suitable facilities or other recovery (e.g. waste to energy). Incineration if no other options available.
Greywater offshore (domestic water)	Galleys, bathrooms (sinks and showers)	Treated and discharged to sea provided they do not contain any chemicals/substances harmful to the environment.
Blackwater offshore (sewage)	Personnel	For vessels with suitable sewage treatment systems, it will be treated and discharged in line with MARPOL requirements. For vessels without suitable treatment systems, the Contractor is required to supply vessels with tanks that can receive sewage at a capacity in line with duration and number of personnel on board the vessel. Containers will be brought back to shore for disposal by licensed handlers.
<b>Hazardous Waste</b>		
Chemicals	Refer to Section 7.2.	Unused chemicals returned to supplier. Chemicals will be re-used or recycled where possible. The potential for recovery of energy from flammable substances will be investigated. Incineration of these options not possible. All chemicals will be handled and disposed of at an authorised facility.
Chemical drums/containers	Containers holding hazardous waste are themselves hazardous.	Containers will be drained and sent to appropriate facilities for cleaning and re-use or recycling. If they cannot be re-used or recycled, they will be disposed of.
Aerosol cans	From paint, paint thinner, solvents etc.	Empty cans to be recycled. Cans to be depressurised and sent for metal recycling. Liquids to be recovered and stored/handled by authorised contractors. Any recovered chemicals/hydrocarbons to be re-used, recycled or waste to energy/incinerated as appropriate.
Medical waste	Swabs, dressings, used medicines.	Collected and incinerated at an authorised facility.
Used Personal Protective Equipment (PPE)	May be dirty or contaminated with oil or chemicals	Cleaned and re-used where possible, otherwise incinerated.
Oil and oil contaminated materials	Oily rags, used sorbents, hydraulic hoses, used grease/lubricant.	Oily liquids to be re-used or recycled. Oily solids to waste to energy facilities or incineration if recovery is not available.
Bulbs and fluorescent tubes	Lighting systems.	Kept in sealed containers and segregated from all other types of waste until shipment to an authorised facility with suitable handling and disposal facilities.

Type of Waste	Source of Waste	Fate
Waste electronics (batteries, small appliances etc.)	Computer equipment, electronic equipment, spent appliances.	Sent to appropriate facilities for recycling or re-use or repurposing. Any components that cannot be recycled/re-used will be disposed of. Batteries will be stored separately for recycling at authorised facilities.

## 8.13 MONITORING AND INCIDENT REPORTING

- 8.13.1 Records of waste and their fate will be collated by the Contractor appointed Designated On-site Environmental and Consent Manager for record-keeping and checking. Spot checks and audits on procedures, working practices and facilities will be undertaken at site and on-board vessels, to ensure compliance with legislation, company policy and with this WMDP.
- 8.13.2 Any non-conformances or incidents are reported via the SOWFL incident reporting system as documented within the SOWF Emergency Incident Notification Procedure (SOWFL, 2020) and the contractor's approved environmental management plan ; and are followed up by relevant SOWFL and RWE personnel to close out any remedial/corrective actions. Offshore incidents, where any form of waste is lost to sea must be reported as a dropped object (solid wastes/garbage) to the MMO in line with the approved SOWFL Dropped Object Procedure. For chemical or oil spills, the MPCP procedures should be followed as outlined in Section 6 of this PEMMP.
- 8.13.3 Performance targets for waste management are set by the HSE Manager and communicated to the Contractor workforce by the Contractor appointed via the Designated On-site Environmental and Consent Manager. Inspections and audits will be implemented to verify performance of targets through the contractors' environmental management plans which will accord with SOWFL's processes, as set out in the CEMO.

## **9. COMMUNICATION, TRAINING, AWARENESS AND COMPETENCE**

- 9.1.1 All Contractors and personnel engaged in construction activities will receive the appropriate induction and training to ensure that they are aware of their environmental responsibilities falling under their scope of works. The environmental requirements will be explained to employees during the site introduction, on-going training (via toolbox talks), meetings, briefings and notifications as necessary.
- 9.1.2 SOWFL require all Contractors to employ appropriately qualified and suitably experienced personnel. Where appropriate, this will include holding a registration with the relevant recognised competence schemes. The Contractor will be responsible for identifying the training needs of their relevant personnel to ensure that they are suitably qualified and experienced for their role and demonstrating this to SOWFL.
- 9.1.3 Suitably qualified and experienced personnel will be appointed by the Contractor to supervise the construction works. This will include professionally qualified environmental management staff, with relevant experience in the environmental management principles included in this PEMMP. They will be present on site during the main offshore construction works to advise, supervise and report on the implementation of appropriate environmental mitigation measures and safeguards. The Contractor shall provide SOWFL with relevant contact details of the appointed competent person/s prior to the commencement of offshore construction.
- 9.1.4 The Contractors will be required to develop their own site inductions which should include, but not limited to, appropriate environmental material relevant to this project. The Contractor is expected to undertake drills of procedures set out in their EMP to ensure that all construction personnel understand their roles and responsibilities in the event of an incident/non-compliance.

## 10. ENVIRONMENTAL, MONITORING AND ANTHROPOGENIC CONSIDERATIONS

### 10.1 OVERVIEW

- 10.1.1 Project environmental requirements will be embedded into contracts and all Contractors will be instructed in the requirements for environmental management of SOWF. Contractors will be expected to provide the relevant method statements for all works and will be assessed by the SOWFL consents team to verify that adequate environmental protection controls have been included in order to minimise impacts on the environment and comply with the PEMMP and applicable environmental regulations.
- 10.1.2 The following sections provide a summary of the environmental conditions identified during the SOWF characterisation as presented within the respective ES. All SOWFL personnel and Contractors will be aware of these environmental sensitivities and ensure that works conducted are in compliance with this PEMMP to mitigate against any potential effects.

### 10.2 MONITORING PLANS

- 10.2.1 As per the SOWF dMLs, monitoring will be undertaken pre and post construction through the implementation of management plans approved by the MMO. Those of particular relevance to the PEMMP comprise:
- ✦ The SOWF Benthic Monitoring Plan (BMP) (SOWFL, 2020);
  - ✦ The approved SOWF Offshore Written Scheme of Investigation (SOWFL, 2020); and
  - ✦ The approved SOWF Geophysical (Bathymetrical) Monitoring Plan (GMP) (SOWFL, 2019)
- 10.2.2 These documents support, and are associated with this PEMMP and therefore, all SOWF Contractors will be required to read and complete works in line with these plans, including any mitigation outlined within.

### 10.3 ARCHAEOLOGICAL EXCLUSION ZONES

- 10.3.1 Archaeological Exclusion Zones (AEZs) have been detailed in the approved SOWF Offshore Archaeological Written Scheme of Investigation (WSI). Method statements for each relevant construction activity will be agreed with Historic England prior to any works taking place.
- 10.3.2 The implementation of AEZs and the use of approved method statements will ensure full protection of identified archaeological interest features throughout the works.

## 10.4 DESIGNATED SITES

- 10.4.1 SOWF overlaps with three designated sites: one Special Protection Area (SPA) and two Special Areas of Conservation (SAC), as listed within Table 10.1 and presented in Figure 8.
- 10.4.2 All SOWFL personnel and Contractors will be aware of these environmental sensitivities and ensure that works are conducted in compliance with this PEMMP in order to mitigate against potential effects.

**Table 10.1 Designated Sites overlapping with Sofia OWF**

Designated Site	Overlap	Site Assessment
Teesmouth and Cleveland Coast SPA and Ramsar site	Export cable overlap within the intertidal area.	Dogger Bank Teesside A & B Environmental Statement, Chapter 8 – Designated Sites (Application Reference: 6.8)
Dogger Bank SAC	Array and export cable corridor overlap.	Dogger Bank Teesside A & B Environmental Statement, Chapter 8 – Designated Sites (Application Reference: 6.8)
Southern North Sea SAC	Overlap with the export cable corridor and south west of the array. It should be noted that the overlap is with the summer area of this SAC (see Figure 8) and no overlap with the winter, or summer/winter area of this SAC.	Dogger Bank Teesside A and B Wind Farm Order 2015 (as amended) – Non-Material Change Application HRA (BEIS, 2020) <sup>14</sup>

- 10.4.3 All of these sites have previously been assessed within the following documents (and those detailed within Table 10.1) and no variations on work are required to mitigate impacts to these sites:
- ☛ SOWF Shadow Habitats Regulations Assessment (HRA) Report Information for Appropriate Assessment (Forewind, 2014); and
  - ☛ Review of Consented (RoC) Offshore Wind Farms in the Southern North Sea Harbour Porpoise SAC (MMO, 2020).

<sup>14</sup> <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010051/EN010051-002404-Teesside%20A.%20NMC%20Application.%20HRA%20-%20March%202020.pdf>








## 11. MANAGEMENT OF CONTRACTOR REQUIREMENTS

### 11.1 CONTRACTOR ENVIRONMENTAL MANAGEMENT SYSTEMS

- 11.1.1 All Contractors will be expected to undertake their works in accordance with an Environmental Management System (EMS) which is certified to, or meets the requirements of, ISO:14001 as applicable to the works being undertaken, as well as best practice guidance.
- 11.1.2 All Contractors will be expected to comply with this PEMMP and the obligations set out within the CEMO, and the requirements within. Each Contractor is expected to produce their own EMP (Environmental Management Plan), which will be in accordance with the CEMO and this PEMMP. This will be reviewed by SOWFL to ensure compliance.
- 11.1.3 All contractors will be required to undertake training, tool box talks and awareness sessions (see Section 10). Contractor compliance will be assessed by SOWFL through audits and spot checks.
- 11.1.4 All Contractors will be required to use chemicals approved on Pose Little or No Risk to the Environment (PLONOR)<sup>15</sup> or Offshore Chemical Notification Scheme (OCNS)<sup>16</sup> and must obtain written approval from the MMO in advance to use a chemical not already approved.

### 11.2 RISK ASSESSMENTS AND METHOD STATEMENTS

- 11.2.1 Contractors must produce risk assessments for the relevant activities within their scope of work. These must identify potential environmental risks and identify adequate mitigation/control measures to prevent an environmental incident or consent/licence non-compliance.
- 11.2.2 Specific aspects that should be highlighted includes, but is not limited to:
-  Activities that may generate new discharges to air, water, land or the marine environment;
  -  Activities that require any further permits/consents;
  -  Activities that affect any existing discharges;
  -  Activities that may reduce the efficacy of any pollution response control or response measures;
  -  Activities that may generate waste that may be difficult to handle, store or dispose of.
- 11.2.3 Risk assessments will be reviewed and accepted in EcoDoc by the HSE Manager, with input from the Environmental Manager as necessary.

<sup>15</sup> <https://www.cefas.co.uk/data-and-publications/ocns/ocns-bulletin-board/new-plonor-list-issued/>

<sup>16</sup> <https://www.cefas.co.uk/data-and-publications/ocns/about-ocns/>

## 11.3 ENVIRONMENTAL NON-COMPLIANCE

11.3.1 Non-compliance may include, but is not limited to the following:

- ✦ Accidental spills of chemicals or hydrocarbons;
- ✦ Accidental loss of waste;
- ✦ Incorrect segregation or disposal of waste (e.g. disposal to unlicensed sites or without appropriate permits);
- ✦ Activities being carried out without appropriate or valid licences or permits;
- ✦ Items lost to sea (dropped objects will be dealt with through the SOWF Dropped Objects Procedure (SOWFL, 2020); and
- ✦ Force majeure.

11.3.2 SOWFL will comply with all relevant legislation and that the works are undertaken with appropriate licences and permissions in place. SOWFL will continually monitor and audit the activities of Contractors and Sub-contractors and require that they also comply with all relevant legislation and any permit/licence conditions.

## 11.4 RECORDING AND DOCUMENTING OF INCIDENTS

11.4.1 SOWFL are committed to rapid and proportionate action and a proactive approach to learning in response to environmental incidents. To achieve this, prompt reporting of all environmental incidents is expected from all individuals and Contractors. This is in addition to any legal requirements or other recognised industry best practice.

11.4.2 In case of other non-compliances, the Contractor must forward an environmental incident report to the HSE Manager and Environmental Manager within 24 hours. The incident report must describe the non-compliance and a description of how to make sure that the incident does not happen again.

11.4.3 A *force majeure* occurs when authorised substances/articles are deposited outside of the Order Limits or unauthorised substances/articles are deposited within or outside the offshore Order Limits. If, due to stress of weather or any other cause, the master of a vessel determines that it is necessary to deposit the substances or articles because the safety of human life and/or the vessel is threatened. Full details of the circumstances shall be notified to the MMO by the Installation Manager/Client Representative or Vessel Master within 48 hours of the incident occurring.

11.4.4 Regular communication will be maintained between the relevant Package Managers and Contractors during construction and operation. This will include regular reporting, calls and meetings in order to monitor compliance with incident recording and documentation.

11.4.5 The procedures and any incident notification requirements detailed within this PEMMP will be recorded and documented in accordance with ISO:14001 through the contractors' environmental management plans which must be in accordance with the CEMO.

## 12. REFERENCES

- BEIS (2020). Dogger Bank Teesside A and B Wind Farm Order 2015 (as amended) – Non-Material Change Application. [Online] Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010051/EN010051-002404-Teesside%20A.%20NMC%20Application.%20HRA%20-%20March%202020.pdf> [Accessed 27<sup>th</sup> May 2020]
- DEFRA (2011) Guidance on applying the Waste Hierarchy. [Online] Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69403/pb13530-waste-hierarchy-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf) [Accessed 27<sup>th</sup> May 2020]
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- HSE & MCA (2019) Regulatory expectations for emergency response arrangements for the offshore renewable energy industry. [Online] Available at: <https://www.hse.gov.uk/osdr/assets/docs/is2-2019.pdf> [Accessed 9th September 2020]
- MCA (2014) National Contingency Plan (NCP) [Online] Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/638623/170817\\_NCP.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/638623/170817_NCP.pdf) [Accessed 27<sup>th</sup> May 2020]
- MMO (2020) Marine Pollution Contingency Plan. [Online] Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/870123/Marine\\_Pollution\\_Contingency\\_plan.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/870123/Marine_Pollution_Contingency_plan.pdf) [Accessed 27<sup>th</sup> May 2020]
- MMO (2020) Review of consented Offshore Wind Farms in the Southern North Sea Harbour Porpoise SAC
- SOWFL (2019) Sofia Offshore Wind Farm Offshore Written Scheme of Investigation
- SOWFL (2019) Sofia Offshore Wind Farm Geophysical (Bathymetrical) Monitoring Plan
- SOWFL (2020) Sofia Offshore Wind Farm Benthic Monitoring Plan
- SOWFL (2020) Sofia Offshore Wind Farm Dropped Object Procedure
- SOWFL (2020) Sofia Offshore Wind Farm Fisheries Liaison Plan including Co-Existence
- SOWFL (2020) Sofia Offshore Wind Farm Emergency Incident Notification Procedure (Document reference: 003482781)
- SOWFL (2020) Sofia Offshore Wind Farm Emergency Response Plan (Document reference: 003581572)
- SOWFL (2020) Sofia Offshore Wind Farm Health and Safety Management Plan

SOWFL (in preparation) Sofia Offshore Wind Farm Project Environmental Manual

SOWFL (in preparation) Sofia Offshore Wind Farm Construction Environmental Management Plan

## APPENDIX A. EXTERNAL CONTACT DATABASE

Role	Name	Telephone	E-mail
<b>External Stakeholder Contact Details</b>			
MMO	Marine Pollution Response Team	+44 (0)300 200 2024 (office hours) +44 (0)7770 977 825 (out of hours) +44 (0)345 051 8486 (Defra 24hr Duty Office to call if cannot reach MMO)	<a href="mailto:dispersants@marinemanagement.org.uk">dispersants@marinemanagement.org.uk</a>
HM Coastguard		+44 (0) 344 382 0726	-
Natural England	N/A	+44 (0)300 060 1911 +44 (0)300 060 3900	<a href="mailto:marine.incidents@naturalengland.org.uk">marine.incidents@naturalengland.org.uk</a>
Natural England Local Officers	Josh Parker	020 82258152 / 07717881405	<a href="mailto:Josh.Parker@naturalengland.org.uk">Josh.Parker@naturalengland.org.uk</a>
	Martin Kerby	-	<a href="mailto:Martin.Kerby@naturalengland.org.uk">Martin.Kerby@naturalengland.org.uk</a>
Joint Nature Conservation Committee	Pollution Advisory Team	+44 (0)7974 257 464 (24 hours)	<a href="mailto:pollution.advice@jncc.gov.uk">pollution.advice@jncc.gov.uk</a>
Emergency Services	Fire, Police, Ambulance	999 (Emergency) 112 (Non-emergency)	-
	Crimestoppers	+44 (0)800 555 111	-
	Redcar Fire Department	+44 (0) 1642 777640	-
Royal National Lifeboat Institute (RNLI)	Redcar Lifeboat Station	+44 (0) 1642 484491	-
Sea Alarm Foundation (for oiled wildlife)	Emergency Assistance (24 hours)	+32 2 2788 744 (office) +32 49 49 000 12 (mobile) +32 49 96 247 72 (mobile) +32 49 74 103 68 (mobile)	-
Environment Agency - North East Standing Environment Group (SEG) representative The is	Peter Stevenson	0800 80 70 60 (24-hour EA incident hotline)	<a href="mailto:peter.stevenson@environmentagency.gov.uk">peter.stevenson@environmentagency.gov.uk</a>

# APPENDIX B. INCIDENT CLASSIFICATION



## Severity Table

RD\_302\_A01

<b>Document Class:</b> Directive		<b>Security Class:</b> Internal		
Actual Classification		Actual Severity (0 = near misses/ no actual harm or damage)		
		HIGH (AH)	MEDIUM (AM)	LOW (AL)
H&S	Ham to people	Fatality, major life changing injury, or serious long-term (reversible) injury	Lost Time Injury (LTI) Restricted Work Case (RWC) Medical Treatment Case (MTC)	First Aid Case (FAC)
Asset	Damage / Business Continuity	Incident that causes downtime and/or damage cost over 1M €	Incidents that cause downtime and/or damage cost between 200k € and 1M €	Incidents that cause downtime and/or damage cost less than 200k €
U	Environmental damage	Serious or Major environmental incident: - Serious environmental damage, which is expected to last longer than four weeks of remediation activities at site or cannot be remediated and therefore causes long-term damage; AND/OR - Regional, national or international media interest; AND/OR - High stakeholder concern (Multiple community complaints); AND/OR - Civil or criminal prosecution	Moderate environmental incident: - Moderate environmental damage that is expected to be resolved within a period of max. four weeks remediation activities at site; AND/OR - Local media interest; AND/OR - Moderate stakeholder concern (Repeat community complaints); AND/OR - Regulatory enforcement action (e.g.: fine, notice, order)	Minor environmental incident: - Minor environmental damage that is likely to be remedied by simple means within a period of max. 7 days of remediation activities at site; AND/OR - Action / control required; AND/OR - Warning letter from Authority; AND/OR - Low stakeholder concern (isolated community complaint)
Potential Classification		Potential Severity		
		HIGH (PH)	MEDIUM (PM)	LOW (PL)
<p>After classifying the actual severity based on the actual and expected harm and damage, the potential severity is estimated. Therefore a realistic deterioration of actions or conditions along with the incidents scenario are assumed, and the potential harm and damage estimated, using the same table above as for the actual severity. Note: Limit the total number of deteriorations of actions or conditions to one or two, thus realistic scenarios. Achieve a credible outcome rather than a worst case scenario.</p>				

Notification		Actual HIGH	Actual MEDIUM and/ or Potential HIGH	Other Classifications
Notification	Phone	Immediate information (<1 hr) by phone.	/	/
	Email	Formal notification via Email within 1 calendar day (including non-working days).	Formal notification via Email within 3 working days.	/
<p>Note: Hereby the responsible line manager aware of the incident calls his line manager and in addition the responsible HSE manager. From now onwards, both lines cascade upwards by phone through the operational line (N-3/N-2/N-1) towards the line responsible RWE RES Board member as well as through the HSE line (N-3/N-2/N-1) towards the CEO. In case a person in a line cannot be reached by phone, his replacement or the next higher person in the line is called.</p> <p>Note: Send either the MS Word or MS Outlook "Incident Notification Form" to <a href="mailto:incident-notification-res@rwe.com">incident-notification-res@rwe.com</a>. Hereby the recipient incident-notification-res@rwe.com automatically copies the notification to all recipients, recorded on its pre-defined distribution list.</p>				
Reporting	IT-System	Reporting via the IT-System as soon as reasonably practicable.	Reporting via the IT-System as soon as reasonably practicable.	Monthly reporting via the IT-System.

Investigation		Actual HIGH or Potential HIGH	Actual MEDIUM and Potential MEDIUM	Other Classifications
Investigation	Type of investigation	RCA	Investigation following RCA principles but reducing effort	Moderate incident review
	Minimum desired Investigation depth	Cause level 3 (root causes)	Cause level 2	Cause level 1
	Investigation start	As soon as possible	As soon as practicable	Within 4 weeks
	Investigation deadline	30 days after the incident	30 days after investigation start	/
	Investigation ToR and team composition	Responsible Board member (supported by HSE Head)	Responsible N-1 (supported by HSE Manager)	/
	Investigation lead	N-2 or N-1 (preferably from a different BU)	N-2 / N-3	Responsible line manager
	Investigation team	min. 3 People with adequate skills and knowledge	min. 2 People with adequate skills and knowledge	/
	Recommended RCA Expertise in the team	RCA Advanced, preferably RCA Professional	RCA Advanced	/
	Recommended coaching/ reviewing	Independent HSE manager/ RCA Advanced or Prof.	HSE manager/ RCA Advanced if considered to be reasonable	/
Documentation and Communication	Report scope and content	Report (incident description, causes and recommendations)	Short summarizing report or LL	Memo/ Inspection protocol
	Categorization of Causes	According to the "RCA-list of causes"	According to the "RCA-list of causes"	/
	Recipient of report	Responsible Board member	Responsible N-1	/
	Investigation close-out	F2F Handover	F2F Handover or via E-Mail and phone	/
	Action plan, tracking, effectiveness checks	Responsible N-1 (supported by HSE Manager)	Responsible N-1 (supported by HSE Manager)	Responsible line manager
	Lessons Learned	SCI-Distribution / Intranet	SCI-Distribution / Intranet	Rarely
<p>Deviations from the above may be made, if there are good reasons e.g. to stop an investigation it is foreseeable that the investigation would not add any value or gain new knowledge, or to use a higher investigation standard as it is more appropriate although not required. Whenever stopping or deviating to a lower standard, the management of the OU concerned consult the respective HSE manager, define and agree the requirement's deviation and document the deviation including the reasons.</p>				

**Document control:**

Refer to RD\_302\_Incident\_Management for document control information.

## APPENDIX C. SPILL NOTIFICATION FORM

- C.1 All spills, regardless of the size, must be reported to the MMO and the local Coastguard Operations Centre (CGOC of the MCA). Category H and M spills need to be reported within 6 hours and Category L spills within 24 hours.
- C.2 Table 12.1 presents the form to be used to report the spill. Note that it is not compulsory to have all of the information, it is however, beneficial to complete as much as possible in order that an appropriate response can be initiated.
- C.3 Notification should initially be reported via telephone, followed up with an email which details as much of the information as possible.

Table 12.1 SOWF Spill Reporting Form

Incident Pollution Report Format (CG77 POLREP)	
A	<b>Classification of incident</b> (Doubtful / Probably / Confirmed)
B	<b>Date and Time</b> (Pollution observed / reported and identity of observer / reporter)
C	<b>Position and extent of pollution</b> (Latitude and Longitude where possible. State range and bearing from prominent landmark. Estimate amount of pollution, e.g. extent of polluted area, number of tonnes of oil spilled, number of drums / containers lost)
D	<b>Time and wind</b> (speed and direction)
E	<b>Weather</b> (Conditions and sea state)
F	<b>Characteristics of pollution</b> (Type of pollution, e.g. liquid, floating solid, semi liquid, discolouration of sea, visible vapour etc.)
G	<b>Source and cause of pollution</b> (From vessel or other source. If vessel state whether deliberate discharge or casualty (give details). Where possible give name, type, size, nationality, and Port of Registry of polluting vessel. If relevant give course, speed and destination.)
H	<b>Vessels in area</b> (If polluter cannot be identified give details of possible polluting vessels.)
J	<b>Records</b> (State whether photographs have been taken, or samples for analysis)
K	<b>Remedial action</b> Describe action taken or intended to deal with spillage.
L	<b>Likely effect of pollution</b> (e.g. arrival on beach/landfall with estimated timing).
M	<b>Names</b> Record organisations/contacts who have been informed
N	<b>Other</b> (e.g. names of other witnesses, references to other instances of pollution pointing to source).
	<b>Print Name:</b>
	<b>Job Title:</b>

## APPENDIX D. DML CONDITIONS SEEKING DISCHARGE

This document has been drafted to address the requirements of the DCO dML for SOWF, insofar as is relevant to the preparation of a Project Environmental Management and Monitoring Plan (PEMMP) under Conditions 16(d)(i), (ii) and (iii) and 14(d)(i), (ii) and (iii) of dML Schedules 9 and 11 (as varied in 2019) respectively.

The table below sets out the relevant dML Conditions this document discharges (in Full or Part).

<b>DCO SCHEDULE 9: MARINE LICENCE 2: PROJECT B (SOWF) OFFSHORE GENERATION – WORK NOS. 1B AND 2T: PART 2 CONDITIONS (VARIATION NO. 2, APRIL 2019)</b>	
<b>dML Condition: Pre-construction plans and documentation</b>	<b>In Full or Part discharge</b>
Project Environmental Management and Monitoring Plan (PEMMP) 16(d)	Full
Marine Pollution Contingency Plan 16(d)(i)	Full
Chemical Risk Assessment 16(d)(ii)	Full
Waste Management and Disposal Plan 16(d)(iii)	Full
<b>DCO SCHEDULE 11: MARINE LICENCE 4: PROJECT B (SOWF) OFFSHORE TRANSMISSION – WORK NOS. 2B, 3T AND 2T: PART 2 CONDITIONS (VARIATION NO. 2, APRIL 2019)</b>	
<b>dML Condition: Pre-construction plans and documentation</b>	<b>In Full or Part discharge</b>
Project Environmental Management and Monitoring Plan (PEMMP) 14(d)	Full
Marine Pollution Contingency Plan 14(d)(i)	Full
Chemical Risk Assessment 14(d)(ii)	Full
Waste Management and Disposal Plan 14(d)(iii)	Full

## Legislative context

### SOWF DEEMED MARINE LICENCE CONDITIONS

This PEMMP sets out the framework and minimum arrangements for the environmental management of SOWF and has been produced to discharge the requirements of the relevant dML conditions.

**Error! Reference source not found.** The table below sets out the details of Conditions 16(d) of dML Schedule 9 (as varied in April 2019) and Conditions 14(d) of dML Schedule 11 (as varied in April 2019) relevant for the PEMMP.

#### DCO SCHEDULE 9: MARINE LICENCE 2: PROJECT B (SOWF) OFFSHORE GENERATION – WORK NOS. 1B AND 2T: PART 2 CONDITIONS (VARIATION NO. 2, APRIL 2019)

##### Pre-Construction Plans and Documentation 16(d) PEMMP

16(d) a project environmental management and monitoring plan that details minimum environmental management requirements expected of all contractors and subcontractors, with regards to marine pollution contingency, waste management and disposal, chemical risk assessment and relevant fisheries liaison matters, including details of—

- (i) a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents during construction and operation of the authorised scheme in relation to all activities carried out;
- (ii) a chemical risk assessment, including information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance;
- (iii) waste management and disposal arrangements.

#### DCO SCHEDULE 11: MARINE LICENCE 4: PROJECT B (SOWF) OFFSHORE TRANSMISSION – WORK NOS. 2B, 3T AND 2T: PART 2 CONDITIONS (VARIATION NO. 2, APRIL 2019)

##### Pre-Construction Plans and Documentation 14(d) PEMMP

14(d) a project environmental management and monitoring plan that details minimum environmental management requirements expected of all contractors and subcontractors, with regards to marine pollution contingency, waste management and disposal, chemical risk assessment and relevant fisheries liaison matters, including details of—

- (i) a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents during construction and operation of the authorised scheme in relation to all activities carried out;
- (ii) a chemical risk assessment, including information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance;
- (iii) waste management and disposal arrangements.



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