

A decorative graphic on the left side of the page. It features a vertical lime green bar. To the right of the bar is a photograph of a wind turbine in rough seas. Below the bar and photo are several white line-art icons of wind turbines arranged in a staggered pattern. In the upper right, there is a white-bordered photograph of a worker in a yellow safety vest and white helmet on a wind turbine. The background of the entire page is teal with white wavy lines representing water.

Arklow Bank Wind Park 2

Emergency Response Cooperation Plan

Volume III, Appendix 25.5 Emergency Response and Cooperation Plan

Version	Date	Status	Author	Reviewed by	Approved by
1.0	15.02.24	Final (External)	Anatec Ltd	GoBe Consultants	Sure Partners Ltd

Statement of Authority

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Acronyms

Term	Meaning
ABWP1	Arklow Bank Wind Park 1
ABWP2	Arklow Bank Wind Park 2
ADSB	Automatic Dependent Surveillance-Broadcast
AIS	Automatic Identification System
BOP	Balance Of Plant
CCTV	Closed Circuit Television
CTV	Crew Transfer Vessel
DMR	Digital Mobile Radio
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ERCoP	Emergency Response Cooperation Plan
ERP	Emergency Response Plan
GPS	Global positioning system
HDD	Horizontal Directional Drilling
IAMSAR	International Aeronautical and Maritime Search and Rescue Manual
IERCP	Integrated Emergency Response Cooperation Plan
IMO	International Maritime Organization
IRCG	Irish Coastguard
JUV	Jack-Up Vessel
km	Kilometre

MC	Marine Coordinator
MCA	Maritime and Coastguard Agency
MCC	Marine Coordination Centre
MGN	Marine Guidance Note
nm	Nautical Mile
NMOC	National Maritime Operations Centre
O&M	Operation and Maintenance
OFTO	Offshore Transmission Owner
OPRC	Oil Pollution Preparedness, Response and Cooperation
OREI	Offshore Renewable Energy Installation
OSC	On-Scene Coordinator
OSP	Offshore Substation Platform
OSPAR	The Convention for the Protection of the Marine Environment of the North-East Atlantic
OT	Operational Technology
RNLI	Royal National Lifeboat Institution
SAR	Search and Rescue
SCADA	Supervisory Control and Data Acquisition
SHE	Safety, Health and Environment
SHW	Safety, Health and Wellbeing
SMC	SAR Mission Coordinator
SOLAS	Safety Of Life At Sea
SOP	Standard Operating Procedure
SOV	Service Operations Vessel

SPL	Sure Partners Limited
SRU	SAR Unit
SSE	SSE plc
TP	Transition Piece
TPA	Thermal Protective Aids
UXO	Unexploded Ordnance
VHF	Very High Frequency
VOIP	Voice over Internet Protocol
WTG	Wind Turbine Generator

Units

Unit	Description
km	Kilometre
nm	Nautical Mile
hr	Hours

1 Introduction

1.1 Background

- 1.1.1.1 Sure Partners Limited (SPL) (hereafter 'the Developer'), a wholly owned subsidiary of SSE plc (SSE) is the developer of Arklow Bank Wind Park 2 (ABWP2) (hereafter 'the Project') a planned offshore wind farm located in Irish waters and approximately 3.2 and 8.3 nautical miles (nm) (6 and 15 kilometres (km)) off the coast of County Wicklow. The offshore components of ABWP2 are hereafter referred to as the Proposed Development.
- 1.1.1.2 This document has been prepared by the Developer to set out emergency response plans including cooperation procedures with the Irish Coastguard (IRCG) for the construction, operation and maintenance (O&M) and decommissioning phases of the Proposed Development.
- 1.1.1.3 This plan details the design of the Proposed Development, describes the actions to be taken in an emergency, details the resources available to support those actions, and provides emergency contact details.
- 1.1.1.4 Note this document follows best practice guidelines including the Maritime and Coastguard Agency (MCA) Emergency Response Cooperation Plans (ERCoP): Template for Construction, Operations and Decommissioning phases and the content of Marine Guidance Note (MGN) 654 and its annexes, and is considered a live document given the potential for through life updates required in liaison with IRCG. It is noted that the draft Department of Transport Standard Operating Procedure (SOP) 07-2023 Offshore Renewable Energy Installations (OREI): Guidance and Operational Considerations for SAR and Emergency Response requires an OREI Emergency Response Plan to "be in place ready for the start of construction". SOP 07-2023 is in draft at the time of writing and out for consultation, however this ERCoP will be updated where necessary in liaison with IRCG once the associated requirements are finalised.
- 1.1.1.5 The current version is being included as part of the Application, however will be updated on a periodic basis in liaison with IRCG. In particular, it is noted that consent is being sought for two design options, Project Design Option 1 (56 Wind Turbine Generators (WTGs) and Project Design Option 2 (47 WTGs). Both Project Design Options include two Offshore Substation Platforms (OSPs). The ERCoP will be updated once a Project Design Option has been confirmed, subject to consent being granted.

1.2 Roles and Responsibilities

1.2.1 Role and Responsibilities of the Developer in an Emergency:

- 1.2.1.1 In the event of an emergency associated with the Proposed Development, or at sea involving its personnel and/or vessels, the Developer is responsible for providing immediate rescue and first aid medical response, to a level appropriate for the circumstances of the Proposed Development and its location. The Developer is also responsible for immediately alerting IRCG of an emergency and for liaising and cooperating with the relevant Marine Rescue Centre to resolve the emergency.
- 1.2.1.2 The Developer is also obliged, under international maritime agreements and practices e.g. Safety Of Life At Sea (SOLAS) convention, to provide assistance, where it is possible to do so, to other vessels or persons in danger at sea within or nearby the Proposed Development, and/or when requested to assist by IRCG.

- 1.2.1.3 The Developer may also need to provide its own vessel(s) and other assets to respond or react to other maritime emergencies e.g., pollution or a drifting vessel which presents an actual or possible threat to the safety of life or property at sea within or nearby the Proposed Development.

1.2.2 Contact Information

- 1.2.2.1 This section summarises the key Proposed Development personnel deemed of relevance to the ERCoP. Contact details will be added to a future plan iteration.

Table 25.5.1: Contact details of responsible parties (not exhaustive)

Position	Name	Telephone	Email
Marine Coordinator	Contact details will be added to a future plan iteration.		
Project Manager			
Project Director			
Lead Commissioning Manager			
Project Safety, Health and Wellbeing (SHW) Manager			
Environmental Manager			
Owner of the ERCoP			
24hr Emergency Contact			

1.2.3 Offices

- 1.2.3.1 Addresses for the ABWP2 offices intended to be utilised during the construction, operation, and decommissioning phases are provided in Table 25.5.2.

Table 25.5.2 Proposed Development Offices

Office	Name	Telephone	Email
Construction			
O&M			
Decommissioning			

1.3 Liaison Agreements between the Developer and IRCG

- 1.3.1.1 The Developer shall work to the principle that the first response to any incident shall be at the location of the incident, whether this is within or nearby the Proposed Development, or on a

vessel. This applies equally to the construction, O&M and decommissioning phases. Therefore, the Developer requires a certain standard and capability from the Contractors with whom it engages, with regards to wind farm work activities. These standards and competencies are, however, limited to what is practicable in respect of the vessels, structures and personnel. For this reason, the Developer recognises the additional capabilities and competencies that are provided via IRCG. In reliance of the support of IRCG, the Developer recognises that effective preparation is fundamental to the management of any incident. The main elements of preparation are contained within this plan and provide IRCG with this information.

- 1.3.1.2 In the event of an incident, the Developer will at no point position itself, unless requested by IRCG, between the IRCG and any party involved in an incident associated with the Proposed Development.
- 1.3.1.3 Therefore, all communications in respect of an incident will be directly between those involved and IRCG, unless IRCG advise otherwise. The Developer will however place its Marine Coordinator (MC) at the immediate disposal of the IRCG. This ensures effective communication of all information relevant to the incident.
- 1.3.1.4 The salient points of this procedure are that:
 - All offshore incidents are, in the first instance, managed by the associated or responsible vessels;
- 1.3.1.5 In the event of an incident, all vessels trigger their own Emergency Response Plan (ERP), which must ensure immediate contact is made to the IRCG, and, in parallel, contact is made to the Developer (via the Project Manager) and the main contract party involved in the activity;
 - The main contract party and the Developer shall cooperate between themselves and as per the directions of the IRCG; and
 - The Developer's team will take guidance from MGN 654 or any superseding guidance released by IRCG prior to consent in terms of requirements regarding shut-down (partial or complete) of the wind farm during Search and Rescue (SAR) operations, conducted within or passing through the wind farm.
- 1.3.1.6 In line with the Safety, Health and Welfare at Work (General Application) Regulations 2016, the Developer will also report any injuries¹ or fatalities to the Health and Safety Authority.

1.4 Liaison arrangements between the Developer and Garda Síochána

- 1.4.1.1 Where appropriate, in the event of an incident, the Developer will inform Garda Síochána who may agree to send a liaison officer to the Marine Coordination Centre (MCC), to set up agreed communications with the Developer. The details of this process will be agreed with Garda Síochána once a Project Design Option is confirmed (see Section 1.1).

¹ If the injury means the personnel member is unable to carry out their normal work for more than three consecutive days, excluding the day of the accident.

2 SAR Information

2.1 Role of IRCG

- 2.1.1.1 The IRCG Search and Rescue (SAR) service is carried out to meet Ireland's obligations under the International Maritime Organization (IMO) SAR Convention by implementing the national SAR Plan for all incidents occurring in the maritime domain, or as otherwise requested by SAR authorities in other domains (aviation or inland).
- 2.1.1.2 In addition to SAR the Coast Guard has a role in responding to maritime casualty and pollution response. In relation to management of Maritime Casualties and Maritime Pollution preparedness and response, there is a suite of legislation which guides this role.
- 2.1.1.3 The Sea Pollution Act 1991 as amended (the "Sea Pollution Act") under which the Minister has appointed officers of the IRCG as authorised officers, to enable them to carry out their duties in cases of maritime casualties, to prevent or minimise damage from pollution where these casualties pose a threat of major harm to the Irish coastline and related interests (Powers of Intervention – IMO Intervention Convention).
- 2.1.1.4 The Sea Pollution Act also implements the IMO framework for the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) which establishes measures for dealing with marine oil pollution incidents from maritime casualties nationally and in cooperation with other countries. The Sea Pollution Act requires a National Oil Spill Contingency plan along with County Council and Port Authority Contingency Plans along with the regime to facilitate the Oil Preparedness, Response and Cooperation Convention which the Coast Guard oversees.
- 2.1.1.5 Additionally, the European Communities (Vessel Traffic Monitoring and Information System) Regulations 2010, give the IRCG powers to act in relation to vessels requesting Places of Refuge and the monitoring of shipping in the Traffic Separation Schemes (Tuskar/Fastnet).
- 2.1.1.6 The Coast Guard also provides a Maritime Assistance Service to vessels in need of assistance.
- 2.1.1.7 Under the Framework for Major Emergency Management the IRCG is nominated as one of the State's Principal Emergency Services along with An Garda Síochána, the Fire Service and Ambulance Service.
- 2.1.1.8 To carry out these functions IRCG provides,
- A marine radio distress listening service and broadcast marine safety information and weather broadcasts;
 - Coordinate SAR in the maritime domain in the Irish SAR Region;
 - Monitor maritime traffic within our Traffic Separation Schemes (Tuskar/Fastnet);
 - Provide a Marine Assistance Service and respond to vessels in need of assistance and/or requesting a Place of Refuge;
 - Monitor the Irish Exclusive Economic Zone (EEZ) and intervene as necessary in maritime casualties to prevent or minimise damage to the marine environment;
 - Coordinate the States OPRC regime and in the event of an incident coordinate the at sea response to maritime pollution from ships and offshore installations and assist Local Authorities in the onshore response;
 - Provide and maintain a marine radio infrastructure;
 - As competent authority for the National Automatic Identification system (AIS), provide a Nationwide coverage for AIS, as required by Directive 2002/59 & 2009/17; and

- Provide support on request to the Principal Response Agencies²/Principal Emergency Services in emergency response.

2.1.1.9 The IRCG operates three marine rescue centres around Irish waters, based in Dublin, Malin Head and Valentia Island. The closest of these centres is in Dublin (a National Maritime Operations Centre (NMOC)), approximately 28 nm from the Proposed Development, which provides marine SAR response services and coordinates the response to marine casualty incidents within the Irish EEZ.

2.2 SAR Facilities and their Response Capability

2.2.1.1 This section outlines the national SAR resources available in the event of an emergency which cannot be dealt with using Proposed Development resources or involves persons or vessels not connected with the Proposed Development.

2.2.1.2 In the event of an emergency incident, National SAR resources (lifeboats and rescue helicopters) are available if:

- The incident exceeds the capability of the Proposed Development resources;
- If in the opinion of the work/safety boat skipper, or work supervisor, or other person, urgent and immediate assistance is required; or
- It is an event which has occurred to persons or vessels not connected with the Proposed Development or its operations. In this event, and where safe and feasible to do so, Proposed Development work and safety craft will respond and provide assistance in accordance with IMO SOLAS regulations, Chapter V. The emergency incident will be reported to IRCG in any case and resources/support will be provided as required

2.2.1.3 Royal National Lifeboat Institution (RNLI) and other volunteer lifeboat and rescue boat services provide craft to rescue persons in danger at sea. However, it must be noted that their personnel are not trained to climb WTGs or enter wind farm arrays, and therefore should not be requested to do so by the Developer. Their role is limited to rescuing or assisting persons from the water, or accessible areas of the Proposed Development, or providing support to vessels in the area, under the coordination of the IRCG.

2.2.1.4 All national SAR resources are tasked and coordinated by the IRCG and therefore any request for assistance will be made via IRCG and not directly to the resource.

2.2.1.5 Should SAR aircraft be required to enter the area within the Proposed Development, the MC will be required to ascertain the specific requirements either from the IRCG or SAR helicopter crew.

2.2.1.6 Considerations may include:

- WTGs to be shut down;
- The rotation of a nacelle to a specific heading as requested by IRCG; and
- In the case of a SAR aircraft approaching a WTG, the rotation of the blades to the desired orientation.

2.3 Medical advice/assistance

2.3.1.1 This section details how medical advice can be sought via the IRCG. Evacuation of injured or ill persons can be arranged with IRCG if Proposed Development resources (work and/or

² The principal response agencies are the agencies designated by the government to respond to Major Emergencies, that is, An Garda Síochána, the Health Service Executive and the Local Authorities.

safety boat) are considered inappropriate, or speed is of the essence. If in doubt, IRCG will be contacted. All offshore wind farm personnel must hold a valid medical certificate. The MC will hold a register of all personnel, including any third parties on site.

2.3.1.2 Further details will be added to future plan iterations.

2.4 Exercises

2.4.1.1 It is recognised as good practice for an initial table-top exercise to be held shortly after commencement of operations. This serves as a 'get to know you' and educational process for all relevant Developer personnel and the emergency services who might be expected to respond to any emergency in or around the installation. All exercises will use 'dummies' or 'mannequins' for situations where real people would be put at risk (e.g., persons in the water, moving and handling and transferring stretcher cases). This will be agreed in advance of any such exercises in consultation with HM Coastguard. As per Section 1.1, this ERCoP is a live document, and any lessons learned will be incorporated via document review and updates.

2.4.1.2 Further details will be added to future plan iterations.

2.5 Unexploded ordnance (UXO) and wreck materials

2.5.1.1 During construction or other seabed operations it is possible that UXO or materials from uncharted wrecks could be located, exposed, disturbed or inadvertently lifted from the seabed.

2.5.1.2 If commercial contractors are not available, the following procedures will be followed:

- a) The object will not be moved (or removed if it is lodged in dredging buckets, pipes or conveyor systems, etc). The situation will be immediately reported to IRCG who will alert the relevant military ordnance disposal organisation. All personnel will be evacuated as far as practicable away from the UXO.
- b) Further information and advice to mariners on the handling of UXO can be found in Irish Marine Notice 03 of 2002.

2.5.1.3 In all cases, IRCG will be informed of every ordnance discovery as international reports (OSPAR) are required to be completed.

2.6 Counter pollution

2.6.1.1 This section summarises pollution response in the event of a leakage from Proposed Development offshore infrastructure, a wind farm affiliated vessel, or from an unidentified source in proximity to the Proposed Development.

2.6.1.2 In case of an environmental incident or accident, all relevant authorities (including IRCG, the port authorities, Environmental Protection Agency (EPA)) will be informed. This is usually carried out automatically by IRCG. However, some of the mentioned bodies may request to receive a notification directly from the Project Manager.

2.6.1.3 The MC will be responsible for reporting pollution incidents to IRCG. The report will comply with the Marine Pollution Contingency Plan (Volume III, Appendix 25.1, Environmental Management Plan, Annex 2) and should as a minimum encompass the following (but not necessarily be limited to):

- Who, what, where, when;
- Actions taken;
- Assistance required;
- Point of Contact for the Proposed Development; and

- Any Other Business.

2.6.1.4 The MCC holds a register of all vessels involved in the offshore construction, this register contains information of types and quantities of major marine pollutants carried on board (e.g., bunkers, lubrication oils and hydraulic oils) including material safety data sheets.

3 Support Arrangements

3.1 Criminal actions and accidents to persons

- 3.1.1.1 In addition to notifying the Gardaí the IRCG must always be informed of criminal activity – suspected or otherwise.
- 3.1.1.2 The Gardaí must always be informed of any deaths and serious injuries associated with the Proposed Development so that early consideration can be given to the investigation, travel to the location, training and health and safety requirements.

3.2 Informing Next of Kin

- 3.2.1.1 Next of kin information is held at the MCC. A Next of Kin will be informed as per ABWP2 procedures (or contractor procedures where applicable). These procedures are known to the Emergency Response Team. The MC or the Emergency Response Team will ensure that next of kin is informed via the official channels.
- 3.2.1.2 In the event of a fatality the Duty Marine Coordinator will liaise with IRCG and Garda Síochána.

3.3 HR Arrangements

- 3.3.1.1 The Developer will ensure Next of Kin are informed if required following any incidents. If the persons involved in the incident are employed by the Developer the information shall be passed to next of kin in consultation with Management as per the contact details in Table 25.5.1.
- 3.3.1.2 If persons involved are employed by one of the contractors then the contractor's HR arrangements will be used.

3.4 Media relations

- 3.4.1.1 Should a media representative make contact in relation to any incident, the details of the media representative should be forwarded onto the Community Engagement Manager whose details are listed in Table 25.5.3. The community engagement team will then make immediate contact with the MCA duty media officer to discuss and coordinate press information.

Table 25.5.3: Community Engagement Manager

Name	Contact details will be added to a future plan iteration
Email	
Phone	

3.5 Shore reception arrangements

3.5.1.1 Survivors may need to be delivered to a location other than the normal embarkation/disembarkation point depending on:

- The location within or nearby the Proposed Development;
- The origin point of the rescue units;
- The weather and/or incident conditions and situation;
- The scale of the incident and its consequences; and
- If any of the survivors have injuries.

3.5.1.2 There are multiple possible scenarios however, it is only likely that the Gardaí will attend a reception centre where an incident involves death, missing people and/or casualties.

4 Additional Information

4.1 Overview

4.1.1.1 The information contained in this section describes the duties and functions of various participants in SAR, explains areas or information requirements of particular importance to SAR and other emergency response, and details the support which may be provided by the Gardaí.

4.2 SAR Mission Coordinator (SMC)

4.2.1.1 Each SAR operation is carried out under the direction of a SMC at the Marine Rescue Centre. This function exists only for the duration of a specific SAR incident.

4.2.1.2 The responsibility of the SMC will vary depending on the nature and severity of the incident. The SMC is essentially in overall charge of coordinating and directing the response to an incident until it is successfully concluded, or a decision has been made to terminate operations.

4.3 The on-scene coordinator (OSC)

4.3.1.1 This section details the appointment and responsibilities of the OSC.

4.3.1.2 The SMC may, according to the severity of an incident, wish to appoint a wind farm work/safety vessel as the OSC. The information below is for the guidance of the persons in charge of such vessels.

- According to International Aeronautical and Maritime SAR Manual (IAMSAR), when two or more SAR facilities are working together on the same mission, it is sometimes advantageous if one person or vessel is assigned to coordinate the activities of all the participating units.
- The SMC designates the OSC, who may be in charge of a SAR Unit (SRU), ship or aircraft participating in a search, or someone at another nearby facility able to handle OSC duties.

4.3.1.3 The OSC will be the most capable person or vessel available, and the following considerations will be taken into account when selecting:

- The amount of SAR training and experience the person may have had;
- Communications capabilities; and
- The length of time that the facility on which the OSC is aboard can stay in the search area.

4.3.1.4 Duties which the SMC may assign to the OSC, depending on needs and qualification include any of the following:

- Assume operational coordination of all SAR facilities on scene;
- Receive and implement the search action plan from the SMC;
- Modify the search action plan based on prevailing environmental conditions, SRU/SAR Facilities availability and capability, new target information and new Developments on scene, keeping the SMC advised of any changes to the plan;
- Establish and maintain communications with all SRUs using the designated on scene channels;
- Provide relevant information to the other SAR facilities;
- Monitor the performance of other units participating in the search. Coordinate and divert surface units or helicopters to evaluate sightings;
- Develop and implement the rescue plan (when needed); and
- Coordinate safety of flight issues for SAR Aircraft Coordinator.
- Information that the SMC needs from the OSC includes:
 - On-scene weather, wind, and sea conditions when significant changes occur, and at least every four hours if the SMC has not stipulated a shorter time interval;
 - SRU on scene arrival and departure information, including actual and estimated time;
 - Pertinent new developments or sightings;
 - Major modifications made to the SMC's SAR action plans, either already taken or recommended;
 - Requests for additional assistance;
 - Summary of search areas;
 - Completed with an assessment of the search effectiveness; and
 - Obtain results of search as each facility departs the scene.

4.4 Search Planning

4.4.1.1 In the event that persons or craft are in danger and drifting on or in sea, and they are unable to provide locating signals or a precise position, SRUs will have to be deployed to physically look for them. This requires that search area calculations are made based on the movements of the tide, local currents and wind (leeway) as they might act on the object drifting e.g. life raft, life boat, drifting vessel, person in the water, etc. Any information that the Proposed Development has or records on tide and wind speed and direction could be helpful in the accurate calculation of search areas. Such useful information could be:

- Information about tides and water currents;
- Availability of any wind data from any Proposed Development resources e.g., anemometer information and how IRCG can obtain this; and
- Explanation of the procedures to be carried out by the IRCG, and any information or actions required from the operator, in the event of search planning action being required.

4.5 Suspension / Termination of SAR Action

4.5.1.1 The SMC is responsible for deciding when to terminate attempts to rescue and/or search operations for incidents but will do so in conjunction with:

- SAR resources;
- OSC;
- Wind farm operators, personnel or contractors;
- Third parties;

- Other emergency services; and
- Any other relevant party engaged in the incident.

4.6 Garda Síochána

4.6.1.1 Details of communication procedures with Garda Síochána will be added to a future plan iteration in liaison with IRCG.

4.7 Emergency Services Liaison

4.7.1.1 It is recognised as good practice that wind farm operators and the emergency services, including the Garda Síochána, should build relationships during the planning and construction phases of any project in order to maximise joint understanding and situational awareness. Once operational, regular visits will be undertaken to operations/control rooms/centres, in order to test and exercise agreed protocols and maintain understanding between all parties.

5 Project Background and Characteristics

5.1 Project Characteristics

5.1.1.1 The Proposed Development is an offshore wind farm situated on and around Arklow Bank in the Irish Sea, approximately 3.2 – 8.1 nm off the coast of County Wicklow. As per Section 1, the Developer is seeking consent for two design options, Project Design Option 1 (56 WTGs) and Project Design option 2 (47 WTGs). This ERCoP will be updated once a Project Design Option is consented with the following information:

- Number of WTGs that are to be installed or are installed;
- Description of the WTGs (manufacturers type-name and/or number and power output);
- WTG dimensions;
- Height of WTGs including to the blade tips (when blades are in the upright, inverted 'Y' position and the highest point when one blade is vertical) above mean sea level;
- Blade diameter and blade markings;
- Details of transition piece (TP)/tower, lifts available, facilities on TP, cranes, landing platforms, restrictions;
- Details of nacelle design, door opening restrictions, helicopter winching basket/rails, ID numbering, aviation lighting, access to and from (e.g. ladders, hatches);
- Information on offshore substation platforms (OSPs) or similar installations/accommodation vessels, dimensions, lighting, helipad restrictions, any accommodation, winching areas, hazards;
- Pictures/diagrams of the WTGs as installed including foundations and TPs;
- Installation layout with accurate positions marked;
- SAR access lane centrelines and a shaded area showing the width of the lane;
- Table of the individual positions (in Latitude and Longitude) of all WTGs and OSPs in the field;
- Spacing between WTGs and OSPs;
- Text description (table) of each SAR lane centre line direction, SAR access point locations and the lengths of each lane (between access points);
- Description of lighting and marking (including buoyage) during the construction period;
- How the construction site is to be guarded and monitored during the construction phase;

- Description of how WTGs and OSPs are to be lit and marked during the O&M phase;
- Feathering and braking limitations of WTGs or other limitations for shutdown or rotation of devices/units;
- Wind turbine locking (pinned) limitations – if applicable;
- Power (export) Cable layouts and Array Area cables including depth of burial, location of entry to foundation;
- Details of advisory safe passing distances;
- Availability of any real time weather information including a web URL and password information, if required; and
- Any other useful information deemed of relevance or requested for inclusion by IRCG.

5.2 Construction Activities

5.2.1.1 The following key construction activities are anticipated:

- Seabed Preparation Activities including potential UXO and boulder clearance, and Pre-lay Grapple Runs;
- Deployment of construction buoyage and temporary lighting on structures as directed by Irish lights;
- Landfall Horizontal Directional Drilling (HDD)/direct pipe works;
- Foundations Installation;
- Offshore Substation Installation and commissioning;
- Offshore Export Cables Installation;
- Inter-Array Cables Installation;
- WTG Installation;
- WTG Commissioning; and
- Completions and snagging.

5.2.1.2 A means by which IRCG will be kept updated on weekly operations will be agreed in a future plan iteration.

5.3 Infrastructure Details

5.3.1.1 Section 5.1 provides details of the infrastructure details that will be added to the ERCoP once a Project Design option is consented.

5.4 Emergency Response

5.4.1.1 Details of the equipment/resources available on the structures associated with the Proposed Development will be added to a future iteration of this plan. As a minimum the following equipment shall be made available:

- Lifesaving apparatus (e.g., stretcher, lifejackets, survival suits);
- Survival kits
- Descender capability, numbers of personnel required to operate equipment, restrictions (e.g., wind direction, TP platform, lowering to vessel/sea);
- Personal Locator Beacons and personal handheld distress flairs; and
- Tagline Kit
- First aid capabilities.
- Fire extinguishers and blankets

5.4.1.2 Crew Transfer Vessels (CTVs) on site will carry as a minimum the following equipment:

- Defibrillator in case of electrical accidents or cardiac arrest;
- Thermal Protective Aids (TPAs) in case of hypothermia;
- Spill response kits;
- Survival kits; and
- Stretcher.

5.5 Emergency shutdown procedures and processes

- 5.5.1.1 An emergency shutdown shall be initiated from the control room by the control room operator in response to a critical situation (using the OT SCADA systems) to protect the personnel, plant, and the environment from potential risks such as health and safety incidents (fire etc) equipment failure, or other emergencies. The plant has the capability to be shut down either in sections (i.e. individual WTGs, arrays, strings, export circuits or as a whole)
- 5.5.1.2 Further details of emergency shutdown procedures will be added to a future plan iteration.

5.6 Vessels/installations on site during construction

- 5.6.1.1 This section lists on an indicative basis the construction vessels which will be present during construction. Once vessel contracts are in place and the vessel specifications are known further details of the equipment/resources available on each vessel will be added to the plan.
- Main Installation Vessels (Jack-up Barge/Dynamic Positioning vessel);
 - Support vessels (Service Operations Vessel (SOV) / Walk-to-Work / Commissioning Jack-Up Vessels (JUVs));
 - Tug/Anchor Handlers;
 - Cable Installation Vessels;
 - Guard Vessels;
 - Survey Vessels;
 - CTVs;
 - Scour/Cable Protection Installation Vessels;
 - Pre-installation boulder removal/clearing vessels;
 - Sandwave clearance vessel; and
 - UXO clearance vessel.

5.7 Airborne Activities

- 5.7.1.1 This section details any helicopters or other airborne activities which may be employed during the construction and operation phases. Details of any planned airborne activities will be added to a future revision of this plan, noting that details of any such activities would also be populated after further liaison with IRCG and the Irish Aviation Authority.

5.8 Locating aids used by personnel or vessels working at the site

- 5.8.1.1 This section details locating aids which will be used during the construction and operation phases. Details of any Locating Aids to be utilised will be added to a future iteration of this plan. This information will include:
- Type(s) of beacon/devices to be used;
 - Frequencies/channels that devices operate on;
 - Procedures for homing to/locating the devices when transmitting;
 - Outline procedures briefed to personnel for use of the devices; and

- How the beacons are registered and emergency contact arrangements.

5.8.1.2 The MCC will maintain a register of its own staff's beacons. Principal Contractors will be required to do the same.

5.9 Electronic surveillance and monitoring systems

5.9.1.1 This section details the electronic surveillance and monitoring systems (known as the Operational Technology (OT) systems collectively) which will be used during the construction and operation phases. The following site systems shall provide surveillance and monitoring for use in search and rescue operations.

Table 25.5.4: Operational Technology Systems Supporting SAR – Operational Phase

SAR Area	OT System	SAR Role
Onshore and Offshore Substations	Transmission Supervisory Control and Data Acquisition (SCADA)	Shut down (and monitoring) of plant in case of emergency from the onshore control room.
	Closed Circuit Television (CCTV) / Wi-Fi/Telephones	External/internal coverage of the areas to the onshore control room – occupied areas only.
	Marking (OSP Only):	ID signage, search and rescue lighting and heli-hoist lighting.
	Locator Beacons (refer to section 5.8)	Locator beacons will be installed in life rafts and may be provided to personnel to alert rescuers of their locations in a man overboard scenario.
WTG Tower & Nacelle	WTG SCADA	Shut down, SAR mode (and monitoring) of WTG in case of emergency from onshore control room.
	Wi-Fi/Telephones	External/internal coverage of the areas to the onshore control room – occupied areas only. Personnel digital mobile radios under investigation to provide 100% coverage.
	Marking.	AIS, ID signage, SAR lighting and heli-hoist lighting.
WTG Foundation	Balance Of Plant (BOP) SCADA	Shut down of 66kV switchgear plant in case of emergency from onshore control room. Note the 66kVswitchgear - may be located in WTG tower.
	Navigational Aids SCADA	Provision and operation of the marine lighting and boat landing lighting in case of emergency from onshore control room.

SAR Area	OT System	SAR Role
	Wi-Fi/Telephones	No coverage of the external working platforms and transition piece
	Marking.	Automatic Identification System, ID signage, marine lighting.
External Locations (Cable Routes and WTG Field Area)	Marine Control System – Permanent	Tracks vessels, aircraft and personnel movement within the windfarm boundary utilising AIS, Automatic Dependent Surveillance–Broadcast and receivers in the onshore control room.
	Marine CCTV System	CCTV system providing coverage of the WTG field with CCTV cameras installed on the WTG foundation providing field and WTG coverage.
	Very High Frequency (VHF)	Emergency VHF comms to vessels and aircraft from the onshore control room
	Digital Mobile Radios (for Personnel)	Voice comms between the control room and all personnel out in the field (cable route and field) with DMR handsets personnel tracking location on a mimic screen.
	Weather Stations (TBC)	Monitor weather conditions for forecasting, marine management
	Long Term Evolution System	Private internet access in the WTG field and cable route for construction and O&M personnel to provide data and VOIP in an emergency.

Table 25.5.5: OT Systems Supporting SAR – Construction Phase

SAR Area	OT System	SAR Role
Offshore Substations/WTGs/WTG Foundations	Markings	Temporary lighting and marking on all structures.
External Locations (Cable Routes and WTG Field Area)	Marine Control System – Temp	Tracks vessels, aircraft and personnel movement within the windfarm boundary utilising AIS, ADSB and DMR receivers in the onshore control room from onshore masts.
	VHF	Emergency VHF comms to vessels and aircraft from the onshore control room

SAR Area	OT System	SAR Role
	Digital Mobile Radios	Voice comms between the control room and all personnel out in the field with DMR handsets personnel tracking location on a mimic screen.
	Wave Buoys	Construction areas,

5.10 Radio Communications

5.10.1.1 The project is planning for the availability of the following radio services during the offshore construction phase:

- VHF Radio System – A VHF radio system will be deployed during the project construction phase to establish communication with both project and non-project marine and aviation crafts. This system will be primarily used for emergency response purposes and will be operated from the marine control room.
- Personnel Mobile Radios – All project personnel working offshore will be equipped with mobile radios. These radios will serve multiple purposes, including inter-party communications, communication with the onshore marine coordinator for work and emergency situations, and personnel tracking through GPS on the marine control system. The mobile radios will enable efficient coordination and ensure the safety of the personnel involved in the project.
- AIS Aerials - AIS aerials receive AIS signals from all vessels (transmitting) for location tracking on the marine coordination system.
- ADSB Aerials - ADSB aerials receive ADSB signals from all aircraft (transmitting) for location tracking on the marine coordination system.

5.10.1.2 These services shall be hosted from an onshore communications mast and onshore marine control room and accompanying marine control system.

5.10.1.3 These systems shall be migrated over for use during the O&M phase of the project.

5.11 Maintenance and Work Operations

5.11.1.1 Potential O&M activities that are anticipated at this stage are listed in Table 25.5.6. A procedure by which IRCG are notified of planned and unplanned maintenance will be defined in a future plan iteration.

Table 25.5.6: Potential O&M Activities

Component	Potential Activities (not exhaustive)
Foundations (WTG)	Routine Inspections Geophysical surveys Repairs and replacements of navigational equipment Removal of marine growth Removal of guano Replacement of corrosion protection anodes Painting Replacement or modifications of ancillary structures (if required) Scour protection repair and maintenance

Component	Potential Activities (not exhaustive)
	Modifications to/replacement of J-tubes
WTGs	Routine inspections Replacement of consumables Removal of marine growth/guano Minor repairs and replacements within the WTG Major component replacement Painting
Foundations (OSP)	Routine Inspections Geophysical surveys Repairs and replacements of navigational equipment Removal of marine growth Removal of guano Replacement of corrosion protection anodes Painting Replacement or modifications of ancillary structures (if required) Scour protection repair and maintenance Modifications to/replacement of J-tubes boat landings and access ladders
OSP	Routine inspections Replacement of consumables and minor components. Major component replacement Painting
Inter-Array Cables	Routine inspections Geophysical surveys Inter-array cable repair Inter-array cable maintenance
Interconnector Cables	Routine inspections Geophysical surveys Interconnector cable repair Interconnector cable maintenance
Export Cables	Routine inspections Geophysical surveys Offshore export cable repair Offshore export cable maintenance

5.12 Diving Operations

5.12.1.1 This section outlines the requirement for diving operations and decompression facilities available. If diving operations take place during construction, survey or maintenance operations, the IRCG shall be informed. Details provided would include the availability, location and status of recompression chambers available for the use of that diving operation (e.g., which vessel(s) have the chamber(s) on board). All Diving operations will be carried out by an appointed diving contractor, approved for the area and operation and shall comply with the Safety, Health and Welfare at Work (Diving) Regulations 2018.

5.13 Firefighting, Chemical hazards, Trapped Persons, etc

5.13.1.1 This section details assistance available for firefighting, chemical incident or trapped person rescue. Details will be added to a future revision of this plan.

5.14 Marine Rescue Centre Contact Information

5.14.1.1 Appropriate contact details will be added to a future plan iteration in liaison with IRCG.

5.15 Garda Síochána Contact Information

5.15.1.1 Best contact details and associated communication procedures will be added to a future plan iteration in liaison with IRCG.

6 Emergency Action Card

6.1.1.1 The emergency action card will be added to a future plan iteration once a Project Design Option has been selected.