

Appendix 5-7: Emergency Response Co-operation Plan





ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report Appendix 5-7: Emergency Response Co-operation Plan

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ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

Contents

	Acronyms.....	iii
	Units	iv
1	INTRODUCTION	1
2	ORGANISATIONAL INFORMATION	2
	2.1 Roles and responsibilities of Oriel Windfarm Limited in an emergency	2
	2.2 Liaison arrangements between OWL and IRCG.....	2
3	SEARCH AND RESCUE INFORMATION	4
	3.1 SAR Coordinators – roles and responsibilities.....	4
	3.2 SAR facilities and their response capability	6
	3.3 Medical advice/assistance	9
	3.4 Exercises.....	9
	3.5 Unexploded ordnance and wreck materials.....	9
4	SUPPORT ARRANGEMENTS	11
	4.1 Criminal actions and accidents to persons	11
	4.2 Informing next-of-kin	11
	4.3 HR arrangements.....	11
	4.4 Media relations.....	11
	4.5 Shore reception arrangements.....	11
5	ADDITIONAL INFORMATION.....	12
	5.1 Five standard SAR stages	12
	5.2 Key operational roles	12
	5.3 Search planning	14
	5.4 Conclusion of SAR operations	14
6	DEVELOPMENT SPECIFIC INFORMATION.....	15
	6.1 Site location.....	15
	6.2 Site layout.....	15
	6.3 Offshore cable layout	18
	6.4 Lighting and marking.....	19
	6.5 Structure information.....	22
	6.6 Vessel information.....	23
7	AVAILABLE EMERGENCY/POLLUTION RESPONSE EQUIPMENT	24
8	EMERGENCY RESPONSE	27
	8.1 Emergency communications	27
	8.2 Reporting incident position/location	27
	8.3 Emergency shut down.....	27
	8.4 Rescue boat capabilities	27
	8.5 Emergency location aids for personnel.....	27
	8.6 Electronic surveillance and monitoring	27
	8.7 Pollution response.....	27
	References	29
A.1	EMERGENCY ACTION CARD	30
A.2	POLREP FORM	32

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

Figures

Figure 6-1: Oriel Wind Farm layout.	16
Figure 6-2: Infrastructure naming.	17
Figure 6-3: Construction marking.	20
Figure 6-4: Blade hover reference and tip marks.	22

Tables

Table 2-1: OWL contact information.	2
Table 2-2: Offshore Transmission Owner (OFTO) contact information.	2
Table 2-3: Key personnel.	2
Table 3-1: RNLI stations within 20 NM.	6
Table 3-2: SAR helicopter details.	6
Table 3-3: Receiver of wreck contact details.	10
Table 5-1: Five standard SAR stages.	12
Table 6-1: Infrastructure naming and coordinates.	18
Table 6-2: Construction buoyage naming and coordinates.	19
Table 7-1: OSS equipment.	24
Table 7-2: WTG equipment.	24
Table 7-3: Service vessel equipment.	25
Table 7-4: OSS pollution equipment.	25
Table 7-5: WTG pollution equipment.	26
Table 7-6: Service vessel pollution equipment.	26

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

Acronyms

Term	Meaning
AC	Alternating Current
AFFF	Aqueous Film-Forming Foam
AGS	An Garda Síochána
AIS	Automatic Identification System
ANSP	Air Navigation Service Provider
ARCC	Aeronautical Rescue Coordination Centre
ARSC	Aeronautical Rescue Sub Centre
CCTV	Closed Circuit Television
CIL	Commissioners of Irish Lights
COSPAS	Cosmicheskaya Sistyema Poiska Avariynich Sudov
DSC	Digital Selective Calling
DoD	Department of Defence
ERCoP	Emergency Response Co-operation Plan
HAT	Highest Astronomical Tide
HNS	Hazardous Noxious Substance
IAA	Irish Aviation Authority
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IAMSAR	International Aeronautical and Maritime Search and Rescue
IRCG	Irish Coast Guard
MF	Medium Frequency
MGN	Marine Guidance Note
MoU	Memorandum of Understanding
MPCP	Marine Pollution Contingency Plan
MRCC	Maritime Rescue Coordination Centre
MRSC	Maritime Rescue Sub Centre
OFTO	Offshore Transmission Owner
OSC	On-Scene Coordinator
OSS	Offshore Substation
OWL	Offshore Wind Ltd
POLREP	Pollution Report
PSCS	Project Supervisor Construction Stage
RNLI	Royal National Lifeboat Institute
ROV	Remotely Operated Vehicle
SAR	Search and Rescue
SARSAT	Search and Rescue Satellite
SITREPS	Situation Reports
SMC	SAR Mission Coordinator
SOLAS	Safety Of Life At Sea
SOP	Standard Operation Practice
SOPEP	Ship's Oil Pollution Emergency Plan
SPS	Significant Peripheral Structures
UXO	Unexploded Ordnance
VHF	Very High Frequency
WTG	Wind Turbine Generator

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

Units

Unit	Description
cd	Candela (luminous intensity)
kHz	Kilohertz
kt	Knot (unit of speed equal to nautical mile per hour, approximately 1.15 mph)
m	Metre
NM	Nautical Mile (1 NM = 1,852 m)

Oriel Wind Farm Project – Emergency Response Co-Operation Plan

1 INTRODUCTION

This Emergency Response Co-operation Plan (ERCoP) has been prepared by Oriel Windfarm Limited (the Applicant) for the construction, operation and maintenance phases of the Oriel Wind Farm Project (hereafter referred to as “the Project”). The ERCoP addresses emergency response and coordination arrangements for the construction and operation and maintenance of the offshore infrastructure of the Project (i.e. all infrastructure below the High Water Mark including the Wind Turbine Generators (WTGs), the offshore substation and offshore cable).

EirGrid, the Offshore Transmission Owner (OFTO) will own and maintain the offshore transmission infrastructure, including the offshore substation (OSS) and offshore cable. It is noted that EirGrid will be responsible for any required actions in the event of an emergency involving EirGrid assets.

This plan describes the actions to be taken in an emergency during both construction and operation, details the resources available to support those actions, and provides emergency contact details.

This ERCoP follows best practice guidelines and is considered a live document. Further detail will be populated to this plan once the relevant details are known and when the design has been finalised. The plan will be agreed with the relevant stakeholders such as the Project Supervisor Construction Stage (PSCS), Project Supervisor Design Process (PSDP), Commissioners of Irish Lights (CIL) and the Irish Coast Guard (IRCG). It will also be updated when relevant guidelines are prepared/updated.

Please note that where information is outstanding, this is noted with a ‘Hold’ and standard text provided in brackets and italics to acknowledge that this information will be provided when it becomes available and prior to construction.

The Department of Transport have prepared guidance on navigation risk and emergency response assessments and is currently in draft and undergoing consultation with the relevant stakeholders (as of February 2024). The Applicant will also consider the final guidance once published and ensures that this ERCoP complies with the guidance.

2 ORGANISATIONAL INFORMATION

2.1 Roles and responsibilities of Oriel Windfarm Limited in an emergency

In the event of an emergency involving Oriel Windfarm Limited (OWL) assets, personnel and/or vessels, OWL is responsible for providing immediate rescue and first aid medical response to a level appropriate to the circumstances of the Project and its location. OWL is also responsible for immediately alerting the Irish Coast Guard (IRCG) of an emergency and for liaising and cooperating with the Maritime Rescue Coordination Centre (MRCC) to ensure an appropriate response if additional assistance is required.

OWL is obliged, under international maritime agreements and practices (e.g. SOLAS (Safety of Life at Sea)) convention, to provide assistance, where it is possible to do so, to other vessels or persons in danger at sea nearby or within the Project and/or when requested to provide assistance by the IRCG.

OWL may also need to provide its own vessel(s) and other assets to respond or react to other maritime emergencies. For example, a pollution incident or the presence of a drifting vessel which presents an actual or possible threat to safety of life or property in the vicinity.

Table 2-1 to Table 2-3 will be completed prior to construction of the Project.

Table 2-1: OWL contact information.

Address	<i>[Hold: to be provided]</i>
Contact Number	<i>[Hold: to be provided]</i>
Email Address	<i>[Hold: to be provided]</i>

Table 2-2: Offshore Transmission Owner (OFTO) contact information.

Address	<i>[Hold: to be provided]</i>
Contact Number	<i>[Hold: to be provided]</i>
Email Address	<i>[Hold: to be provided]</i>

Table 2-3: Key personnel.

Contact	Position	Contact Details
<i>[Hold: to be provided]</i>		
<i>[Hold: to be provided]</i>		
<i>[Hold: to be provided]</i>		
<i>[Hold: to be provided]</i>		

2.2 Liaison arrangements between OWL and IRCG

2.2.1 Cooperation in the event of an emergency

In the event of an emergency where additional assistance is required OWL will contact the IRCG to establish initial lines of communication for information exchange and coordination of response.

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2.2.2 Exchange of information

[Hold: to be completed on further consultation with the IRCG once the project has reached a stage where detail on the monitoring/response for the Project is known.]

2.2.3 Arrangements for assisting IRCG

[Hold: to be completed on further consultation with the IRCG once the project has reached a stage where detail on the monitoring/response for the Project is known.]

3 SEARCH AND RESCUE INFORMATION

The National Search and Rescue (SAR) Plan (Government of Ireland, 2019) establishes the national framework for the overall development, deployment and improvement of SAR services within the Irish SAR Region and to meet domestic and international commitments. The purpose of this plan is to promote a planned and nationally coordinated SAR response to persons in distress at sea, in the air or on land. The following sections set out the roles of national organisations as defined in the plan.

A Framework for Major Emergency Management: Land Based Response to Marine Emergencies (Government of Ireland, 2011) provides additional guidance on how principal response agencies work together in the management of large-scale incidents. The framework provides the interface for three scenarios:

- Extensive emergency at sea with no significant impact on land;
- Extensive emergency at sea with significant impact on land; and
- Extensive emergency at sea with rapid and significant impact on land.

3.1 SAR Coordinators – roles and responsibilities

A SAR Co-ordinator is the agency or body responsible for the overall initiation, coordination and conduct of a SAR operation. Within its domain of activity, the SAR Coordinator has the capacity to receive details of persons, vessels, or aircraft in distress or potential distress or requiring assistance or monitoring; to investigate and evaluate information; and to task and coordinate appropriate SAR units to respond. An Garda Síochána (AGS) may request that the IRCG – MRCC act as the primary coordinator of a SAR incident on land and/or to provide support. This relationship is governed by a memorandum of understanding (MoU) between the AGS and IRCG.

There are three levels of management within the SAR system:

1. Overall management of SAR responsibilities by the three strategic SAR stakeholders (i.e. IRCG, Irish Aviation Authority (IAA) and AGS);
2. Management of individual SAR incidents by operational On-Scene Coordinators (OSCs) (i.e. MRCC, Aeronautical Rescue Coordination Centre (ARCC) and AGS); and
3. Direction of SAR activities at an incident by operational OSCs specifically designated by the SAR Mission Coordinator (SMC) (or equivalents in the AGS).

The following are the SAR Co-ordinators within Ireland's SAR region, along with a description of their roles and responsibilities.

3.1.1 IRCG – MRCC

Role and responsibilities

The IRCG, and specifically the MRCC is the SAR Coordinator for maritime SAR in Ireland and as such is responsible for the tasking and coordination of its own resources, declared assets and State or other available resources to respond to maritime and, when requested by ARCC or AGS, to aeronautical and land SAR incidents respectively.

The IRCG works closely with both IAA and AGS in relation to aeronautical and land SAR incidents and may initiate an initial response through provision of IRCG resources or be requested to act as the primary SAR coordinator of an incident. IRCG may also provide secondary support if requested by IAA or AGS.

For maritime SAR management and coordination, the Irish SAR Region is subdivided into three divisions:

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

- Malin Head;
- Valentia; and
- Dublin Maritime.

SAR operations are overseen by the Dublin MRCC which also co-ordinates SAR operations in the Dublin Division. The Project falls within the Dublin Division.

Core activities of the IRCG relevant to SAR are to:

- Coordinate SAR through the MRCC in the Irish SAR Region, along the coasts and cliffs of Ireland, on inland waterways for which responsibility is assigned to IRCG, and in support of AGS on major inland lakes and remote areas;
- Provide a marine radio distress listening service and broadcast marine safety information;
- Provide the national Marine Assistance Service and respond to ship casualties;
- Provide support on request to statutory bodies or agencies in emergency response; and
- Coordinate Telemedical service through Medico Cork.

Communicating with the IRCG

IRCG uses a network of remote aerials to ensure very high frequency (VHF) coverage from the coast to nominally up to 30 NM offshore. IRCG maintains a 24-hour radio distress watch on VHF and medium frequency (MF) digital selective calling (DSC). The primary means of distress alerting on VHF is by DSC channel 70 but a listening watch is also kept on VHF channel 16. IRCG also maintain 24-hour monitoring of the Eircom 999/112 telephone emergency system.

3.1.2 IAA – ARCC

Role and responsibilities

The IAA, Air Navigation Service Provider (ANSP), operates two ARCCs. The main ARCC is based at the Shannon Air Traffic Control Centre and the Aeronautical Rescue Sub Centre at the Dublin Air Traffic Control Centre.

The ARCCs are the primary points of contact for reports of an aeronautical incident in the Irish SAR Region. The ARCC will request tasking of assets from the AGS, MRCC, or both, depending on the possible nature and location of the incident. When the incident has been located, the appropriate agency (AGS or MRCC) will assume the role of on-scene commander for the incident.

The ARCC will continue to be available to provide any relevant support and information in the SAR event.

3.1.3 AGS

Role and responsibilities

The AGS is the SAR coordinating authority for land-based SAR in Ireland and as such is responsible for the land-based elements of the NSP. AGS works closely with the IRCG and ARCC in relation to the management and coordination of responses to land SAR incidents. In some instances, AGS may request the IRCG – MRCC to act as the primary coordinator of a SAR incident on land and/or to provide support.

SAR activities are generally conducted at district level, with oversight by the local Superintendent. Operational management may be provided by other members on behalf of the local Superintendent.

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3.2 SAR facilities and their response capability

SAR units may belong to State authorities, or 'declared' for use by the State by non-governmental or voluntary organisations. SAR assets and supports are available to the SAR coordinators on request. A declared asset is a SAR facility that maintains a recognised level of availability, competence and safety assurance and can be tasked by the national SAR organisation to respond to a SAR incident.

SAR units do not need to be dedicated solely to SAR operations but are required to have the training and equipment necessary for proficient operations. Volunteer Coast Guard Units are governed by the volunteer code of practice and internal standard operating procedures (SOPs) within the IRCG.

All declared SAR assets are required to operate in accordance with the National SAR Plan and the organisation's published operating procedures and must maintain operating and training standards appropriate to a nationally declared SAR resource.

3.2.1 Royal National Lifeboat Institution (RNLI)

The RNLI can be tasked by the IRCG to respond to an emergency situation; however it must be noted that their personnel are not trained to climb WTG or enter a wind farm and should not be requested to do so. Their role in the offshore wind farm context is limited to rescuing or assisting persons from the water or accessible areas of a wind farm or providing support to vessels in the area. Information on the RNLI stations within 20 NM of the Project is provided in Table 3-1.

Table 3-1: RNLI stations within 20 NM.


Station	Lifeboat types	Launch methods	Number and name	Distance
Kilkeel	Atlantic 85	Davit	B-812 Frank William Walton	7.0 NM
Clogherhead	Shannon Class	Carriage	13-31 Michal O'Brien	8.0 NM
Newcastle	Mersey Class D Class (IB1)	Carriage Carriage	12-20 Leonard Kent D-775 Eliza	16.0 NM
Skerries	Atlantic 85	Carriage	B-866 Louis Simson	18.2 NM

3.2.2 Airborne rescue resources

The IRCG has five medium-lift Sikorsky SAR helicopters deployed at bases in Dublin, Waterford, Shannon and Sligo. The helicopters are designated to be in the air from initial notification in 15 minutes during daylight hours and 45 minutes at night.

The information provided in Table 3-2 provides the general capabilities of the aircraft.

Table 3-2: SAR helicopter details.

Sikorsky S-92	Capabilities
	<ul style="list-style-type: none"> Air Speed: 145 kt Operational range: in excess of 250 NM radius of action Normal flight crew: 4 Capacity: 21 persons as required – 2 stretchers, ~ten seated persons Endurance: over 4 hours De-icing equipment Twin hoist Comprehensive medical suite

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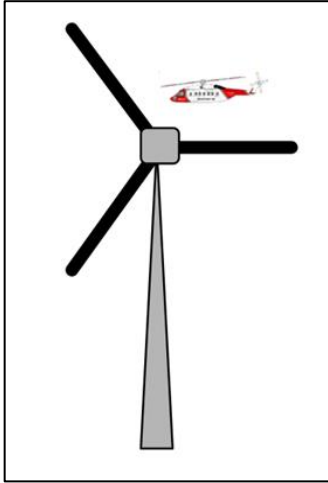
A number of factors including greatest need, weather, availability, etc. affect the tasking of SAR helicopters which means that the nearest aircraft base as detailed above, may not be the one mobilised during an emergency. This allocation of helicopter resources is determined by the IRCG.

Preparation for SAR helicopters

If SAR aircraft are required to enter the Project, specific requirements will need to be implemented as required by either the MRCC or the SAR helicopter crew. These requirements include:

- Turbines to be shut down which may be:
 - A single turbine;
 - A row of turbines;
 - Multiple rows of turbines;
 - A section of the offshore wind farm area; or
 - All turbines in the offshore wind farm area;
- The rotation of a nacelle to a specific ‘nose cone heading’; and
- In the case of a SAR helicopter approaching a turbine, the rotation of the blades to the desired orientation. In the case of the Sikorsky S-92 helicopter, the preferred orientation is either retreating blade in the horizontal position but any orientation from the following may be requested:

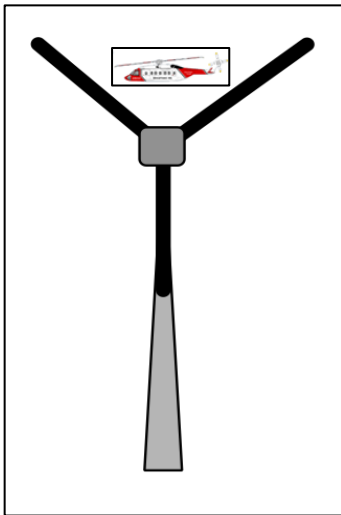
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Retreating Blade Horizontal Position:

The retreating blade horizontal position provides good references with the blade in the pilot and winch operators 2 o'clock position whilst maintaining a clear area for the tail rotor should the crew wish to offset the aircraft for wind or to improve visual references or escape headings.

This is normally the preferred option for winch transfers to the turbine from a S-92.



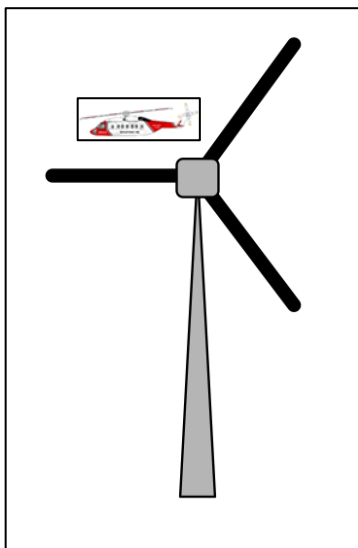
Bunny Ears (Y Blade) Position:

The Y blade position also offers good references with the blade in the pilot and winch operator's 2 o'clock position. The retreating turbine blade aft of the helicopter in the winching position slightly compromises the tail rotor area.

This position is commonly referred to as "Bunny Ears" or possibly the "SAR Position".



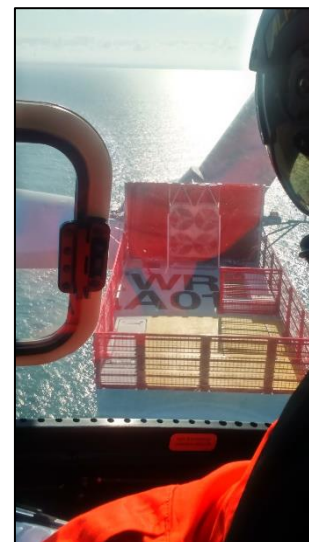
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Advancing Blade Horizontal Position:

The advancing blade horizontal position is the poorest option for references with the retreating blade occupying the area closest to the tail rotor.

This position is also known as “Orientation Stop”, “Heli-Stop” or “Lazy Y”. This is the position usually selected for delivery/recovery of turbine technicians by wind farm helicopters.



3.3 Medical advice/assistance

[Hold: information regarding medical services/equipment is not available at this stage. Information for this section will include:

- Services for provision of medical advice (either procured by the project or via emergency services);
- Medical equipment available (equipment and training available on project vessels); and
- Project ability for evacuation of injured/ill person(s) (critical medevac will be arranged/agreed with the IRCG).].

3.4 Exercises

[Hold: information and planning for exercises will be confirmed when the IRCG guidance document is published. A schedule of exercises will be developed in consultation with the IRCG].

3.5 Unexploded ordnance and wreck materials

3.5.1 Unexploded ordnance (UXO)

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

A desk study for potential UXO contamination was carried out for the offshore wind farm area and offshore cable corridor (see appendix 5-13: UXO Desk Study). The desk study concluded that there is low risk of encountering UXO during the proposed Project activities. Geophysical surveys undertaken across the site, including high resolution surveys at each foundation location, have not identified the potential for UXO.

As such, UXO clearance is not anticipated to be required, however Explosives Site Safety Guidelines which follow UK Marine Guidance Note (MGN) 323 (M+F) and relevant training will be prepared and implemented during the construction phase. In addition, Remotely Operated Vehicle (ROV) inspection work will be undertaken, if required, on any potential items of UXO identified within the offshore array area and offshore cable corridor. If UXOs are found, they will be avoided through micrositing.

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[Hold: commercial contractor options for UXO have not been confirmed. If commercial contractors are not available, IRCG and the Department of Defence (DoD) will be consulted on appropriate actions to be taken which will be agreed prior to construction commencement]

3.5.2 Wreck or wreck materials

Uncharted wrecks (aircraft or vessels), or materials from wrecks may be located, disturbed or inadvertently lifted from the seabed during subsea operations. Any wreck or related material found in Irish territorial waters up to the 12 NM limit or outside Ireland and brought within Irish territorial waters, must by law be reported to the Receiver of Wreck (see appendix 5-10: Marine Archaeological Management Plan). All wreck material, however small or apparently insignificant it may appear, must be reported to the Receiver who will decide on what action is necessary.

The following are not classified as a wreck:

- Boats which have come off their moorings are not classified as wreck, as they have not been abandoned without hope of recovery; and
- Buoys (i.e. marker buoys, mooring buoys etc.) other than those which form part of fishing equipment.

The Receiver of Wreck contact details for County Louth are provided in Table 3-3.

Table 3-3: Receiver of wreck contact details.

Address	Name	Phone Numbers
Carlingford Lough – Killoughter Strand, Co. Wicklow	<i>[Hold: to be provided]</i>	

4 SUPPORT ARRANGEMENTS

4.1 Criminal actions and accidents to persons

Any party which receives reports or information that criminal action is taking place on or within the offshore wind farm area or offshore cable corridor, should inform the IRCG and AGS and then other parties as required as soon as possible.

The AGS must always be informed of any deaths and serious injuries so that early consideration can be given to the investigation, travel to the location, training and health and safety requirements.

4.2 Informing next-of-kin

[Hold: procedures for informing next-of-kin are to be agreed with AGS].

4.3 HR arrangements

[Hold: details on HR arrangements for OWL personnel and sub-contractors to be confirmed.]

4.4 Media relations

As SAR operations often take place in public, it is important that the information provided to the media is correct. The SAR service has a responsibility to ensure that an accurate picture is reported. As the primary source, the SAR service should be proactive in communicating facts to the media. Holding back information that is available from other sources may lead to incorrect information being communicated by the media.

In the event of an incident, the media response should be agreed between OWL, AGS, IRCG, and other involved parties. In the event of an emergency situation OWL will contact these bodies to coordinate media relations including the circulation of agreed press releases and where appropriate, issue of a pre-approved holding statement.

[Hold: contact information for OWL personnel with media relations responsibilities to be included.]

4.5 Shore reception arrangements

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

- The location of the incident;
- The origin points 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.

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

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5 ADDITIONAL INFORMATION

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

5.1 Five standard SAR stages

The response to a SAR incident usually proceeds through a sequence of five stages. These stages comprise groups of activities typically performed by the SAR system in responding to a SAR incident, from the time the system becomes aware of the incident until its response to the incident is concluded. The response to a particular SAR incident may not require the performance of every sequential stage. For some incidents, the activities of one stage may overlap the activities of another stage, such that portions of two or more stages are being performed simultaneously. The five SAR stages are described below in Table 5-1.

Table 5-1: Five standard SAR stages.

Standard Steps		Maritime	Aeronautical	Land
		IRCG	IAA	AGS
1. Awareness: Knowledge by any person or agency in the SAR system that an emergency situation exists or may exist.	Emergency Phases* Uncertainty Alert Distress	MRCC/Maritime Rescue Sub Centre (MRSC)	ARCC/ Aeronautical Rescue Sub Centre (ARSC)	AGS Comms Centres
2. Initial Action: Preliminary action taken to alert SAR facilities and obtain more information. This stage may include evaluation and classification of information, alerting of SAR facilities, communication checks and, in urgent situations, the immediate performance of appropriate activities from other stages.		MRCC/MRSC	ARCC/ARSC	Operational Unit
3. Planning: The development of operational plans including plans for search, rescue and final delivery of survivors to medical facilities or other places of safety.		MRCC/MRSC	ARCC	District HQ
4. Operations: Dispatching SAR facilities to the scene, conducting searches, rescuing survivors, assisting distressed craft, providing necessary emergency care for survivors and delivering casualties to medical facilities.		MRCC/MRSC	ARCC	District HQ
5. Conclusion: Return of SAR UNITS to a location where they are debriefed, refuelled, replenished and prepared for other missions; return of other SAR facilities to their normal activities; and completion of all required documentation		MRCC/MRSC	ARCC	District HQ

* The current emergency phase should be used in all communications about the SAR incident, as a means of informing all interested parties of the current level of concern for the safety of persons or craft which may be in need of assistance and will determine urgency of response.

5.2 Key operational roles

5.2.1 The SAR Mission Coordinator (SMC)

Each SAR operation is carried out under the direction of a SAR Mission Co-ordinator (SMC) at the MRCC. This function exists only for the duration of a specific SAR incident.

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 agreed to terminate operations.

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5.2.2 The On-Scene Coordinator (OSC)

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

- According to the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual (International Maritime Organisation (IMO), 2016), 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 co-ordinate the activities of all the participating units.
- The SMC (at the MRCC) designates the OSC, who may be in charge of a SAR unit, ship or aircraft participating in a search, or someone at another nearby facility able to handle OSC duties.

The OSC should be the most capable person or vessel available, and the following considerations should 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.

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

- Assume operational co-ordination 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, SAR units / 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 SAR units using the designated on-scene channels;
- Provide relevant information to the other SAR facilities;
- Monitor the performance of other units participating in the search. Co-ordinate and divert surface units or helicopters to evaluate sightings;
- Develop and implement the rescue plan (when needed);
- Co-ordinate safety of flight issues for SAR a/c (where no Aircraft Co-ordinator is appointed); and
- Make consolidated situation reports (SITREPS) back to the SMC.

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;
- SAR UNIT 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;

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- Summary of search areas;
- Completed with an assessment of the search effectiveness; and
- Obtain results of search as each facility departs the scene.

5.3 Search planning

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, SAR UNITS 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, lifeboat, drifting vessel, person in the water, etc.). Any information that OWL 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 (e.g. anemometer information) and how the MRCC can obtain this; and
- Explanation of the procedures to be carried out by the MRCC, and any information or actions required from the operator, in the event of search planning action being required.

5.4 Conclusion of SAR operations

SAR operations enter the conclusion stage when:

- Information is received that the subject(s) of the SAR incident are no longer in distress;
- The subject(s) who are in distress have been located, and the survivors rescued; or
- During the distress phase, the Coordinating Authorities determine that further search would be to no avail because additional effort cannot appreciably increase the probability of successfully finding any remaining survivors, or because there is no longer any reasonable probability that the distressed persons have survived.

Next of Kin should be kept briefed on progress particularly to prepare them for the termination phase of the rescue (best done through Garda liaison officer). As soon as the rescue operation has been completed, the SMC should immediately notify all authorities, facilities, or services which have been activated. All information on the conduct of the rescue operation should be added to that on the search operation, and a final report prepared. Information of interest to accident investigation and medical authorities should be given to them without delay. Chapter 8 of the IAMSAR Manual (IMO, 2016) provides guidance on the conclusion of SAR operations.

6 DEVELOPMENT SPECIFIC INFORMATION

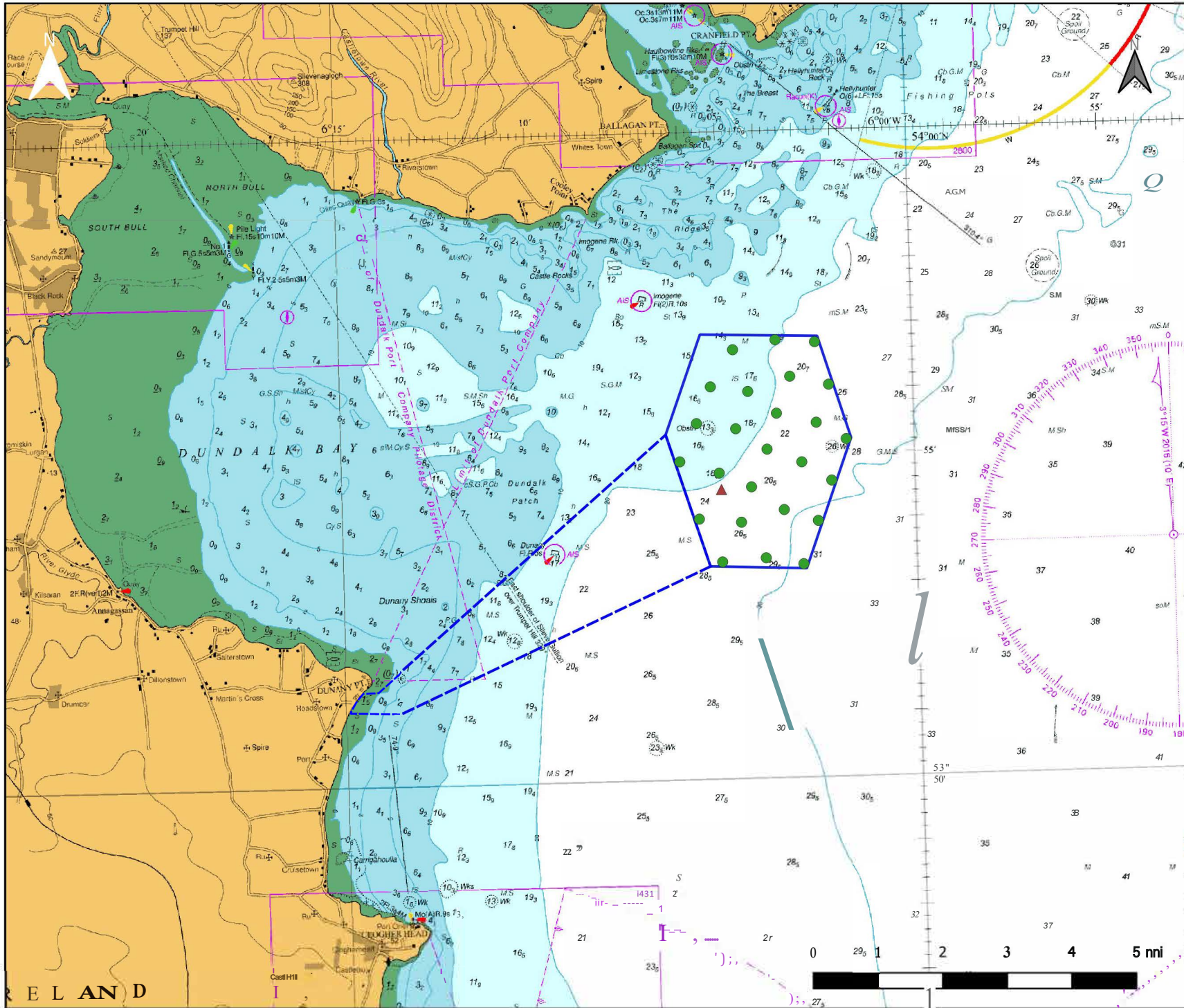
This section provides relevant details and parameters of the Project.

6.1 Site location

The location and layout for the Project is shown in Figure 6-1. The closest WTGs to shore are 3.0 NM from Cooley Point to the northwest and 5.7 NM from Dunany Point in the southwest.

6.2 Site layout

The Project consists of a total of 25 WTGs and one OSS. The positions and naming convention for each of these is shown in Figure 6-2. The coordinates for each structure are provided in Table 6-1



Legend

- Offshore Cable Corridor ---
- Offshore Wind Farm Area D
- Offshore Sub Station ▲
- Wind Turbine ●

Client **ORIEL WINDFARM**
OF OFFSHORE RENEWABLE ENERGY

Project **Oriel Windfarm EIA R**

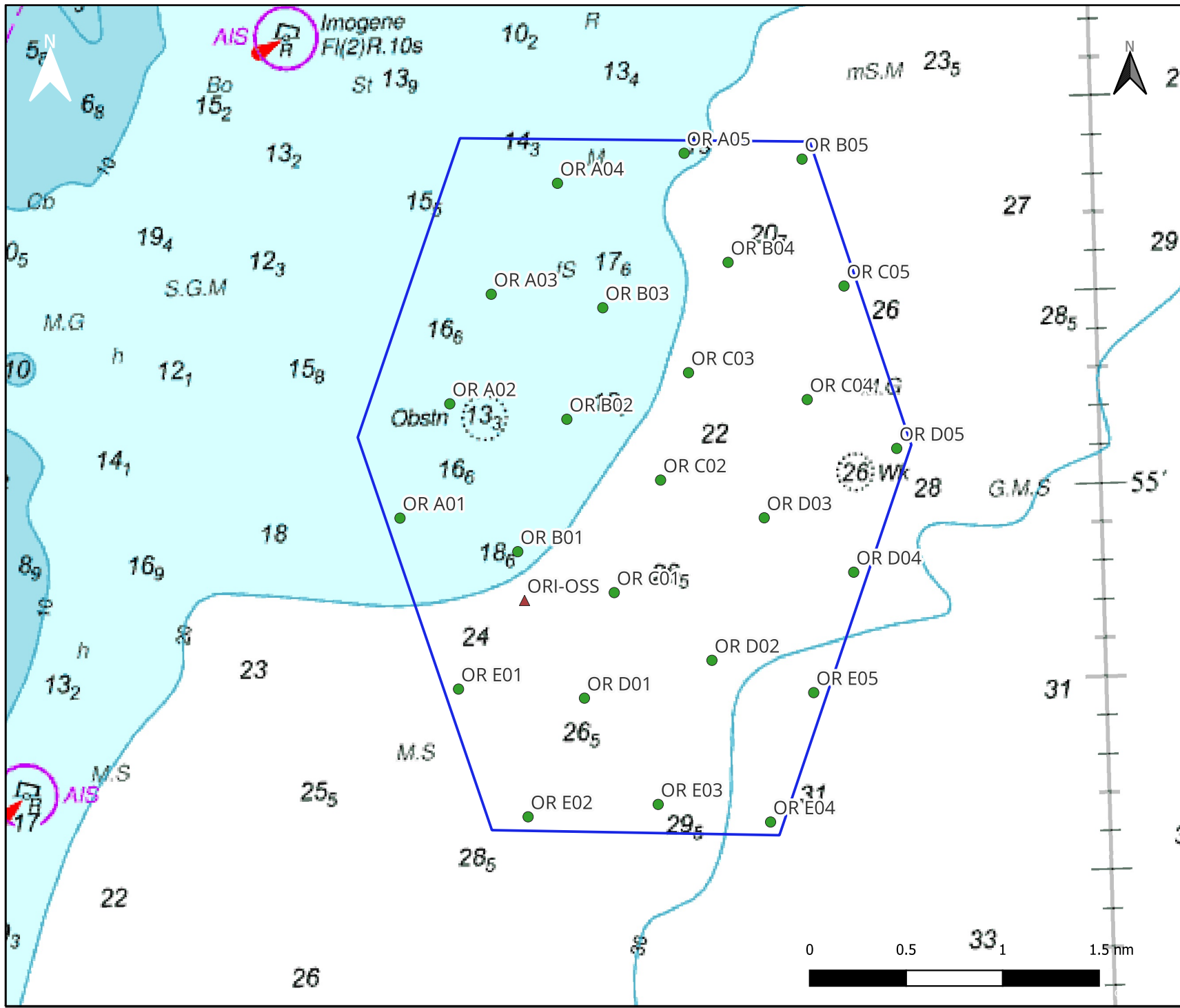
Title **Figure 6-1: Oriel Wind Farm Layout**

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Issue Details

Drawn: AF	Project: MDR1520
Checked: AF	File Ref:
Approved: EJR	MCR 1520G0000001
Scale: 1:150,000 @A4	Projection:
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Legend

- Offshore Wind Farm Area
- Offshore Sub Station
- Wind Turbine

Client

Project **Oriel Windfarm EIAR**

Title **Figure 6-2: Infrastructure Naming**

Issue Details

Drawn: AF	Project: MDR1520
Checked: AF	File Ref:
Approved: EJR	MDR1520QG0000D01
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Table 6-1: Infrastructure naming and coordinates.

Coordinate system WTG ID	ITM - CRS: 2157		UTM-29N / CRS: 32629		WGS 84 / CRS: 4326	
	Easting	Northing	Easting	Northing	Longitude	Latitude
ORI-A01	724655	797868	690292.5	5977973.1	-6.102477	53.915167
ORI-A02	725133	798965	690755.0	5979076.8	-6.094756	53.924904
ORI-A03	725531	800017	691138.1	5980134.3	-6.088268	53.934256
ORI-A04	726167	801082	691759.0	5981208.3	-6.078149	53.943666
ORI-A05	727383	801370	692970.9	5981513.4	-6.059518	53.945955
ORI-B01	725786	797546	691427.9	5977667.1	-6.085403	53.912002
ORI-B02	726257	798817	691881.0	5978944.7	-6.077714	53.923302
ORI-B03	726602	799887	692210.8	5980019.5	-6.072022	53.932828
ORI-B04	727805	800323	693407.6	5980472.4	-6.053531	53.936448
ORI-B05	728515	801314	694103.6	5981473.4	-6.042308	53.945172
ORI-C01	726712	797153	692359.4	5977287.2	-6.071480	53.908247
ORI-C02	727157	798233	692789.2	5978373.4	-6.064263	53.917838
ORI-C03	727425	799264	693042.6	5979408.1	-6.059756	53.927031
ORI-C04	728565	799006	694186.2	5979166.2	-6.042517	53.924432
ORI-C05	728918	800096	694523.8	5980261.2	-6.036687	53.934134
ORI-D01	726426	796140	692087.7	5976270.2	-6.076248	53.899219
ORI-D02	727650	796503	693306.5	5976650.5	-6.057484	53.902179
ORI-D03	728152	797871	693789.2	5978025.5	-6.049277	53.914341
ORI-D04	729011	797349	694655.5	5977515.6	-6.036430	53.909440
ORI-D05	729424	798537	695051.7	5978709.4	-6.029646	53.920007
ORI-E01	725217	796227	690877.6	5976340.2	-6.094598	53.900294
ORI-E02	725885	795001	691562.8	5975123.7	-6.084943	53.889121
ORI-E03	727134	795120	692810.1	5975260.3	-6.065905	53.889885
ORI-E04	728213	794951	693891.4	5975106.5	-6.049571	53.888102
ORI-E05	728627	796193	694287.9	5976354.3	-6.042756	53.899154
ORI-OSS	725851	797078	691500	5977200	-6.08496	53.907782

6.3 Offshore cable layout

6.3.1 Offshore cable

[Hold: the route for the offshore cable has not been confirmed however, it will be located entirely within the offshore cable corridor and will make landfall at Dunany Point.]

The OSS will be connected to the onshore transmission works by one alternating current (AC) 220 kV offshore cable. The offshore cable will have a maximum external diameter of 350 mm and will be a maximum length of 16 km.

6.3.2 Inter-array cables

The WTGs are connected to the OSS via a 66 kV inter-array cabling network arranged with five groups of five WTGs being connected to the OSS. The inter-array cables will have a maximum external cable diameter of 250 mm and will have a total length of 41 km.

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

6.4 Lighting and marking

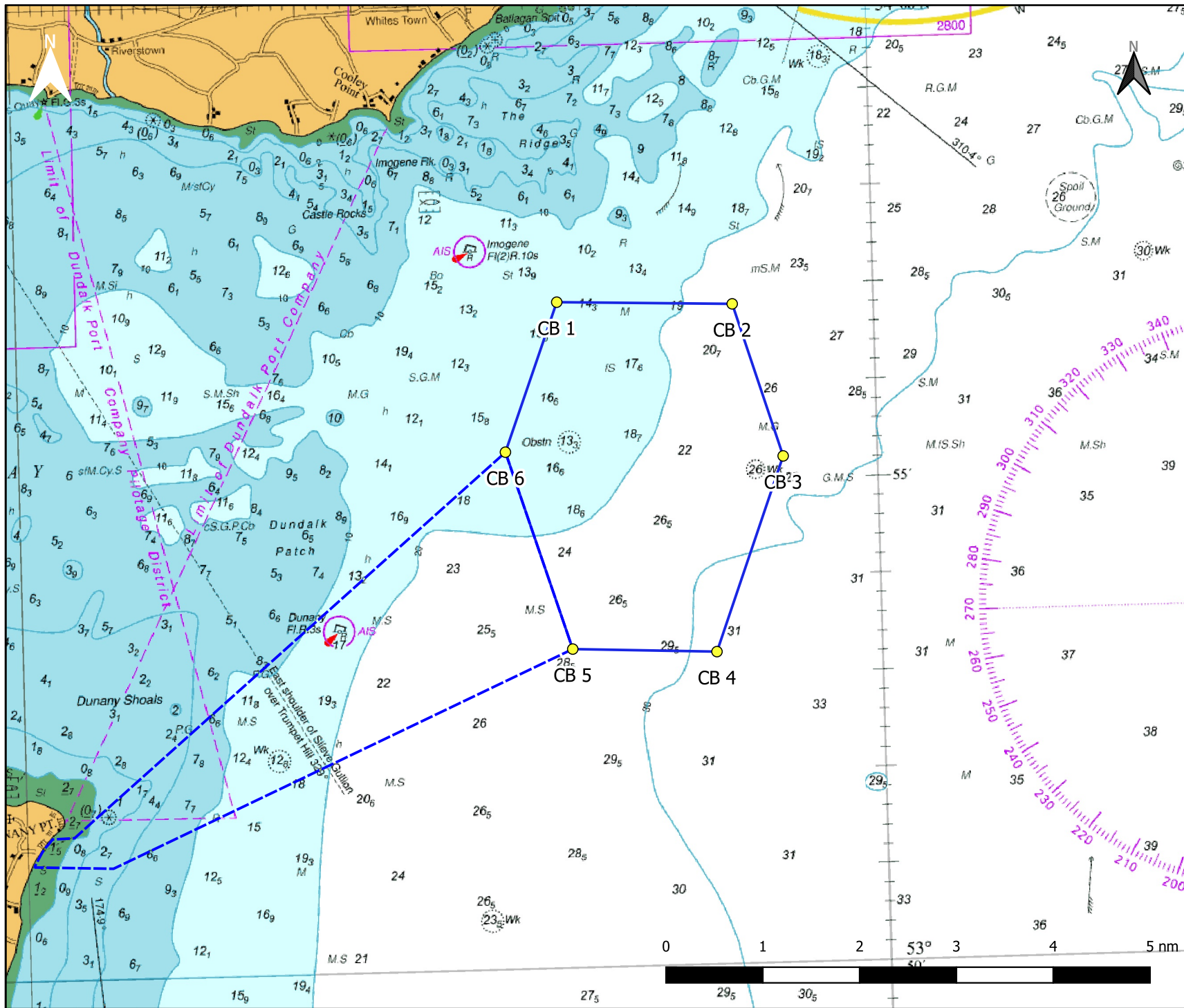
6.4.1 Construction lighting and marking

The offshore wind farm area and offshore cable corridor will be marked as a construction area during the construction phase via the use of temporary construction buoyage. This will be a combination of cardinal marks and special marks as shown in Figure 6-3 and Table 6-2. Specifications of each buoy are:

- Focal plane of at least 3 m and nominal range of 5 NM;
- Minimum of 3 m in diameter at the waterline;
- Pillar shaped with a yellow 'X' shaped top mark;
- Light has the characteristics FI Y 5s;
- Category 2 availability requirement – 99.0%; and
- Radar reflector.

Table 6-2: Construction buoyage naming and coordinates.

Coordinate system WTG ID	ITM - CRS: 2157		UTM-29N / CRS: 32629		WGS 84 / CRS: 4326	
	Easting	Northing	Easting	Northing	Longitude	Latitude
CB 1	725230	801514	690817	5981628	-6.09220	53.94780
CB 2	728589	801482	694175	5981643	-6.04100	53.94620
CB 3	729566	798570	695199	5978745	-6.02800	53.92000
CB 4	728298	794824	693978	5974981	-6.04800	53.88700
CB 5	725538	794872	691221	5974989	-6.09000	53.88800
CB 6	724250	798642	689880	5978739	-6.10800	53.92200



Legend

- Offshore Cable Corridor
- Offshore Wind Farm Area
- Construction Buoyage ●

Client

Project **Oriel Windfarm EIA**

Title **Figure 6-3:
Construction Marking**

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Issue Details

Drawn: AJF	Project: MDR1520
Checked: RM	File Ref:
Approved: AJF	MDR1520QG0000D01
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6.4.2 Operational lighting and marking

When in operation, all the WTGs will be marked with clearly visible and unique identification characters, which will be visible from all sides of the WTGs and comply with applicable international and local rules guidance and requirements. Each structure will be:

- Painted yellow all-round from the level of Highest Astronomical Tide (HAT) to 15 m, or the height of any Aid to Navigation if fitted, whichever is greater; and
- Marked with a unique alphanumeric identifier (“ID Boards”).

WTGs located on the corners of the offshore wind farm area will be marked as Significant Peripheral Structures (SPS). These WTGs are:

- OR A1;
- OR A4;
- OR B5;
- OR D5;
- OR E2; and
- OR E4.

Each SPS will have marine lighting comprising:

- 360° visibility, with flashing International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) special mark characteristics Fl.Y.5 second(s) and with a range of not less than 5 NM;
- IALA Category 1 (> 99.0% availability); and
- Lights not less than 6 m and not more than 30 m above HAT#.

Each SPS will have high intensity aviation lighting comprising:

- Colour white with a flash rate of 40~60 flashes per minute (fpm);
- An effective intensity, with background luminance above 500 cd/m², of 200,000 cd ± 25%;
- An effective intensity, with background luminance 50~500 cd/m², of 20,000 cd ± 25%;
- An effective intensity, with background luminance below 50 cd/m², of at least 2,000 cd;
- Light fittings will be fully cut off so that practically no light will be emitted below the horizontal, or as otherwise agreed with the IAA;
- All lights across the wind farm should flash in synchronisation and reductions in light intensity should occur simultaneously, if practicable; and
- Be visible through 360° in azimuth.

6.4.3 WTG blades and nacelle

WTG blades need to be marked to provide SAR helicopter pilots with a hover reference point when hovering over a nacelle during a rescue. Three marks are required in red on each WTG blade. The marks should have

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

a minimum diameter of at least 600 mm and be positioned on both faces of the blades at distances of 10 m, 20 m and 30 m from the blade root (see Figure 6-4).

Blade tips must be painted red for at least the final 2% of their length as shown in Figure 6-4, again, as an aid to helicopter pilots. However, if lightning protection systems are to be included in the blade tips, the lightning receptors may be left unmarked.

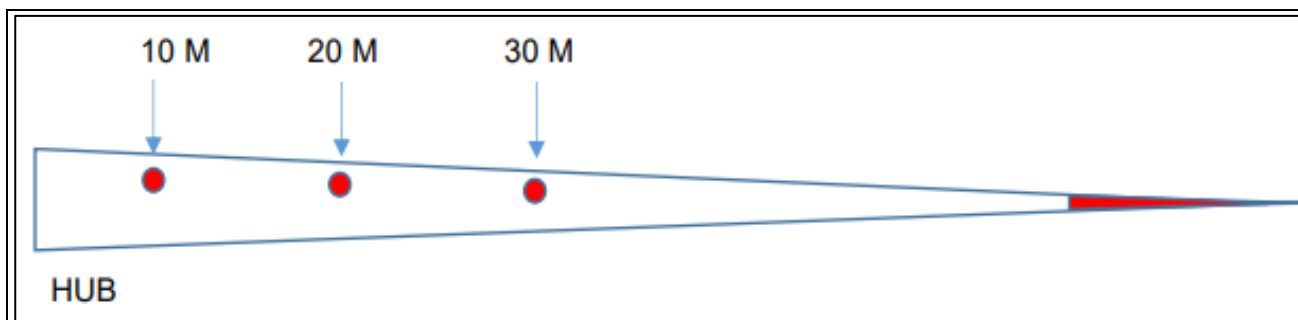


Figure 6-4: Blade hover reference and tip marks.

Individual ID numbers are to be painted on the nacelle roof so that SAR helicopters and/or other low flying aircraft can locate and/or reference a WTG visually. ID numbers should be recognisable from an aircraft flying 500 feet (152 m) above the highest part of the structure (i.e. the blades at their vertical point). Such numbers should be as large as practicable but not less than 1.5 m in height and of proportionate width. ID numbers should be placed on the roof in a logical manner so that the OREI can be easily distinguished however there is no requirement for them to be lit.

6.5 Structure information

This section provides information regarding the design and structure of WTGs and the OSS.

6.5.1 WTG

[Hold: once WTG has been confirmed. This section will include:

- *Key measurements for the WTG including heights, nacelle dimensions and blade information;*
- *Details regarding a heli-hoist platform if included;*
- *Diagram of the nacelle; and*
- *Locking/pinning restrictions.]*

6.5.2 WTG substructure

[Hold: this section will include information regarding the transition between the foundation and the WTG as well as the monopile foundation. This will include diagrams where appropriate.]

6.5.3 OSS

[Hold: this section will include information regarding the OSS including:

- *Dimensions;*
- *Access arrangements;*

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

- *Layout of the deck(s); and*
- *Machinery/equipment locations.]*

6.6 Vessel information

6.6.1 Construction vessels

[Hold: once the construction contractor has been appointed. This section will provide information regarding each of the construction vessels including any rescue boats.]

6.6.2 Operation and maintenance vessels

[Hold: once the operational and maintenance contractor has been appointed. This section will provide information regarding the vessels that will undertake operational and maintenance activities including any rescue boats.]

7 AVAILABLE EMERGENCY/POLLUTION RESPONSE EQUIPMENT

7.1.1 Emergency response equipment

[Hold: this section will list the emergency and lifesaving equipment available on the OSS, WTGs and vessels once it has been confirmed.]

Equipment on OSS

Details for emergency equipment located on the OSS is detailed in Table 7-1.

Table 7-1: OSS equipment.

Equipment	Location	Quantity
Life buoy and line	[Hold: to be provided]	[Hold: to be provided]
Life buoy and light		
Life buoy and smoke signal		
X [Hold: to be provided] person life raft with SOLAS A pack		
Life jacket		
Immersion suit		
Personal descent device		
Stretcher with lifting bridles		
Defibrillator		
Eye wash kit		
First aid kit		
Aqueous Film-Forming Foam (AFFF) fire extinguisher		
Carbon dioxide fire extinguisher		
Dry powder fire extinguisher		
Fire blanket		

Equipment on WTG

Details for emergency equipment located on WTGs is detailed in Table 7-2.

Table 7-2: WTG equipment.

Equipment	Location	Quantity
Auto descent device	[Hold: to be provided]	[Hold: to be provided]
Stretcher with lifting bridles		
First aid kit		
AFFF fire extinguisher		
Carbon dioxide fire extinguisher		
Dry powder fire extinguisher		
Fire blanket		

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

Equipment on vessels

Details for emergency equipment carried by service vessels is detailed in Table 7-3.

Table 7-3: Service vessel equipment.

Equipment	Location	Quantity
Life buoy and line	[Hold: to be provided]	[Hold: to be provided]
Life buoy and light		
Life buoy and smoke signal		
X [Hold: to be provided] person life raft with SOLAS A pack and hydrostatic release unit		
Life jacket		
Immersion suit		
Stretcher with lifting bridles		
Defibrillator		
Eye wash kit		
First aid kit		
AFFF fire extinguisher		
Carbon dioxide fire extinguisher		
Dry powder fire extinguisher		
Fire blanket		
Search and Rescue Transponder		
Emergency Position Indicating Radio Beacon		
Sealed handheld VHF radio with spare battery		
Satellite communication device		

7.1.2 Pollution response equipment

[Hold: this section will list the pollution response equipment available on the OSS, WTGs and vessels once it has been confirmed.]

Equipment on OSS

Details for pollution response equipment located on the OSS is detailed in Table 7-4.

Table 7-4: OSS pollution equipment.

Equipment	Location	Quantity
Sorbent boom	[Hold: to be provided]	[Hold: to be provided]
Sorbent mat		
Contaminated waste bags		
Oil resistant gloves		
Disposable overalls		

Equipment on WTG

Details for pollution response equipment located on WTGs is detailed in Table 7-5.

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

Table 7-5: WTG pollution equipment.

Equipment	Location	Quantity
Sorbent boom	<i>[Hold: to be provided]</i>	<i>[Hold: to be provided]</i>
Sorbent mat		
Contaminated waste bags		
Oil resistant gloves		
Disposable overalls		

Equipment on vessels

Details for pollution response equipment carried by service vessels is detailed in Table 7-6.

Table 7-6: Service vessel pollution equipment.

Equipment	Location	Quantity
Sorbent boom	<i>[Hold: to be provided]</i>	<i>[Hold: to be provided]</i>
Sorbent mat		
Contaminated waste bags		
Oil resistant gloves		
Disposable overalls		
Oil skimmer		
Oil storage system		

8 EMERGENCY RESPONSE

8.1 Emergency communications

The emergency communication equipment available for each vessel will vary depending on its class size and type. However, all vessels operating in the offshore wind farm area and offshore cable corridor will be equipped with a digital VHF radio as a minimum. Each of these vessels will be provided with emergency notification information including lines of communication for the IRCG and OWL.

[Hold: this section will include information on any communications equipment available on the wind farm structures and equipment carried by personnel working on the structures.]

8.2 Reporting incident position/location

It should be noted that the position of any incident is a vital part of the incident response process and should be reported as part of initial incident details. If the incident is on a WTG, the precise coordinates (in latitude and longitude) and ID marking of the WTG or offshore substation (OSS) will be passed to IRCG so that any responding rescue unit may use the position for precision navigation purposes.

8.3 Emergency shut down

[Hold: this section will detail the requirements for initiating an emergency shut down.]

8.4 Rescue boat capabilities

[Hold: this section will be completed once the contractors have been selected. This will include information regarding the vessels which may be used for recovery of persons from the water and the corresponding equipment available.]

8.5 Emergency location aids for personnel

[Hold: this section will include information on any Personal Locator Beacons that will be carried by personnel.]

8.6 Electronic surveillance and monitoring

[Hold: this section will include the provision and location of any:

- *Automatic Identification System (AIS) receivers;*
- *Marine radar installations; and*
- *Closed circuit television (CCTV) locations.]*

8.7 Pollution response

The Marine Pollution Contingency Plan (MPCP) (see Annex 2 in appendix 5-2: Environmental Management Plan) provides the pollution response arrangements for the Project during the construction, operational and maintenance, and decommissioning phases of the Project. The MPCP outlines procedures to protect Project personnel and to safeguard the marine environment in the event of an accidental pollution event arising from offshore operations relating to the Project.

The MPCP outlines the following items:

- Identification and determination of the tier classification of a spill. The severity of a spill depends on its size, the complexity of response and the potential consequences for people, environment, assets, reputation, and for the economy;

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

- Risk assessment for the potential spill scenarios and control measures to minimise or eliminate the risk for the Project;
- Types of oils and chemicals that may be used during the construction and operational and maintenance phases of the Project in an estimated oil and chemical inventory;
- A risk assessment of the potential sources and likelihood of a pollution incident; and
- Oil spill response procedures and actions. This includes verbal notification by the Marine Coordinator to the IRCG and OWL Project Manager by phone and followed up (when practicable) with the submission of a Pollution Report (POLREP) via email (or fax) to the IRCG. The POLREP is included in Annex A.2 below.

The Department of Transport have prepared guidance on navigation risk and emergency response assessments and is currently in draft and undergoing consultation with the relevant stakeholders (as of February 2024). The Applicant will consider the final guidance once published and ensure that the MPCP complies with the guidance and in particular with regard to the National Maritime Oil/HNS Spill Contingency Plan 2020.

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

References

Government of Ireland (2019) National Search and Rescue (SAR) Plan. July 2019

Government of Ireland (2011) A Framework for Major Emergency Management: Land Based Response to Marine Emergencies Multi-Agency Protocol 7. May 2011

International Maritime Organisation (IMO) (2016) International Aeronautical and Maritime Search and Rescue Manual.

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

A.1 Emergency Action Card

Emergency Contact				Project Summary	
One of the following or a combination of both, must be 24/7				Phase	Construction
Duty Holder name	Oriel Windfarm Limited			Range and bearing from land	3.0 NM 319° T
Marine Coordinator (primary number)	HOLD:			Number of WTGs	25
Secondary number	HOLD:			No. of offshore substations	1
Media relations	HOLD:			Location of primary ER facility	
Coastguard	999 / 112			HOLD:	
An Garda Síochána	999 / 112				
WTG Specific information					
Heights (above LAT, in m and ft)		Lights <i>Incl. flash, IR, colour, etc.</i>		Helicopter Winch	
Total height to blade tip	270 m, 886 ft	Aviation lights	HOLD:	Suitable for winching?	HOLD:
Height of Nacelle	150 m, 492 ft	SAR lights	HOLD:		
Height of Transition Piece		Other lights	HOLD:		
Communications					
VHF		Aviation		Additional comms	
HOLD: What channels are used? If aerial on site, approx. range		HOLD: Any aviation specific frequencies		HOLD: Any additional information such as TETRA or satellite communications	
Electronic Monitoring					
AIS		Radar		CCTV	
Location of receiver (indicated by ID) and range of reception		Location (indicated by ID) and range of scanners		Location (indicated by ID) of cameras and range of coverage	

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

<p>Site Rescue Teams</p> <p>HOLD: brief details of mobilisation time and response capabilities and equipment carried.</p>		<p>Shutdown procedure</p> <p>HOLD: outline of the procedure required for turbines to be shut down if required for SAR activity. Also detail any situation where this would not be possible.</p>		
<p>Personal SAR Locating Device Make and Model</p>				
<p>Functions: yes/no</p>	<p>COSPAS-SARSAT</p>	<p>AIS</p>	<p>DSC</p>	<p>121.5 MHz</p>
<p>Mass Evacuation Places of Safety To indicate if mass evacuation is required where persons could be taken to, whether it be accommodation vessel, landfall or near Offshore Installation for temporary relief.</p>				
<p>Place Name</p>	<p>Range and bearing from centre of offshore wind farm area</p>		<p>Location in Latitude and longitude</p>	
<p>Key points of note</p>				

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

A.2 POLREP form

INITIAL POLLUTION REPORT (POLREP)			
To:	MRCC Dublin Telephone +353 (0) email mrccdublin@dtas.ie		
From:		Date and time of report:	
1	<p>Date and time of observation</p> <p>Month, day and time that pollution was observed</p>		
2	<p>Name and contact of observer</p> <p>Indicates who has reported the incident. If a ship, name, home port, flag and call sign must be given</p>		
3	<p>Pollution position and extent</p> <p>Indicates the main position of the pollution in latitude and longitude in degrees and minutes and may in addition give the distance and bearing of some prominent landmark known to the receiver. Estimated amount of pollution (e.g. size of polluted areas, number of tonnes of oil spilled, or number of containers, drums, etc. lost). Indicates length and width of slick given in nautical miles.</p>		
4	<p>Pollution characteristics</p> <p>Gives type of pollution (e.g. type of oil with viscosity and pour point, packaged or bulk chemicals). For HNS give proper name or United Nations number if known. For all, give also appearance (e.g. liquid, floating solid, liquid oil, semi-liquid sludge, tarry lumps, weathered oil, discolouration of sea, visible vapour). Any markings on drums, containers, etc. should be given.</p>		

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

INITIAL POLLUTION REPORT (POLREP)		
5	<p>Pollution source and cause</p> <p>(E.g. from vessel, offshore unit or other). If from vessel, say whether as a result of a deliberate discharge or casualty. If the latter give brief description. Where possible, give name, type, size, call sign, nationality and port of registration of polluting vessel. If vessel is proceeding on its way, give course, speed and destination.</p>	
6	<p>Wind direction and speed</p> <p>Indicates wind direction and speed in degrees and m/sec or knots. The direction always indicates from where the wind is blowing.</p>	
7	<p>Current or tide</p> <p>Indicates current direction and speed in degrees and knots and tenths of knots. The direction always indicates the direction in which the current is flowing.</p>	
8	<p>Sea state and visibility</p> <p>Sea state indicated as wave height in metres. Visibility in nautical miles.</p>	
9	<p>Pollution drift</p> <p>Indicates drift course and speed of pollution in degrees and knots and tenths of knots. In case of air pollution (gas cloud) drift speed is indicated in m/s.</p>	
10	<p>Forecast</p> <p>(E.g. arrival on beach with estimated timing). Results of mathematical models</p>	
11	<p>Identity or ships on scene</p>	

ORIEL WIND FARM PROJECT – EMERGENCY RESPONSE CO-OPERATION PLAN

INITIAL POLLUTION REPORT (POLREP)		
	Indicates who has reported the incident. If a ship, name, home port, flag and call sign must be given. Ships on scene can also be indicated under this item by name, home port, flat and call sign, especially if the polluter cannot be identified and the spill is considered to be of recent origin.	
12	<p>Action taken</p> <p>Any action taken to combat the pollution.</p>	
13	<p>Photographs or samples</p> <p>Indicates if photographs or samples from the pollution have been taken. Communication addresses of the sampling authority should be given.</p>	