CONSTRUCTION / OPERATIONS / DECOMMISSIONING PHASE EMERGENCY RESPONSE COOPERATION PLAN BETWEEN KINCARDINE OFFSHORE WINDFARM LIMITED AND HM COASTGUARD

Prepared	Checked	Reviewed	Approved	ECoW Approved
Apr 19, 2019	Apr 19, 2019	Apr 19, 2019	Apr 19, 2019	Apr 19, 2019
Organisation: KOWL	Organisation: KOWL	Organisation: KOWL	Organisation: KOWL	Organisation: KOWL
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OFFSHORE RENEWABLE ENERGY INSTALLATIONS ERCoP EMERGENCY CONTACT AND QUICK REFERENCE INFORMATION

Kincardine Offshore Windfarm Limited Emergency Contact Information

24-hour Initial Telephone Number	+44 (0) 7444 074167
Alternative Contact Numbers	+34 686 514 488
Media Response Number	0141 333 0557

NOTE: Further contact details can be found in Section 2.5.

HM Coastguard Emergency and Routine Contact Numbers

Primary Renewables Emergency Response and Routine Number	+44 (0) 1262 672317
Secondary Emergency Telephone Contact	Dial 999/112 and ask for Coastguard
Primary Routine Number	Aberdeen Coastguard operations centre 01224 592 334
VHF / MF DSC Routine Contact MMSI	MMSI - 992351268
VHF DSC Distress / Urgency Alerting	DSC sets will make an 'all stations' call in this mode of operation and this will be received by the relevant CGOC
Radio Call-sign for HM Coastguard	*'UK Coastguard'*

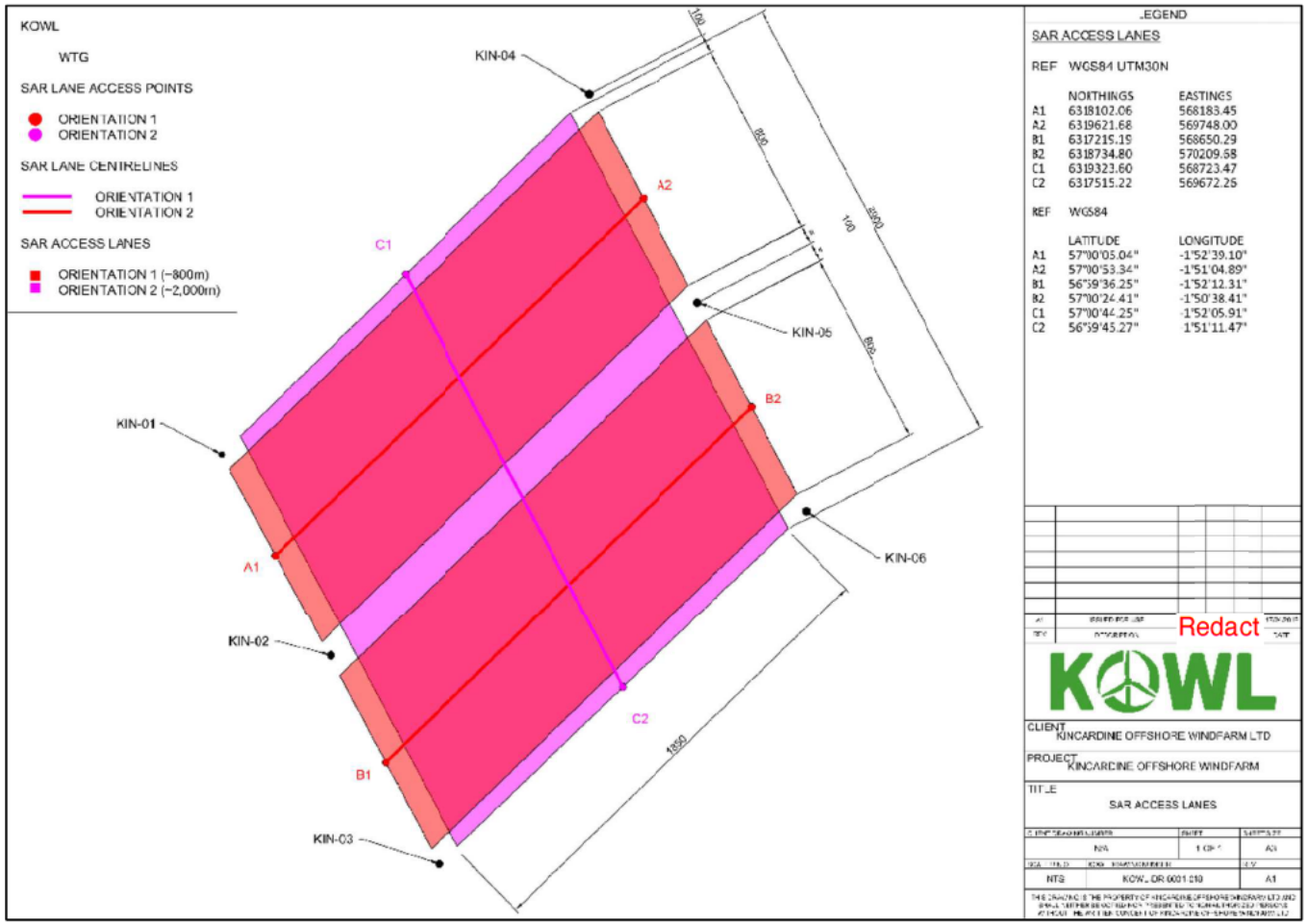

Figure 0-1 SAR Access Lanes (See Section 2.3 for Full Details)

Table 0-1 Windfarm Information

Wind Turbine Parameter	2 Megawatt (MW)		9.5MW	
	Height Above LAT	Height Above MHWS	Height Above LAT	Height Above MHWS
Total height (to blade tip)	106m	Same as LAT	191m	Same as LAT
Hub height	66m	Same as LAT	104m	Same as LAT
Interface height (foundation to transition piece)	12m	Same as LAT	13m	Same as LAT
Spacing between turbines	1,000m			
Spacing between rows	2,167m			

Revision History

Date	Rev. Status	Purpose of Issue*	Remarks	Initials
22-03-2018	A1	First Issue	Initial Draft for Review	Reda
23-03-2018	B1	External Review	Issued for External Review	R
02-05-2018	C1	For Information	Approved for Use	R
08-10-2018	C2	For Information	Approved for Use	R
16-04-2019	C3	For Information	Issued for External Review	Re

*Purpose of Issue: for information, for review, for approval

Detailed Change Log

Date	Rev. Status	References	Description of changes	Initials
23-03-2018	A1		Minor Formatting changes	R
02-05-2018	C1		Minor text change, logo	R
08-10-2018	C2		Updated Page 2 Quick Reference Information, Table 1-1, 2-3 and Section 2.5 with new emergency contact details. Minor formatting throughout.	R
17-04-2019	C3		Minor text changes throughout. Deletion of Figures 2-1, 2-2 & 5-1 and Table 2-1. Updates to Figures 0-1, 7-1, 8-1 & 8-2 Tables 0-1, 2-2, 2-3, 5-1, 5-2,5-3 & 8-2. Addition of Figure in section 5.3	Re

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ACRONYMS, ABBREVIATIONS and DEFINITIONS

ACO	Aircraft Coordinator
AIS	Automatic Identification System
ALARP	As Low As Reasonably Practicable
ALB	All-Weather Lifeboat
ARCC	Aeronautical Rescue Coordination Centre
CDM	Construction Design and Management
CGOC	Coastguard Operations Centre
CTV	Crew Transfer Vessel
DSC	Digital Selective Calling
EOD	Explosive Ordnance Disposal
ERCoP	Emergency Response and Cooperation Plan
ERT	Emergency Response Team
EPCI	Engineering, Procurement, Construction and Installation
EPIRB	Emergency Position Indicating Radio Beacon
ETV	Emergency Towing Vessel
GPS	Global Positioning System
HAT	Highest Astronomical Tide
HSC	Health and Safety Coordinator
HSE	Health and Safety Executive
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IAMSAR	International Aeronautical and Maritime Search and Rescue
ICAO	International Civil Aviation Organization

ILB	Inshore Lifeboat
IMO	International Maritime Organization
IP	Internet Protocol
IPS	Intermediate Peripheral Structure
kHz	Kilohertz
km	Kilometre
KOWF	Kincardine Offshore Windfarm
kV	Kilovolt
LAT	Lowest Astronomical Tide
LMP	Lighting and Marking Plan
m	Metre
MCC	Marine Coordination Centre
MCA	Maritime and Coastguard Agency
MF	Medium Frequency
MHWS	Mean High Water Springs
MHz	Megahertz
MLWS	Mean Low Water Springs
mm	Millimetre
MSI	Maritime Safety Information
MSL	Mean Sea Level
MW	Megawatt
NLB	Northern Lighthouse Board
nm	Nautical Mile
NMOC	National Maritime Operations Centre

OELO	Offshore Energy Liaison Officer
OREI	Offshore Renewable Energy Installation
OSC	On-Scene Coordinator
PLB	Personal Locator Beacon
RNLI	Royal National Lifeboat Institution
ROC	Rehearsal of Concept
SAR	Search and Rescue
SHE	Safety Health and Environment
SITREPS	Situation Report
SMC	Search and Rescue Mission Coordinator
SOLAS	Safety of Life at Sea
SRU	Search and Rescue Unit
TETRA	Terrestrial Trunked Radio
TPA	Thermal Protective Aid
UHF	Ultra High Frequency
VHF	Very High Frequency
WTG	Wind Turbine Generator
UK	United Kingdom
UKSRR	United Kingdom Search and Rescue Region
UN	United Nations
UXO	Unexploded Ordnance

1. DISTRIBUTION AND CONTROL

Copies of the Kincardine Offshore Windfarm (KOWL) (hereafter referred to as the 'Project') Emergency Response Cooperation Plan (ERCoP) are distributed as per the contact list in Table 1-1. Distribution and control will be maintained by the KOWL Project Manager.

As required the Project Manager will distribute revised copies of the ERCoP to the Maritime and Coastguard Agency (MCA), and the Project Manager will issue paper copies to all the vessels working on the project.

The Project Manager will also distribute revised copies of the ERCoP to any contractors. It is then the responsibility of any Contractor to distribute the Project's ERCoP to their sub-contractors and all vessels involved in the operation.

Table 1-1 Emergency Response Cooperation Plan Distribution List

Organisation	Contact	Telephone (Office Hours)	24 Hour Telephone / Mobile	Email / Address for Provision of Updated ERCoP
MCA Offshore Energy Liaison Officer (OELO)	Redacted	Redac	Redacted	Redacted
Coastguard Operations Centre (CGOC) Aberdeen	Duty Watch Manager	01224 592334	01224 212862	Aberdeen.coastguard@mcga.gov.uk
Kincardine Offshore Windfarm Limited	Duty Person	01224 060 450	Redacted	Redacted

2. PROJECT INFORMATION

2.1. Project Summary

The Project is considered a commercial demonstrator site, which will utilise a floating foundation technology, and will be one of the world's first arrays of floating wind turbines. It has been included within the Survey, Deploy and Monitoring scheme for offshore renewable systems (similar to wave and tidal devices).

The Project is located south-east of Aberdeen approximately eight nautical miles (nm) (approximately 15 kilometres (km)) from the Scottish coastline and provides suitable water depth for a floating offshore wind demonstrator development (approximately 60 to 80 metres (m)).

The Project is split into the following areas:

- The Development Area – the windfarm area including the Wind Turbine Generators (WTG) and inter-array cables;

- The Offshore Export Cable Corridor – the area within which the export cables will be laid (one is installed), from the perimeter of the Development Area to the onshore area at MHWS; and
- The Onshore Area – the onshore area above MHWS including the underground cables connecting to the onshore substation at Redmoss.

2.2. Overview

Drawing KOWL-DR-0001-015 - Field Layout Consent and WTG Position Check, which can be found in Appendix A, presents the location (relative to the United Kingdom (UK) coastline) of the Development Area for which the appropriate marine licenses have been granted, including the positions of each of the six WTGs.

The Marine Coordination Centre (MCC) is located in Aberdeen and during offshore construction will be manned daily between the hours of 0800 and 1800.

2.3. SAR Access Lanes

SAR Access Lanes have been defined within the Development Area, as shown in Figure 0-1. Details of each lane are summarised in Table 2-1.

Table 2-1 SAR Access Lane Details

Lane	Access Point	Access Point Position (WGS84)		Width (m)	Centreline Length (m)
		Latitude	Longitude		
A	A1	57° 00' 05.04" N	1° 52' 39.10" W	800	2,174
	A2	57° 00' 53.34" N	1° 51' 04.89" W		
B	B1	56° 59' 36.25" N	1° 52' 12.31" W	800	2,174
	B2	57° 00' 24.41" N	1° 50' 38.41" W		
C	C1	57° 00' 44.25" N	1° 52' 05.91" W	1,880	1,987
	C2	56° 59' 45.27" N	1° 51' 11.47" W		

Figure 0-1 drawing can be found in Appendix B.

2.4. Roles and Responsibilities of KOWL in an Emergency

In the event of an emergency on a WTG or at sea involving its personnel and / or vessels, KOWL is responsible for providing immediate rescue and first aid medical response to a level appropriate to the circumstances of the windfarm and its location. KOWL is also responsible for immediately alerting HM Coastguard of an emergency and for liaising and cooperating with the relevant CGOC to resolve the emergency.

KOWL is also obliged, under international maritime agreements and practices, e.g. Safety of Life at Sea (SOLAS) convention (IMO, 1974), to provide assistance, where it is possible to do so, to other vessels or persons in danger at sea nearby or within the Development Area and / or when requested to assist by the relevant CGOC.

KOWL may also need to provide its own project 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 in the OREI field.

Further information is contained in *Offshore Renewable Energy Installations: Requirements, Guidance and Operational Considerations for Search and Rescue and Emergency Response* (MCA, 2016) available on the MCA website.

2.5. KOWL Contact Information

Person Responsible for ERCoP and Liaison

The Project Manager based in KOWL Aberdeen office is responsible for the ERCoP.

- Principle Liaison Officer Contact Details
  - Tel 1: 07444 074167
- Support Liaison Officer Contact Details
  - Tel 1: 01224 060453

Office Responsible for the Project

Address The Silver Fin Building, 455 Union Street, Aberdeen AB11 6DB
Tel 01224 060450

Operations Office

Address Cobra Wind International Limited, 11 Chapel Street, Aberdeen, AB10 1SG
Tel 01224 653350

- O&M Manager Contact Details
  Redacted

Marine Coordination VHF Communication: Channel 16 available

Internet Communication: WIFI on the turbine available

Project Contacts List

Table 2-2 presents the Project contact list for the Project.

Table 2-2 Project Contact List

Position	Name	Mobile Phone	Email
Emergency Number	Duty Person	Redacted	kincardine@kincardineoffwind.com
Project Manager	Redacted	Redacted	Redacted
Managing Director	Redacted	+34 6865 14488	Redacted

3. EMERGENCY RESPONSE AND EMERGENCY RESPONSE TEAM

3.1. Overview

This Emergency Response Cooperation Plan is designed to work with the shipboard and other already established plans.

The Project Manager is the single contact point for all matters related to these procedures.

The Project Manager shall ensure that all relevant contingency / rescue operations are initiated. The Project Manager shall then contact the Project director. They shall decide whether or not to activate the Project's Emergency Response Team (ERT).

The objective of the ERT is to monitor and ensure that accidents or emergency situations are dealt with efficiently to protect human life and health and minimise damage to the environment and equipment.

The members of the ERT are on call 24 hours a day. Together they hold all relevant information for their own purpose, or for passing on to the CGOC or other authorities.

3.2. Marine Coordination

KOWL are currently developing the marine coordination plan with its principal marine contractors and also the operations and maintenance team.

4. LIAISON AGREEMENTS AND INFORMATION EXCHANGE

4.1. Liaison Agreements

KOWL work under the principle that the first response to any incident shall be at the location of the incident, whether this be a windfarm structure or a vessel. This applies equally to the construction and operational phases. Therefore, the Project requires a certain standard and capability from those it engages with, in respect of windfarm activities.

These standards and competencies are however limited to what is practicable in respect of the vessels, structures and personnel (noting at all times responsibilities under SOLAS). For this reason, KOWL recognises the additional capabilities and competencies that are provided through the CGOC. In relying upon the services of the CGOC, KOWL recognises that effective preparation is fundamental to the management of any incident. The main elements of preparation are contained within this ERCoP and provide the CGOC with the majority of the information that can be provided in advance.

In respect of real time information requirements in the event of an incident, KOWL shall at no stage position itself, unless requested by the CGOC, between the CGOC and any party involved in an incident associated with the Development Area.

Therefore, all communications in respect of an incident will be directly between those involved and the CGOC, unless the CGOC advise otherwise. KOWL will however place its Project Manager (contact details in Table 2-2) at the immediate disposal of the CGOC. This ensures effective communication of all information relevant to the incident. The Project Manager shall also have a requirement to instigate the Project's Emergency Response Procedure.

The salient points of this procedure are that:

- All offshore incidents are, in the first instance, managed by the associated or responsible vessel(s);
- In the event of an incident, all vessels trigger their own Emergency Response Plan, which must ensure immediate contact is made to the MCA and, in parallel, contact is made to the Project and the main contract party involved in the activity;
- The main contract party and the Project cooperate between themselves and as per the directions of the CGOC; and
- Each company's Emergency Response Plan triggers more detailed procedures or processes within the relevant companies which are not included in this document; however, any key feeds are identified, e.g. media handling rules.

HM Coastguard commits to providing National Search and Rescue (SAR) resources (lifeboats and rescue helicopters) if:

- The incident exceeds the capability of the Project's resources;
- In the opinion of the work / safety boat skipper, work supervisor or other person, urgent and immediate assistance is required; or
- The incident involves persons or vessels not connected with the Project, in which case (and where safe and feasible to do so), the windfarm and safety craft should respond and provide assistance in accordance with the SOLAS Regulations, Chapter V (IMO, 1974).

As it is a vital component of the incident response process, the position of any incident shall be reported as part of the initial incident details to HM Coastguard. If the incident occurs on a WTG, the precise coordinates (in Latitude and Longitude) shall be provided to the CGOC so that any responding rescue unit may use the position for precise navigation purposes.

4.2. Information Exchanges

KOWL shall maintain control of the windfarm construction site via a dedicated MCC. This MCC shall provide a service on a 24/7 basis local to the site at the onshore Construction Office at Cobra Wind International Limited, 11 Chapel Street, Aberdeen, AB10 1SG. The real time information that shall be held by the Project Manager includes, but is not limited to:

- Construction Health and Safety Plans (for the activities taking place at the time);
- Main Engineering, Procurement, Construction and Installation (EPCI) Contractor emergency contact details;
- Main EPCI contractor Emergency Response Plans;
- Vessel specifications;
- Vessel Emergency Response Plans; and
- All personnel working offshore at a given time (names, date of birth, nationality and next of kin as a minimum).

All of the above information shall be immediately available to the CGOC in the event of an incident. The Project Manager will have constant access to the following communication methods:

- Telephone;
- Email;
- Internet; and

- Very High Frequency (VHF) radio including assigned private channels [private channel to be confirmed, but channel 16 for all safety priority calls].

For contact details see 2.5

4.3. Provision of Liaison Officer(s) and Other Services

At the request of the CGOC, KOWL will provide liaison officer(s) to the CGOC. In reviewing the optimal resource, KOWL has considered the experience and information that needs to accompany any such resource. For this reason, it is suggested that an off-duty duty manager and the Project's Health and Safety Coordinator (HSC) are available to the CGOC in this capacity as they both have detailed knowledge of varying aspects of the Project and, importantly, the information that is available. In addition, KOWL are able to provide further resources to the CGOC such as health and safety specialists, engineering specialists, media relations and / or public relations specialists; however these may not be readily available on a 24/7 basis.

Therefore, whilst plans shall be initiated and responsibilities placed upon the HSC and the Project Manager to be prepared for this role, it is suggested that the optimal resource in real time is discussed between the CGOC and KOWL Project Manager. This should however not delay any Liaison Officer initiating arrangements to travel to the CGOC if required.

5. PROJECT DESIGN PARAMETERS

5.1. Project Layout

Table 5-1 presents the coordinates of the six WTG positions under consideration, with the WTG positions shown in Figure 5-1.

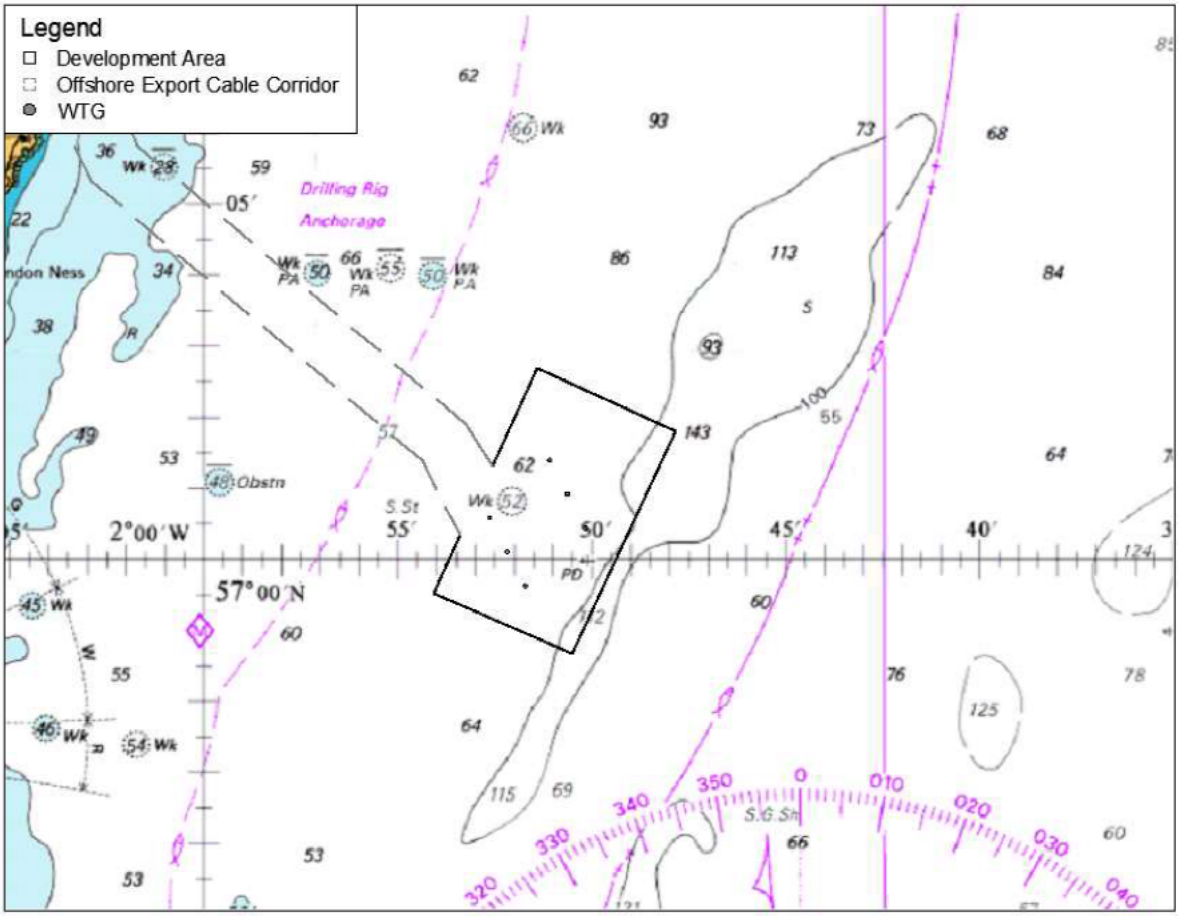


Figure 5-1 Site Layout

Table 5-1 WTG Coordinates (WGS84)

Location	Latitude	Longitude	Status
1 (KIN-01)	001° 52' 46.223" W	57° 00' 19.727" N	Installed
2 (KIN-02)	001° 52' 19.737" W	56° 59' 50.793" N	Planned 2020
3 (KIN-03)	001° 51' 53.262" W	56° 59' 21.857" N	Planned 2020
6 (KIN-04)	001° 51' 12.140" W	57° 01' 07.476" N	Planned 2020
7 (KIN-05)	001° 50' 45.664" W	57° 00' 38.536" N	Planned 2020
8 (KIN-06)	001° 50' 19.200" W	57° 00' 09.595" N	Planned 2020

5.2. WTG Details

The type of WTGs to be installed are summarised in Table 5-2. It is noted that two different models are to be installed; these are 2 Megawatt (MW) and 9.5MW models which will each be fitted to the sub-structures. Figure 5-2 presents sample illustrations of the sub-structures types (steel semi-submersible WindFloat™) to be used.

Table 5-2 WTG Parameters

	2MW	9.5MW
Manufacturer	Principal Power	Principal Power
WTG Model	Vestas v80	Vestas V164
Associated Sub-Structure	Prototype WindFloat™	Full size WindFloat™
Total to be Installed	1	5

Figure 5-2 Steel Semi-Submersible Sub-Structure

Technical Specifications

Table 5-3 presents an overview of the technical specifications for both sizes of WTGs to be used (2MW and 9.5MW).

Table 5-3 WTG Technical Specifications

	2MW	9.5MW
Hub Height	66m above LAT	104m above LAT
Interface Height	12 m	13 m
Tower Length	52 m	91.9
Maximum Tip Height	106m	191m
Nacelle Dimensions	5.4 m	8m
Rotor Diameter	80m	164m
Blade Length	40m	82m
Blade Width	3.5m	5.4m
Cut-in Wind Speed	4m/s	4m/s
Cut-out Wind Speed	30m/s	25m/s
Operating Speed Range	Up to 17 revolutions per minute (rpm)	4.8 to 12.1rpm

WTG Spacing

The minimum spacing between the WTG centre points is 1,000m.

Emergency Communication

All work teams associated with construction will be equipped with a minimum of one handheld VHF / Ultra High Frequency (UHF) radio or Terrestrial Trunked Radio (TETRA). VHF is the primary means of emergency communication.

5.3. Lighting and Marking of the WTGs

The lighting and marking of the turbine and substructure is summarised below in Figure 5-3

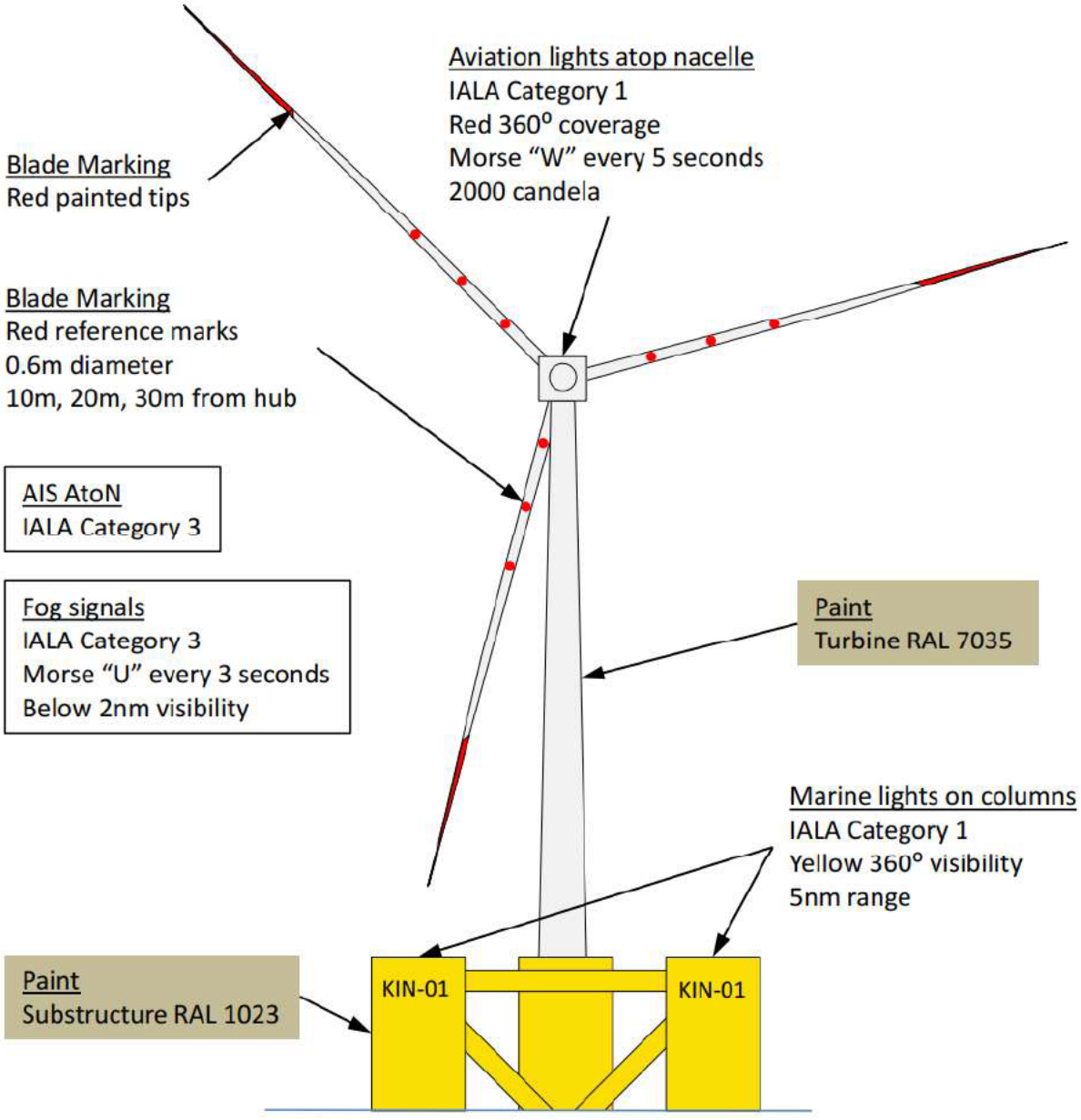


Figure 5-3 Lighting and Marking Summary

Navigational Lighting

The Northern Lighthouse Board (NLB) require that all turbines are fitted with a 5nm light with the capability of being dimmed to 25% output, which will allow full flexibility in the positioning of turbines within the potential locations. All turbines shall therefore be fitted as follows:

- Yellow light with special mark characteristic (flash once every five seconds);
- Light to have range of 5nm;
- 360° visibility[1];
- Classed as International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Category 1 (availability of at least 99.8%); and
- Mounted at least 6m above HAT and below the lowest point of the blade arc (and not more than 30m above HAT).

The 5nm lights will remain on full intensity unless designated as an Intermediate Peripheral Structure (IPS) by NLB. Those turbines designated as IPSs shall have their 5nm lights dimmed to 25% intensity following consultation with NLB.

Further detail regarding navigational lighting can be obtained in the Lighting and Marking Plan (LMP) (KOWL-PL-0004-001).

Navigational Marking

It has been agreed with the NLB that no buoyage will be required to mark construction activities, or to mark the turbines once operational. However, temporary buoyage may be required to mark any subsea infrastructure that poses a temporary hazard to passing traffic prior to turbine installation.

The WTG structure (columns) will be painted yellow (RAL 1023) from the water line (float line) to a minimum of 9.5m up to the hand rails on the turbine structure. Sections of structure that will remain below LAT at all times are not required to be painted. The remainder of the structure above the yellow paint will be painted light grey (RAL 7035).

As previously, further detail regarding navigational marking can be obtained in the LMP (KOWL-PL-0004-001).

Aviation Lighting

Each turbine shall be fitted with a medium intensity 2000 candela (cd) red light visible from 360°, and mounted as close as is reasonably practicable to the top of the nacelle. The red aviation hazard lights shall flash Morse 'W' with a five second sequence. All red aviation lighting shall be synchronised across the turbines. Where visibility is adjudged to be at least 5km in all directions the red aviation lights may be dimmed to no less than 10% of the original intensity.

Identification Marking

Each turbine shall be assigned a unique ID which will be displayed on the turbines, with the alphanumeric characters visible from 150m away at a 3m eye line.

[1] NLB indicated one light would be required on each column of the steel submersible sub-structures

Blade Marking

For the purposes of SAR operations, the trailing edge of each blade shall have three red marks at points 10, 20, and 30m from the hub end. These marks shall have a minimum diameter of 600 millimetres (mm). In addition, the tip of each blade shall be painted red, up to a distance of approximately 2% of the total blade length. An indicative blade marking plan is presented in Figure 5-4.

Details of the final blade design will be provided to the MCA SAR branch.

Figure 5-4 Indicative Blade Marking

5.4. Export and Inter Array Cables

Two 33 Kilovolt (kV) export cables shall be installed within the offshore cable corridor presented in **Error! Reference source not found.**. The export cables shall be protected via burial, or by other external means if this depth cannot be reached.

There will be 5 inter-array cables (33kV) connecting the WTGs. These shall be installed within the Development Area.

5.5. Construction Safety Zones and Guard Vessels

A 500m rolling safety zone will be applied around any WTG location where installation is underway (as denoted by the presence of the installation vessels on site at the WTG) during the construction phase. Additionally, a 500m safety zone will be applied around any WTG undergoing major maintenance (defined as any work requiring the use of a large vessel) during the operational phase.

Whenever an active safety zone is in place, an on-site vessel will be assigned guard duties (any vessel not restricted in its ability to manoeuvre or undertaking another safety role), including the responsibility to monitor the safety zones, as well as the surrounding area, via Radar, AIS, VHF communications and visual observations. It is assumed that other on-site vessels shall keep a watch as required under Rule 5 of the COLREGS (IMO, 1972); however, given the size of the Development Area one vessel with primary monitoring responsibilities is considered sufficient.

6. CONSTRUCTION ACTIVITIES

It should be noted that some of the information summarised in the following section is dynamic and shall be reported weekly to the CGOC by the Project's MCC.

6.1. Programme

The construction of the Project is anticipated to occur in two 'tranches' in line with the indicative Programme outlined in Table 6-1. A final construction programme for each tranche will be provided to

the Scottish Minister prior to commencement of construction as a requirement of the consent conditions, and will be added to this subsection.

Table 6-1 Anticipated Construction Programme

Tranche	Activities	Indicative Start Dates
Tranche 1	Onshore works and Horizontal Directional Drilling	March 2018
	Mooring installation WTG Location 1	May 2018
	Export cable 1 installation	June 2018
	Installation of 2MW WTG to Location 1	June 2018
Tranche 2	Export cable 2 installation	2020
	Mooring installation WTG Locations 4-6	2020
	Installation of inter-array cables Locations 4-6	2020
	Installation of WTGs to Locations 4-5	2020
	Mooring installation WTG Locations 1-3	2020
	Move 2MW to Location 6 (dependent on recertification and consultation as noted above)	2020
	Installation of WTGs to Locations 1-3	2020
	Installation of inter-array cables	2020

It is noted that the second export cable may be installed during Tranche 1 (rather than in Tranche 2 as indicated in Table 6-1), however this is not confirmed at the time of writing.

6.2. Day to Day Operations

The Project Manager shall prepare a Weekly Report where the daily and weekly operations shall be set out for the past week along with a look ahead for the following week. An updated copy of the Report shall be sent to the CGOC each week.

6.3. Diving Operations

It is not the intention to undertake diving operations in the Development Area. However, if diving operations are taking place during construction, survey or maintenance operations, the CGOC must be informed of the availability, location and status of recompression chambers available for use for

that diving operation. All diving operations must be undertaken by an appointed diving contractor, known to the UK Health and Safety Executive (HSE) and approved for the area and operation.

6.4. Work and Safety Boats

During the construction phase a number of vessels shall be employed to undertake a range of activities. The Project Manager holds copies of all vessel particulars, copies of certificates, etc. The updated list of the vessels involved in the construction works shall be issued to HM Coastguard, and will be available at the Marine Coordination office.

6.5. Guard Vessels

It is currently anticipated that a guard vessel will be on site during the installation of cables and mooring lines associated with each of the WTG tranches, which will occur approximately two months in advance of the installation of the corresponding WTGs. A guard vessel may also be utilised during the hook up of the mooring lines to the WTGs as per risk assessments.

It is noted that a guard vessel (or other designated on-site vessel) will be required to monitor active safety zones.

6.6. Radio Communications Aerials

Confirm Specifications for KOWL – this will be confirmed in the updated ERCOP prior to onsite works commencing.

- Locations of the installations fitted with radio aerials;
- Type of radio communications system(s) being used;
- Frequencies available to those systems;
- Contact number(s) for the control room / vessel using these systems; and
- Time period(s) when the system is monitored and / or staffed.

7. SAR FACILITIES OVERVIEW

7.1. Role and Responsibilities of the CGOC

As the UK maritime emergency service, HM Coastguard's CGOCs are responsible for the coordination of all civil maritime emergency response and SAR operations within the UK Search and Rescue Region (UKSRR). This includes the mobilisation and tasking of adequate resources to respond to persons at risk of death or injury at sea or on the cliffs or shoreline of the UK.

The CGOC is also the first point of contact for any reports of vessels in difficulty, e.g. engine failures, pollution or maritime security incidents / concerns.

7.2. Aberdeen CGOC Location

Figure 7-1 presents the location of the Aberdeen CGOC relative to the Project. The address of the Aberdeen CGOC is provided in Section 7.5.

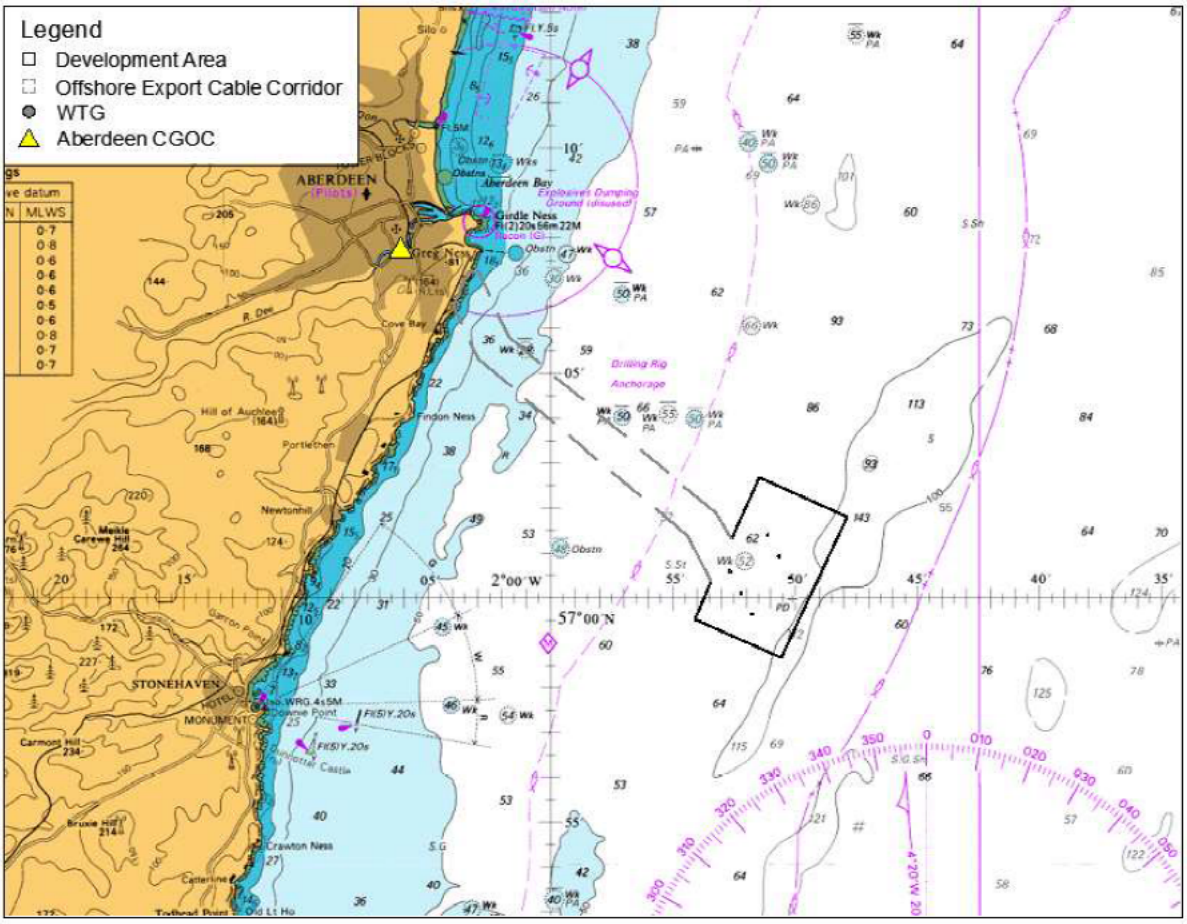


Figure 7-1 Aberdeen CGOC Location

7.3. Communicating with the CGOC

The CGOCs use a network of remote aerials to ensure VHF coverage from the coast is nominally up to 30nm. HM Coastguard maintains a 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.

7.4. Radio Communications

All CGOCs can operate on channels 6, 10, 16, 23, 67, 70 DSC, 23, 84, 86 and on two private SAR coordination channels, 0 and 99. Channels 23, 84 and 86 are duplex and are mainly used for medical link calls and Maritime Safety Information (MSI) broadcasts, but can also be used for SAR. HM Coastguard is not formally licensed to use other VHF Marine Band channels, but may use them in extremis.

MF frequencies used by HM Coastguard include 2187.5 Kilohertz (kHz) (DSC), 2182kHz (MF distress, urgency and safety working frequency) and 2596kHz (HM Coastguard's primary MF working frequency although a range of other frequencies are used by individual CGOCs for SAR and general communications). In the event that HM Coastguard requires any windfarm work or service craft to use MF radio (where that is required or fitted), the relevant frequency will be informed to the craft at the time.

7.5. CGOC Contact Information

The contact information in Table 7-1 is for the most appropriate CGOC for routine purposes. In an emergency, the CGOC responsible for the area containing the developments will respond and this may not be the nearest CGOC or the one detailed in Table 7-1.

Table 7-1 CGOC Contact Details

Location	Aberdeen CGOC
Address	4th Floor Marine House Blaikies Quay Aberdeen AB11 5PB
24 Hour Contact Telephone Number (CGOC can always be contacted on 999)	01224 592334
Email	aberdeen.coastguard@mcga.gov.uk
Fax	01224 212862

7.6. Reporting Incident Position and Location

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

8. SAR FACILITIES AND THEIR RESPONSE CAPABILITY

8.1. Availability of National SAR Resources

National SAR resources (lifeboats and rescue helicopters) are available if:

- The incident exceeds the capability of the operator resources; or
- 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 Offshore Renewable Energy Installation (OREI) or its operations. In this event, and where safe and feasible to do so, wind farm work and safety craft should respond and provide assistance in accordance with IMO SOLAS regulations, Chapter V (IMO, 1974).

8.2. KOWL Self-Help Facilities

Project Vessel Equipment

In order to strengthen safety and emergency preparedness, KOWL project vessels on-site at the Development Area shall carry the following additional equipment:

- Defibrillator in case of electrical accidents or cardiac arrest (on boat);
- Thermal Protective Aids (TPA) to case of hypothermia;
- Survival kits (on boat and asset); and
- Stretcher.

Equipment Onshore

A dedicated system will be installed as part of the KOWL onshore work base, where all pollution clean-up related equipment will be ready on the quay (presumably at Aberdeen) for loading on to a boat for fast pollution response.

Medical / First Aid

All offshore windfarm personnel must hold a valid medical certificate. The Office Manager holds a register of all personnel, including non-operational staff, and a record of all personnel entering the Construction Design and Management (CDM) area shall also be maintained and available 24 hours a day at the onshore MCC.

8.3. Royal National Lifeboat Institution Stations

The Royal National Lifeboat Institution (RNLI) 24 hour SAR service operates from 238 lifeboat stations around the UK and the Republic of Ireland. Figure 8-1 presents the RNLI stations in proximity to the Project.

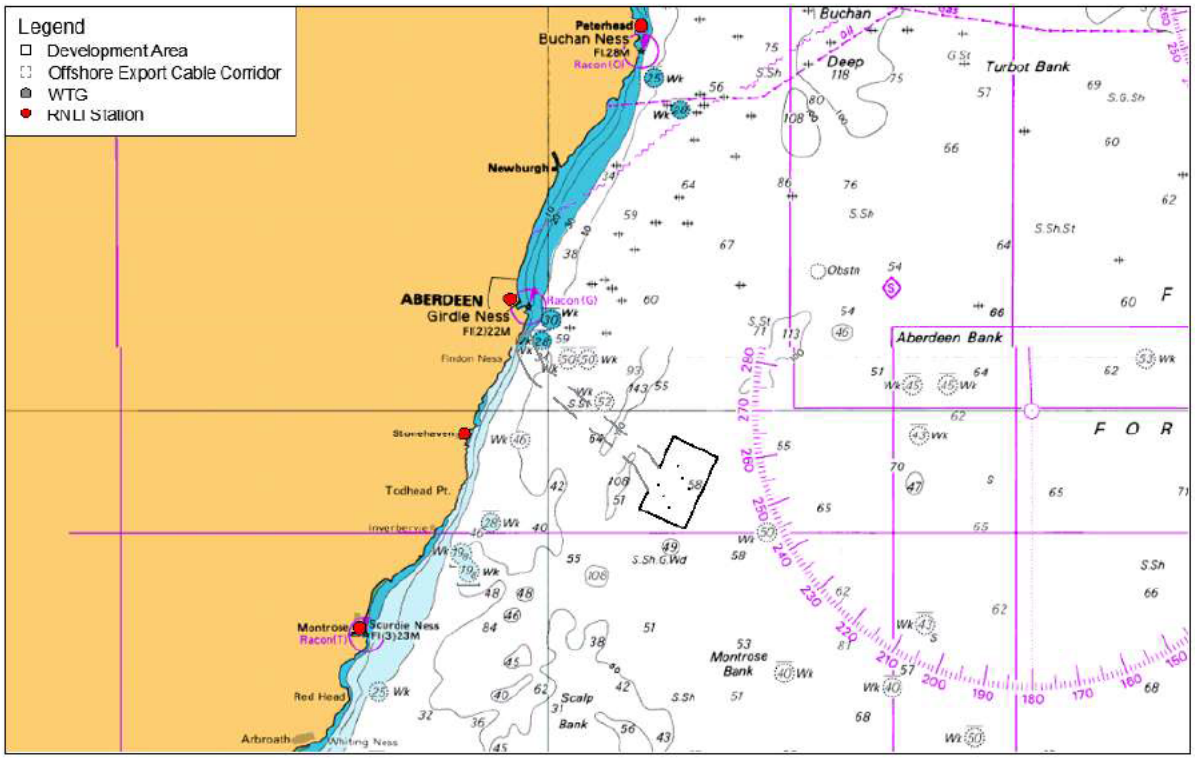


Figure 8-1 RNLI Station Locations

Given the distance offshore and available historical incident data, it is most likely that the All-Weather Lifeboat (ALB) from Aberdeen would respond to an incident in the vicinity of the Project.

It is noted that the RNLI and other volunteer lifeboat and rescue boat services provide craft to rescue persons in danger at sea. Their personnel are not trained to climb WTGs or enter an OREI and should not be requested to do so. Their role in the OREI context is limited to rescuing or assisting persons from the landing stages of decks of such installations.

Table 8-1 presents details of the SAR capability of the two RNLI lifeboat classes operated out of Aberdeen.

Table 8-1 Aberdeen RNLI Lifeboat Capability

		Lifeboat Class	
		Severn	**D Class**
Type		ALB	Inshore Lifeboat (ILB)
Date Introduced (Current Design)		1995	2003
Number of Crew		7	2–3
Length		17.3m	5.0m
Beam		5.9m	2.0m
Draught		1.78m	0.52m
Maximum Speed		25 knots	25 knots
Fuel Capability		5,600 litres	68 litres
Endurance		250nm	75nm
Survivor Capacity	**Self-Righting**	28	n/a
	Non-Self Righting	124	5
All-Weather Capability		✓	X
MF / MF DSC		✓	X
VHF / VHF DSC		✓	✓
Differential Global Positioning System (GPS)		✓	✓
Radar		✓	X
Life Raft		✓	X
Salvage Pump		✓	X
Secondary Daughter Craft		✓*	X
Comprehensive First Aid Equipment (Including Stretchers, Oxygen and Entonox)		✓	✓

(*) Y-boat

8.4. MCA Emergenct Towing Vessels

The MCA has one emergency towing vessel (ETV), the 70m *Ievoli Black*, which is stationed in the waters around Orkney. The MCA may task this vessel if the towing of large vessels is required or in response to a SAR / counter pollution incident.

8.5. SAR Helicopters

Provision of SAR helicopters is undertaken by Bristow Helicopters on behalf of HM Coastguard. There are ten SAR helicopter bases in the UK, of which those most relevant to the Project are Inverness and Prestwick. Figure 8-2 presents these SAR bases in relation to the Project.

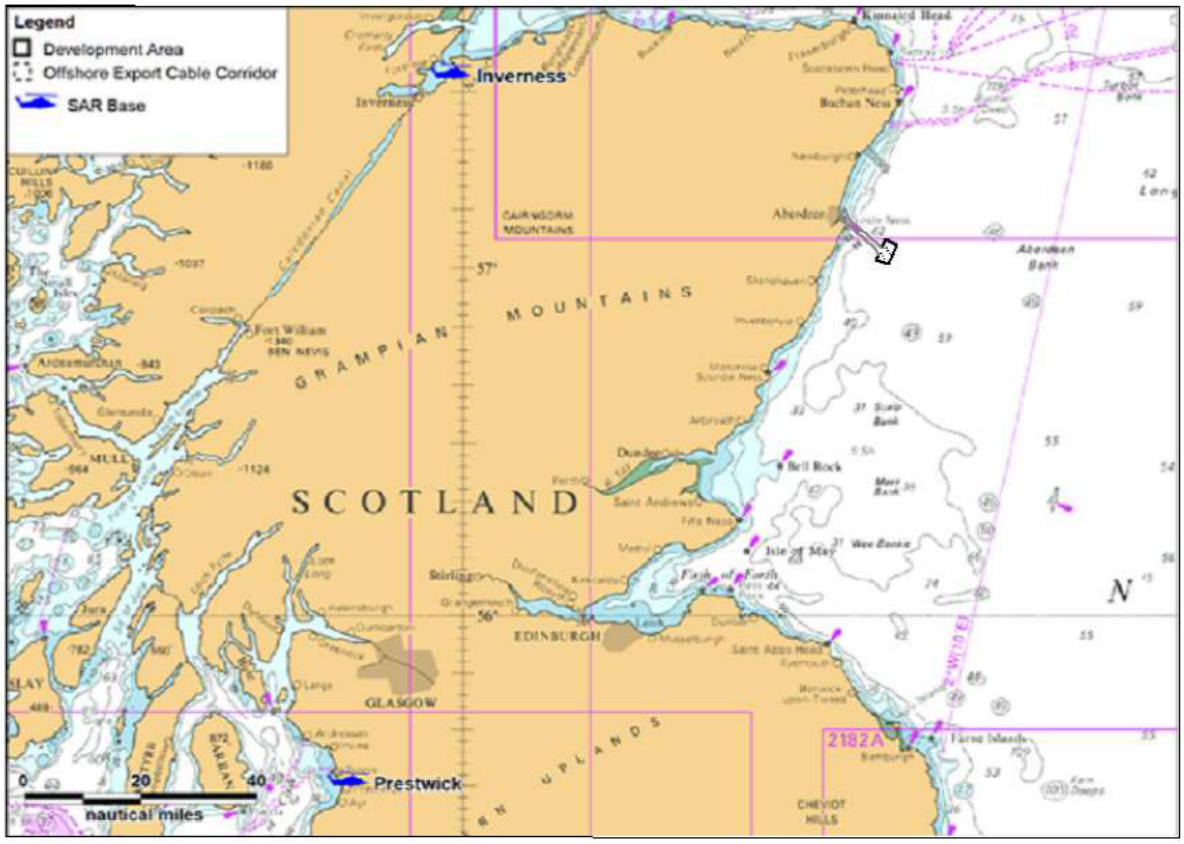


Figure 8-2 SAR Base Locations

These aircraft must not be factored into the operator's own provisions for emergency response and are to be considered as a resource of last resort.

Bristow Helicopters currently operate two models of SAR helicopter; the Sikorsky S-92 is operational at Inverness and the Augusta Westland AW189 is operational at Prestwick. It is noted that the Sikorsky S-92 at Inverness is anticipated to be replaced by an Augusta Westland AW189 in 2019.

Table 8-2 presents general specifications for each of the SAR helicopter models.

All SAR aeronautical resources are tasked by the Aeronautical Rescue Coordination Centre (ARCC) at the request of the CGOC. The ARCC is based in HM Coastguard's National Maritime Operations Centre (NMOC) in Fareham, Hampshire. Taskings are based on a number of factors including greatest

need, weather, availability, etc. Therefore, one of the nearest aircraft bases as detailed above may not be the base mobilised during an emergency.

Table 8-2 SAR Helicopter General Specifications

	Sikorsky S-92	Augusta Westland AW189
		
Air Speed	165 knots	169 knots
Operational Range	In excess of 250nm	In excess of 200nm
Normal Flight Crew	4	4
Capacity	21 persons (3 stretchers, 10 seated persons, additional standing persons)	16 persons (2 stretchers, 6 seated persons, additional standing room)
Endurance	Over 4 hours	Over 4 hours
Facilities	Twin hoist, comprehensive medical suite, icing protection	Twin hoist, comprehensive medical suite, icing protection

8.6. Cospas-Sarsat

The Cospas-Sarsat system detects and locates distress beacons operating between 406.0 and 406.1 Megahertz (MHz). Those relevant to the Project are:

- Emergency Position-Indicating Radio Beacons (EPIRB) which signal maritime distress; and
- Personal Locator Beacons (PLB) are for personal use and are intended to indicate a person in distress who is away from normal emergency services. These will be fitted into the lifejacket of all personnel entering and transferring within the Project's CDM area. These may be 406MHz with GPS or Automatic Identification System (AIS).

Cospas-Sarsat maritime distress alerts are forwarded to HM Coastguard by the Cospas-Sarsat mission control centre at the NMOC.

8.7. Communication Plan

The aim of a SAR communication plan is to avoid overuse or misuse of the facilities available. R/T frequencies in use will usually be the most suitable distress frequency plus internationally accepted on-scene working frequencies. Additional means of communication (satellite, fax, etc.) may be used to pass on detailed information such as search plans.

If incidents involve many units and / or the need to pass much detailed information, the communication plan would be as follows:

a) The main coordination frequency (usually IMM VHF channel 16 or MF 2182kHz), used by the casualty vessel, the CGOC and the On-Scene Coordinator (OSC) and an Aircraft Coordinator (ACO) if appointed. Other units should monitor this frequency for broadcasts etc.
b) An on-scene surface unit working frequency (usually IMM VHF channel 6) used by the OSC and surface SAR units.
c) An on-scene air unit working frequency (usually VHF (AM) 123.1MHz) used by the ACO and air SAR units.
d) Land unit coordination and working frequencies as applicable.
e) One or more frequencies not already in use, used by individual SAR units with the permission of the OSC / ACO in order to work directly with each other as required (e.g. during the transfer of survivors).

9. CUMULATIVE SAR CAPABILITY

As the Project is located a relatively short distance from the UK coast, no cumulative SAR capability has been considered at a transboundary level.

10. MEDICAL ADVICE / ASSISTANCE

Medical advice by radio to telephone link is available via the CGOC. If the operator has its own medical advice capability, then this shall be used in the first instance unless the situation is considered urgent. Evacuation of injured or ill persons can be arranged with the CGOC if the operators' own resources (work and / or safety boats) are considered inappropriate or speed is paramount. In in doubt, the CGOC should be contacted.

11. FIREFIGHTING, CHEMICAL HAZARDS, TRAPPED PERSONS, ETC.

The WTGs will be equipped with smoke and heat sensors in different locations near machinery and technical equipment. In case of smoke or heat being detected, the system shall automatically shut down the WTG, and the events will be registered in the control room (construction site office).

11.1. Procedure

In the event of a fire on a WTG, any personnel on board at the time shall immediately assemble at the structure's landing stage and be taken off by the work boat, which shall have been alerted at the outset of the alarm. No direct firefighting response is to be attempted by WTG personnel.

All construction vessels employed (including smaller vessels, e.g., survey vessels) shall have sufficient equipment in their respective inventory to cope with situations on board own vessels. In many cases the vessel will have a surplus of firefighting equipment and will therefore be able to assist in emergency situations, i.e. portable fire pumps.

12. SURVIVORS SHORE RECEPTION ARRANGEMENTS

In certain events, landing a person who may require post incident processing or medical or social support following an incident within or on an OREI may require delivery at a location other than the normal embarkation / disembarkation point depending on:

- Location of the OREI;
- Origin point of the rescue units;
- Weather and/or incident conditions and situations; and
- Scale of the incident and its consequences.

The landing place shall be decided by HM Coastguard, who will direct the ambulance to the landing location.

13. INFORMING NEXT OF KIN

Next of kin information is held at the MCC. Next of kin will be informed as per KOWL or the Contractor's company procedures, with these procedures known to the ERT. The Duty MC or the ERT will ensure that next of kin is informed via the official channels.

The CGOC shall not discuss names or persons involved in any emergencies and shall pass all such enquiries to KOWL.

14. SUSPENSION / TERMINATION OF SAR ACTION

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

- SAR resources;
- On-scene Coordinator;
- OREI operators, personnel or contractors;
- Third parties;
- Other emergency services; and
- Any other relevant party engaged in the incident.

Any decision to terminate search operations and / or rescue attempts for incidents will be taken only when there is no longer considered to be any probability of survival of missing persons, after consideration of all available information and in consultation with the other authorities listed above, where appropriate.

SAR action may also be temporarily suspended by the SMC after due consideration and consultation. For example, in darkness when no night detection aids are available, or in bad weather when to continue would place available SAR facilities at undue risk.

15. CRIMINAL ACTIONS AND ACCIDENTS TO PERSONS

Any party which receives reports or information that criminal action is or has taken place on or within the Project's CDM area should inform the CGOC (who will inform the police), and then other parties as required as soon as possible.

It is noted that the CGOC should always be informed of such activity (suspected or otherwise) and the police must always be informed of any deaths within the Project.

16. MEDIA RELATIONS

With the exception of the Project Director and the Project Manager, nobody is to comment or enter into discussions with the media. In the case that a journalist does get into contact with a person employed by the Project, the procedure shall be followed:

- Record the name and phone number of the journalist;
- Record the name of media he / she represents;
- Tell the journalist that he / she will be contacted by the Project Media Relations;
- Contact Media Relations on 0141 333 0557 and pass on the information accrued;
- Contact the Project Manager; and
- Contact the Project's Media Relations Representative (details provided in Table 16-1 below).

Table 16-1 Project Media Relations Representatives

Name	Redacted
Role	Redacted
Phone	Redacted
Email	Redacted

The Project's Media Relations representative should make immediate contact with the MCA duty media officer to discuss and coordinate press information. Contact details for the MCA duty media officer are provided in Table 16-2.

Table 16-2 MCA Duty Media Officer Contact Details

Address	MCA Public Relations Department
Phone	02389 329414 (office hours only – contact HM coastguard directly when outside of office hours)

17. EXERCISES

KOWL and their Contractors shall continuously strive to rehearse and improve the emergency procedures. Full advice on exercises can be found in *Integrated Offshore Emergency Response – Renewables (IOER-R)* (RenewableUK, 2016). All exercises should be planned in consultation with the MCA OELO.

17.1. Familiarisation

Prior to commencing work, all operatives, vessel crews, land personnel, Contractors, etc. must familiarise themselves with relevant procedures including the Emergency Response Plan.

17.2. Drills

At intervals, various drills shall be carried out. Drills must be undertaken by KOWL and their Contractors / vessels to comply with SOLAS regulations and company requirements, including:

- All vessels must perform an abandon ship drill, fire drill and man overboard drill on a monthly basis. The drills and findings must be entered into the ships' respective log books.
- Every third month an oil pollution prevention drill must be undertaken.
- Every third month a tower evacuation / stretcher accident drill must be undertaken.
- When appropriate other drills or scenarios will be undertaken, e.g. stranded by weather drill. In these drills, special attention must be drawn to communication and cooperation.

All drills and findings will be coordinated by the MCC and recorded by the KOWL Site HSE Manager.

17.3. Exercises

Exercises with participation of the Project and their Contractors, the CGOC and SAR units should be undertaken at least twice a year to test and practise the procedures. Table top exercises between the involved parties can also be conducted. These exercises should attempt to ensure a range of incident scenarios are tested, including:

- Rescuing persons in the water;
- Rescuing injured or ill persons from WTGs;
- Providing assistance to other vessels or persons in danger in or nearby the windfarm; and
- Searching for and locating persons in the water or life rafts / small vessels within the array.

Periodicity

Exercises should be held at least twice per year to test and practice procedures, processes and arrangements for responding to emergencies on or around the windfarm.

It is recognised as good practice for an initial table-top exercise (Rehearsal of Concept (ROC) drill) to be held shortly after commencement of operations. This serves as a 'get to know you' and educational process for all KOWL and Contractors staff and the emergency services who may be expected to respond to any emergency in or around the installation.

It is noted that all exercises should use 'dummies' or 'manikins' for situations where real people would be placed at risk, e.g. persons in the water, moving and handling and transferring stretcher cases, etc.

KOWL shall distribute this Emergency Response Cooperation Plan to the CGOC, SAR units in the area, authorities and other relevant parties. It shall be the responsibility of the KOWL site SHE Manager in cooperation with the OELO and other SAR units to plan and undertake the two annual exercises.

18. UNEXPLODED ORDNANCE AND WRECK MATERIALS

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. If this occurs the procedures outline in the following subsections should be followed.

18.1. Unexploded Ordnance (UXO)

The object should not be moved (or removed if is lodged in dredging buckets, pipes or conveyor systems, etc.) The situation should be immediately reported to HM Coastguard who shall alert the relevant military ordnance disposal organisation. All personnel should be evacuated as far as possible away from the UXO.

Further information and advice to mariners on the handling of UXO can be found in Marine Guidance Note (MGN) 323 (Merchant + Fishing (M+F)) (MCA, 2006).

A military Explosive Ordnance Disposal (EOD) team may be sent and shall take the lead in advising the Contractors on response to the UXO. If necessary, telephone advice can be given directly from the EOD team either via mobile phone or by radio to telephone link-call via the CGOC.

It should be noted that there is no guarantee that military EOD teams shall attend any ordnance incidents and so there may be a need to engage private ordnance disposal companies.

18.2. Wrecks 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. All such finds must be reported by law to the UK Receiver of Wreck. This should be done by telephoning the Receiver or Wreck as per the contact details in Table 18-1. Alternatively, the CGOC may be contacted who shall then inform the Receiver of Wreck officers.

Table 18-1 UK Receiver of Wreck Contact Details

Name	Redacted
Phone	Redacted
Email	Redacted

Information regarding the reporting of wreck or wreck materials can be found at https://www.gov.uk/government/groups/receiver-of-wreck.

19. COUNTER POLLUTION

Chapter 8 of the *Bonn Agreement Counter Pollution Manual* (Bonn Agreement, 2001) contains useful information on responding to pollution events in and around OREIs. Information can be found at www.bonnagreement.org/eng/html/counterpollution_manual/Chapter08_offshore%20windfarms.htm.

20. ADDITIONAL INFORMATION

The information contained in this section describes the duties and functions of various participants in SAR and explains any areas or information requirements of particular importance to SAR and the emergency response within the Project.

20.1. SAR Mission Coordination

Each SAR operation is undertaken under the direction of a SAR SMC at the CGOC. This function exists only for the duration of a specific SAR incident.

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

20.2. On-Scene Coordinator

The CGOC 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 IAMSAR[2], 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 vessels.
- The SMC (at the CGOC) designates the OSC, who may be in charge of a Search and Rescue Unit (SRU), 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 by the SMC when selecting the OSC:

- Amount of SAR training and experience the person may have had;
- Communication capabilities; and
- Length of time that the facility upon which the OSC is aboard can stay in the search area.

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

- Assume operational coordination of all SAR facilities;
- Receive and implement the search action plan from the SMC;
- Modify the search action plan based upon prevailing environmental conditions, SRUs / SAR facilities availability or capability, new target information and new developments on-scene;
- 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 communication with all SRUs using designated on-scene channels;
- Provide relevant information to the other SAR facilities;
- Monitor the performance of other units participating in the search and coordinate and divert surface units or helicopters to evaluate sightings;

[2] IAMSAR – International Aeronautical and Maritime Search and Rescue. The acronym given to the manual jointly produced by the IMO and International Civil Aviation Organization (ICAO). The IMO and ICAO are both specialised agencies of the United Nations (UN)

- Develop and implement the rescue plan (when necessary);
- Coordinate safety of flight issues for SAR a/c (where no Aircraft Coordinator 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;
- 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 fatality departs the scene.

21. 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 to 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 may act on the object drifting, e.g. life raft, lifeboat, drifting vessel, person in the water etc. Any information that the Project holds or records on tide and wind speed and direction may be helpful in the accurate calculation of seas. Such useful information could be:

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

22. LIAISON

It is recognised as good practice that OREI operators and the emergency services should conduct periodic visits to each other's operations rooms, control centres, etc. to maintain a close liaison and understanding between all parties.

23. REFERENCES

IMO (1972). *Convention on the International Regulations for Preventing of Collision at Sea*. IMO: London.

IMO (1974). *International Convention on the Safety of Life at Sea*. IMO: London.

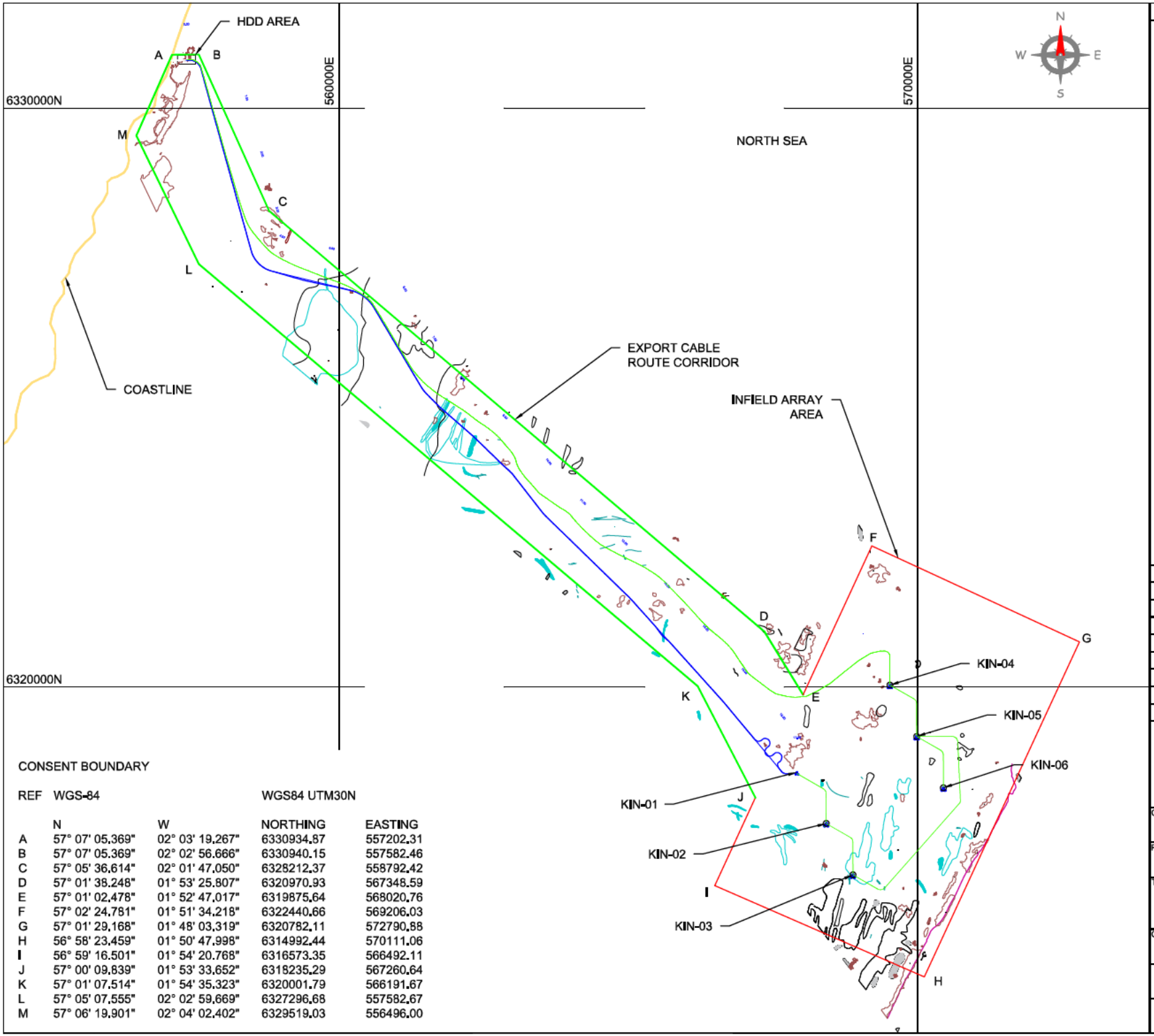
MCA (2006). *MGN 323 (M + F) Explosives picked up at Sea*. MCA: Southampton.

MCA (2016). *Offshore Renewable Energy Installations: Requirements, Guidance and Operational Considerations for Search and Rescue and Emergency Response*. MCA: Southampton.

RenewablesUK (2016). *Integrated Offshore Emergency Response – Renewables (IOER-R)*. RenewablesUK: London.

Appendix A

KOWL-DR-0001-015 - Field Layout Consent and WTG Position Check



LEGEND

PLANNED TURBINE LOCATIONS

REF	WGS-84	
	N	W
KIN-01*	57° 00' 19.095"	01° 52' 52.181"
KIN-02	56° 59' 50.109"	01° 52' 25.710"
KIN-03	56° 59' 21.214"	01° 51' 59.269"
KIN-04	57° 01' 06.828"	01° 51' 18.166"
KIN-05	57° 00' 37.897"	01° 50' 51.666"
KIN-06*	57° 00' 08.931"	01° 50' 25.179"

* CURRENT 2MW TURBINE AT KIN-01 LOCATION WILL BE REMOVED AND REDEPLOYED AT KIN-06 LOCATION

REF	WGS84 UTM30N	
	NORTHINGS	EASTINGS
KIN-01	6318532.87	567955.65
KIN-02	6317645.51	568416.70
KIN-03	6316758.16	568878.75
KIN-04	6320034.94	569517.86
KIN-05	6319147.58	569978.91
KIN-06	6318260.23	570440.96

EXISTING EXPORT CABLE ROUTE
PROPOSED 2ND EXPORT CABLE ROUTE

CONSENT BOUNDARY

REF	WGS-84		WGS84 UTM30N	
	N	W	NORTHING	EASTING
A	57° 07' 05.369"	02° 03' 19.267"	6330934.87	557202.31
B	57° 07' 05.369"	02° 02' 56.666"	6330940.15	557582.46
C	57° 05' 36.614"	02° 01' 47.050"	6328212.37	558792.42
D	57° 01' 38.248"	01° 53' 25.807"	6320970.93	567348.59
E	57° 01' 02.478"	01° 52' 47.017"	6319875.64	568020.76
F	57° 02' 24.781"	01° 51' 34.218"	6322440.66	569206.03
G	57° 01' 29.168"	01° 48' 03.319"	6320782.11	572790.88
H	56° 58' 23.459"	01° 50' 47.998"	6314992.44	570111.06
I	56° 59' 16.501"	01° 54' 20.768"	6316573.35	566492.11
J	57° 00' 09.839"	01° 53' 33.652"	6318235.29	567260.64
K	57° 01' 07.514"	01° 54' 35.323"	6320001.79	566191.67
L	57° 05' 07.555"	02° 02' 59.669"	6327296.68	557582.67
M	57° 06' 19.901"	02° 04' 02.402"	6329519.03	556496.00

REV	DESCRIPTION		DATE
A4	ISSUED FOR COMMENT	Redacted	03/04/2019
A3	ISSUED FOR COMMENT		01/04/2019
A2	ISSUED FOR COMMENT	Redacted	29/01/2019
A1	ISSUED FOR COMMENT		29/01/2019

KOWL

CLIENT
KINCARDINE OFFSHORE WINDFARM LIMITED

PROJECT
KINCARDINE OFFSHORE WINDFARM PROJECT

TITLE
FIELD LAYOUT CONSENT AND WTG POSITION CHECK

CLIENT DRAWING NUMBER	SHEET	SHEET SIZE
	1 OF 1	A3

SCALE U.N.O.	W3G DRAWING NUMBER	REV
1:60	KOWL-DR-0001-015	A4

Appendix B

KOWL-DR-0001-018 - SAR Access Lanes

KOWL

WTG

SAR LANE ACCESS POINTS

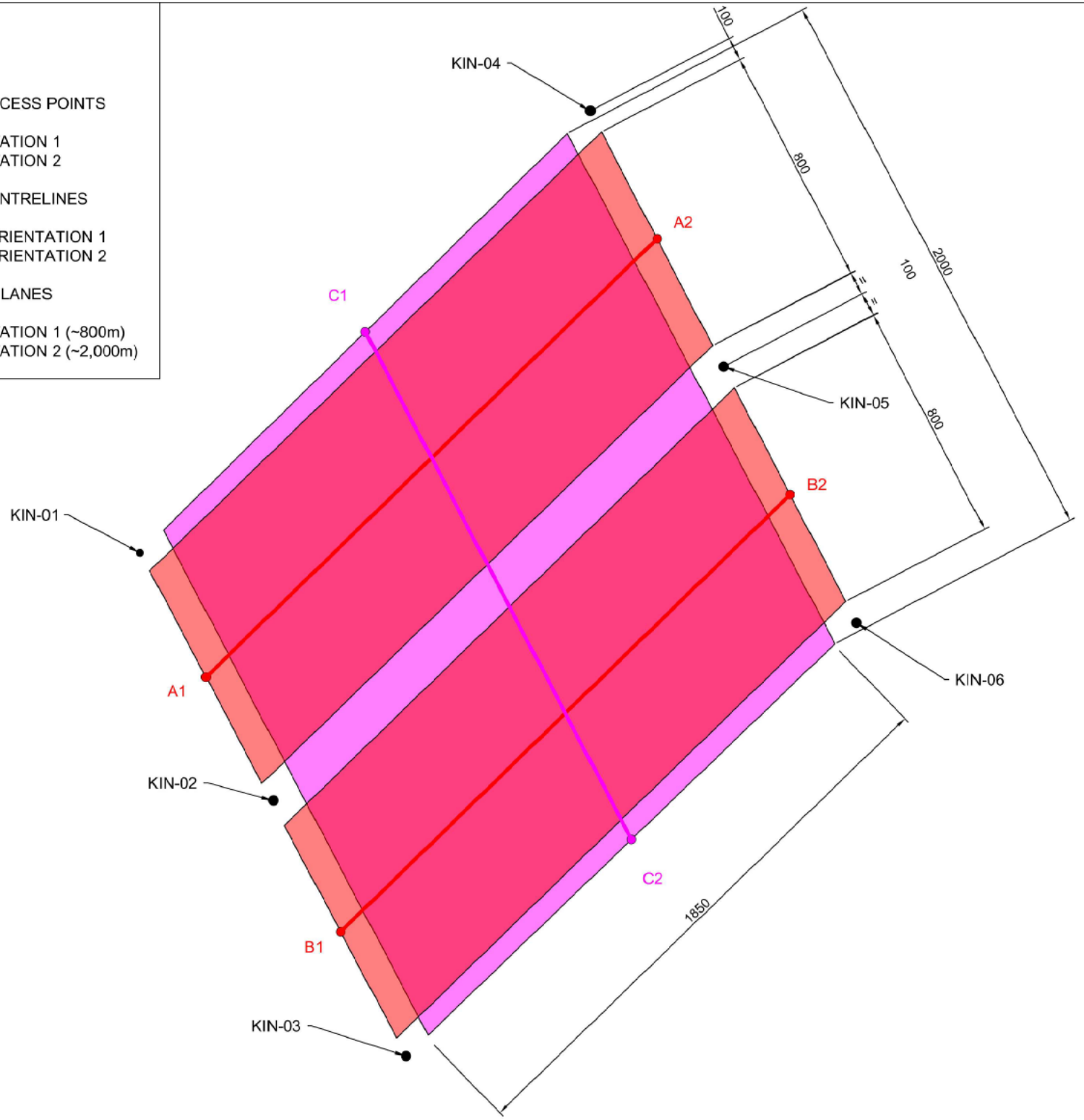
ORIENTATION 1
ORIENTATION 2

SAR LANE CENTRELINES

ORIENTATION 1
ORIENTATION 2

SAR ACCESS LANES

ORIENTATION 1 (~800m)
ORIENTATION 2 (~2,000m)



LEGEND

SAR ACCESS LANES

REF WGS84 UTM30N

	NORTHINGS	EASTINGS
A1	6318102.06	568183.45
A2	6319621.68	569748.00
B1	6317219.19	568650.29
B2	6318734.80	570209.68
C1	6319323.60	568723.47
C2	6317515.22	569672.26

REF WGS84

	LATITUDE	LONGITUDE
A1	57°00'05.04"	-1°52'39.10"
A2	57°00'53.34"	-1°51'04.89"
B1	56°59'36.25"	-1°52'12.31"
B2	57°00'24.41"	-1°50'38.41"
C1	57°00'44.25"	-1°52'05.91"
C2	56°59'45.27"	-1°51'11.47"

REV	DESCRIPTION		DATE
A1	ISSUED FOR USE	Redacted	17/04/2019

CLIENT: KINCARDINE OFFSHORE WINDFARM LTD

PROJECT: KINCARDINE OFFSHORE WINDFARM

TITLE: SAR ACCESS LANES

CLIENT DRAWING NUMBER	SHEET	SHEET SIZE
N/A	1 OF 1	A3
SCALE U.N.O.	KOWL DRAWING NUMBER	REV
NTS	KOWL-DR-0001-018	A1

KOWL-PL-0004-008 Emergency Response Cooperation Plan Rev C3

Final Audit Report 2019-04-19

Created:	2019-04-19
By:	Redacted
Status:	Signed
Transaction ID:	CBJCHBCAABAA4Ti6HKQBgOkyY4LJU99nDYde6aDda_Ca

"KOWL-PL-0004-008 Emergency Response Cooperation Plan Rev C3" History

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2019-04-19 - 11:38:20 AM GMT