

ACTEON DATA AND ROBOTICS	NTM Geophysical Survey	Document No.: 2023-OP-REP-0026
		Date: 30/May/2023
		Revision: 05



NOTICE TO MARINERS

Contractor:

UTEC NCS Survey Limited
 Acteon House
 Peregrine Road
 Westhill, Aberdeenshire
 AB32 6JL
 Scotland
 Phone: +44 (0)1224 545301
[UTEC - Acteon](#)


TerraSond Limited
 1805 Brittmoore Road
 Houston, TX 77043
 United States
 Phone: +1 (713) 690-4900
[TerraSond - Acteon](#)

Client:

Bellrock Offshore Wind Farm
 Limited (c/a BlueFloat Energy
 and Renantis Partnership)



Rev.	Modification Causes	Date
01	Issue	16/03/2023
02	Update of details; change of coordinates number format, Site logo added	28/03/2023
03	Updated survey dates, Bellrock E1 site chart	10/04/2023
04	Updated dates of survey and requested clearance.	22/05/2023
05	Updated activity dates	30/05/2023

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INTRODUCTION

TerraSond will conduct a geophysical survey offshore Scotland for the acquisition of seabed topography and subsea geology of the offshore wind farm area. MV Ocean Fortune will conduct the survey in the Northern North Sea in connection with the Bellrock Offshore Wind Farm area as shown in Figure 1 below. The proposed Bellrock site will accommodate a capacity of 1,200 MW. Due to extended mobilization and calibration works, the geophysical survey window has extended. Periodic equipment calibration works commenced from 19 April 2023 and the geophysical survey is expected to commence on 30 May 2023. The geophysical survey will be conducted from 30 May to 16 July 2023 (48 Days).

SCOPE OF WORK

The BlueFloat Energy and Renantis partnership contracted TerraSond to conduct geophysical and environmental surveys for the identification of appropriate sites for Wind Turbine Generators (WTG), in the Bellrock area, offshore Scotland, central North Sea. Figure 1 below outlines the extent of the Bellrock offshore area (wind farm area shaded in white). The program for the Bellrock Offshore Wind Farm will be located offshore Eastern Scotland, UK. At Bellrock 3,609 km of planned geophysical line kilometers will be surveyed.

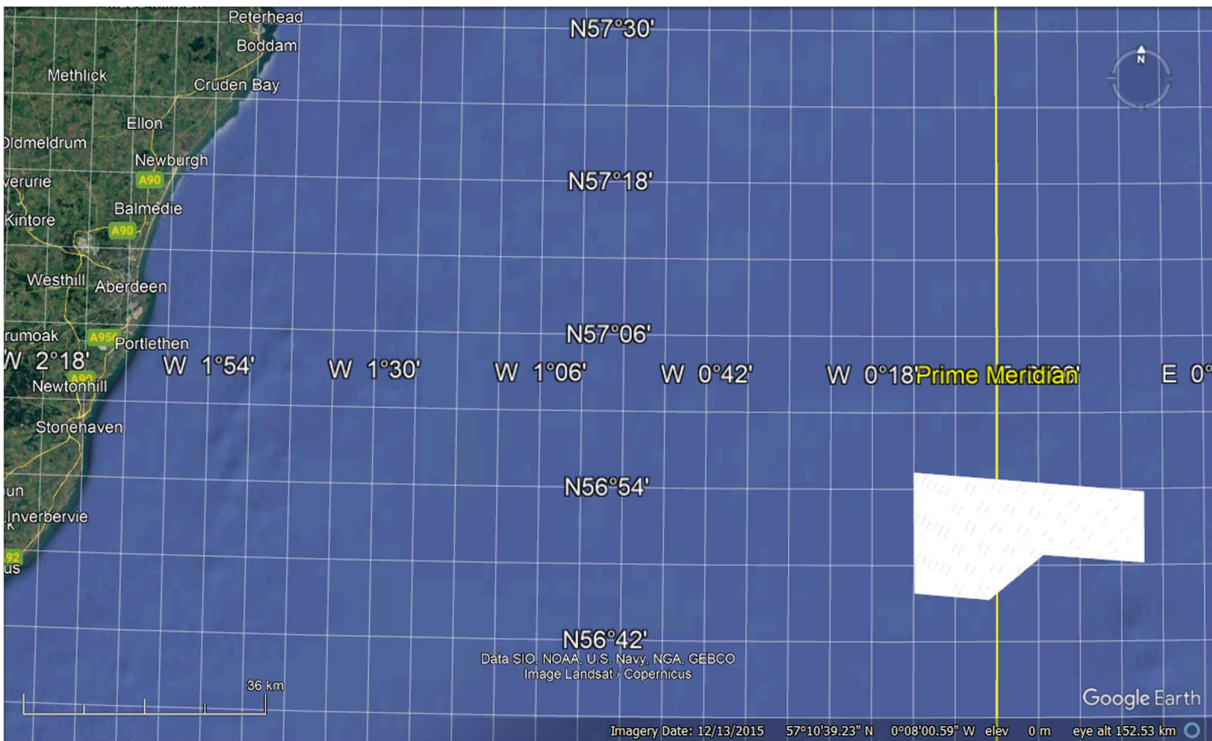



Figure 1. Bellrock OWF site E1

PURPOSE

Acquisition of site-specific geophysical and environmental data is required to support project development. The primary uses for the collected data will be to characterize the site for the purposes

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of an Environmental Impact Assessment (EIA) and to provide data to support the consenting application:

- (i) Map and identify the shallow geology, seabed features, local topography, and any relevant geohazards,
- (ii) Feed into a project ground model
- (iii) Refine the site boundary and preliminary WTG layout
- (iv) Inform foundation and mooring concept selection and design
- (v) Assist with planning of the reconnaissance geotechnical campaign,
- (vi) Advise on any future investigations, and
- (vii) De-risk the initial stages of the project.

EQUIPMENT

The following survey equipment will be utilized during the geophysical survey campaign:

Hull Mounted Sensors:

- Multibeam Echosounder (MBES)
- Sub-Bottom Profiler (SBP)
- Ultra Short Base Line (USBL)

Towed Sensors:

- Side Scan Sonar (SSS)
- Magnetometer (MAG)
- Low Frequency single-channel sparker (SCS)

AREA

The location where work will be performed is indicated on the site plan (Figure 1) above. Bellrock is 279 km² and is approximately 120 km east of Stonehaven.

The boundary coordinates for Bellrock Offshore Wind Farm are in WGS-1984, UTM Zone 30N, and are listed below:

Table 1. Geographical Survey Boundary Coordinates of Bellrock

Point	Easting / Northing in meter		Lat / Long [DDM]	
	X	Y	Latitude	Longitude
A	670490	6312106	56° 55.271' N	000° 11.936' W
B	704247	6310766	56° 53.732' N	000° 21.216' E
C	704759	6300468	56° 48.177' N	000° 21.223' E

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Point	Easting / Northing in meter		Lat / Long [DDM]	
	X	Y	Latitude	Longitude
D	689846	6300906	56° 48.792' N	000° 06.612' E
E	682151	6294075	56° 45.299' N	000° 01.232' W
F	671362	6294558	56° 45.805' N	000° 11.786' W

VESSEL

For much of the period of work, the M/V Ocean Fortune will have restricted manoeuvrability. The vessel will be towing equipment close to the seabed and on the surface. We request that all vessels within the vicinity of the M/V Ocean Fortune always remain at least 1,000m clear. If another vessel in the area is conducting any geophysical or geotechnical surveys, we request a 3000 m clearance to avoid acoustic interference. The vessel M/V Ocean Fortune has AIS installed. A specification sheet for the vessel is included below on page 5.

CONTACT DETAILS

The Fisheries Liaison Officer (FLO) and vessel contact details are tabulated in Table 2 below:


Table 2. M/V Ocean Fortune Contact

Vessel Name	Ocean Fortune	
Flag	Bahamas	
IMO No	9742431	
Call Sign	C6B19 (Charlie Six Bravo India Nine)	
Length	69.8 m	
Max Draught	4.5 m	
Operator	Vestland Management	
Port of Registry	Nassau	
Contact	External Watch VHF Channel 16	
Email	Bridge@ocean-fortune.osm.no	
Bridge Primary	+877 773152953	
Bridge Mobile	+47 901 753 96	
Alex Winrow–Griffin (FLO)	07760160039	Email: Alex@brownmay.com

For and on behalf of TerraSond Ltd.



James Hougham

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SHIP DESIGN: SALT – Project 035
SHIP NAME: Ocean Fortune
CLASSIFICATION: Bureau Veritas
BUILDER: Cemre Marien Endustri Anonim Sirketi
PORT OF REGISTRY: Nassau
FLAG: Bahamas
MMSI: 311 000 276
IMO NUMBER: 9742431
CALL SIGN: C6BI9 (Charlie Six Bravo India Nine)

OWNER: SUN ATLANTIC LTD **MANAGER:** VESTLAND MANAGEMENT AS
 N-5384 TORANGSVÅG

MAIN DIMENSIONS:

Length O.A 69,80 M
 Length P.P 61,50 M
 Breadth 17,00 M

CLASS NOTATIONS:

I*HULL*MACH, SDS, *AUT-UMS, *CLEANSHIP
 BWT, *AVM-DPS, *SYS-NEQ OSV
 COMF-NOISE 3/COMF-VIB 3,
 ICE CLASS 1B, Heavy Cargo 30,
 MON-SHAFT, SPS 60, SDS, GREEN PASSPORT,
 Unrestricted Navigation,
 Special Service/Seismic Support Vessel

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OUTLINE SPECIFICATION

MACHINERY AND PROPELLER PLANTS

Main Gen-sets:	4 x Yanmar 1000kw at 750 RPM
Emergency Generator:	1 x Scania 200 kW
Main Propulsion:	2 x Berg CPP in nozzles 2 x 1500 kW
FWD Azimuth Thruster:	1 x ZF 600 kW
Auxiliary boiler:	1 x Pyro 870 kW
Exhaust gas boiler:	2 x Pyro for Heat Recovery from Engines
Heat Recovery System	1 x Pyro Complete Arrangement

DECK AND TANK CAPACITIES

All figures are approx.

Deck load capacity:	1000 Tons VCG 1m above deck
Deck Area approx.:	500 m ²
Tank volume for MDO:	500 m ³
Tank volume for HFO:	2000 m ³
Heating capacity HFO:	60 OC
Freshwater:	157.9m ³
Slop:	25 m ³
Grey water:	42.2 m ³
Bilge water holding tank:	26 m ³
Bilge water settling tank:	16 m ³
Sludge:	12 m ³
Waste oil:	8 m ³
FO drain:	5 m ³

GARBAGE DISPOSAL PLANTS

1 x Teamtec Incinerator	189 200 kcal/h (220kw)
1 x Bramidan Compactor,	Marine B3 Denmark
1 x Food Waste Disposer	IMC - 523

NAVIGATION

1 x Bridge Watch
1 x Furuno DS-80 Doppler Speed log with interface to conning
1 x Nortek Acoustic Doppler Current Profiler
2 x Furuno GPA 150 Dual DGPS
1 x Furuno FE-700 Echo Sounder interfaced to DGPS and conning
1 x Ratheon Anschuts Nautopilot 5300 with off-course recorder & alarm
2 x Ratheon Anschuts STD 22 Gyro Compasses
1 x Magnetic Compass Cassens & Plath ,REFLECTA/1
2 x Ratheon Anschuts Gyro Repeaters, forward and aft consoles
1 x Ratheon Anschuts Gyro Repeater in steering gear room
1 x Ratheon Anschuts Gyro Repeater on chart table
1 x Furuno X-Band IMO Chart Radar FCR-2829
1 x Furuno S-Band IMO Radar FAR-2837 S
1 x Furuno Radar slave display
3 x TECDIS 2138-A Telko Dual ECDIS 1 x SSAS
1 x Furuno VR-3000 VDR
2 x Alphantron Anemometers and Wind Sensors
1 x Kongsberg C-Joy (+ 1 remote control for port and stbd wings)
1 x Fuel Consumption "Econometer"
1 x Closed Circuit TV system (CCTV)
3 x monitors 17"
1 x CCTV recorder
13 x fixed cameras

LIFE-SAVING EQUIPMENT

Ship Certificate:	60 persons
Life Rafts:	7 x 20 men RFD (3 on each side and one spare)
MOB:	1 x MARE SAFETY FRB 700 for max 15 pers
MOB Davit:	1 x Vestdavit PLH 4000 with shock absorber
Additionally Davit:	1 x Vestdavit PLR 12005 with shock absorber
Survival Suits:	Survival suits according to SOLAS for 60 persons
Rescue Frame:	Dacon net for picking up the person in the water

SPEED

Calm weather and sea conditions, draft 4,5 meters, auxiliary/hotel 200 KW
All figures shall be confirmed upon sea trial tests

Design theoretical speed:	13,4 knots
Bollard Pull (ex Azimuth):	51 tons
Fuel consumption 5 knots:	2,8 t/d
Fuel consumption 10 knots:	6,5 t/d
Fuel consumption 12 knots:	8,7 t/d
Fuel consumption 13 knots:	10,9 t/d

CARGO HANDLING EQUIPMENT

2 x Remote operated (deck and bridge) Bunkering Reels, NDM Norway
2 x 244m fuel hoses 5"dia with "TODO" connections and "Weak Link"
1 x Remote operated (deck and bridge) dual-drum Reel, NDM Norway
1 x Bunkering operation towing line 170 m
1 x Emergency operation towing line 250 m
2 x Certified Fuel Oil Cargo Flow-meter connected to AIS
1 x Remote operated (deck and bridge) Streamer Reel with Spooler
Capacity 8000 meters of 59 mm streamer, NDM Norway
1 x ABAS Offshore Crane 12 t @ 10 m outreach, 8 t @ 17 m outreach
2 x Rpm controlled HFO Cargo pumps with a capacity of 200m ³ / 45m
1 x Remote operated (deck and bridge) Towing hook. SWL 70 t with Tension and Monitoring Control on bridge
1 x Pomek Dip Winch model DW-500
Provision cargo rooms at 1st deck:
1 x Freezing room -22°C
1 x Refrigeration room for temperature + 4°C
1 x Dry provisions room +15°C

COMMUNICATION

1 x Furuno NX-700A Navtex
2 x Furuno TRON SART 20 Radar Transponder
1 x Furuno FA-150 AIS
1 x LRIT 2 x TRON 60S EPIRB manual
1 x Furuno RC-1800 T Radio Station, GMDSS A3
1 x Furuno FS-2575C MF/HF
2 x Furuno FM-8900S VHF on bridge
1 x Furuno FM-4721 VHF in ECR
3 x Jotron TRON TR-20 GMDSS VHF Portable
8 x Entel HT-833 UHF Portable with helmet equipment
2 x Entel HT-844 VHF Portable
4 x smoke diver helmet equipment
3 x Searchlights on top of wheelhouse

Intercom also covers cargo and deck areas

PA System

Satellite Communication: Sailor, Felcom-500

ACCOMMODATION

Outfitted for 60 persons in spacious and comfortable facilities

Client Cabins:	1 x two men
Crew Cabins:	8 x single and 2 x two men
Rest Cabins:	for 46 persons
Hospital:	1 x Highest offshore standard
Office:	1 x fully outfitted
TV Lounge:	1 x Comfortable outfitted for 12 persons
Mess Room:	1 x outfitted for 40 persons
Gymnasium:	1 x fully outfitted
Entertainment:	In Common Areas and all cabins on deck B
Antiroll Tank:	Yes, aft below bridge