

# Weekly Notice of Operations (WNoO)

## Beatrice Offshore Windfarm Limited

### Construction Operations



Issue Date: 29 October 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 77

#### Notice of Operations at Beatrice Offshore Wind Farm

#### Work Planned for the Period 28.10.2018 to 04.11.2018

Construction of the Beatrice Offshore Wind Farm commenced on the 1<sup>st</sup> of April 2017. This notice will be updated weekly giving information on the progress and resources involved in the offshore project. The intention is to give an overview of activities and vessels involved. Should anyone have questions regarding the operations, we kindly ask you to put them forward well in advance.

Beatrice Offshore Windfarm Limited (BOWL) is developing the Beatrice Offshore Wind Farm in the 'Outer' Moray Firth on the north-western point of the Smith Bank, approximately 7 nm off the Caithness coastline. The development site will cover an approximate area of up to 130km<sup>2</sup> and will consist of 84 7MW offshore wind turbines (with a total capacity of 588MW) and two HVAC Offshore Transformer Modules (OTM). Water depths in the area range from approximately 38m below LAT in the south of the field to 60m below LAT in the north. The generated power will be transmitted to the grid via two subsea export / transmission cables with a landfall near Portgordon to the south of the field and grid connection at Blackhillock. The transmission cables cover a route of approximately 38 nm from the wind farm boundary back to the landfall. The Beatrice Offshore Wind Farm development area is highlighted in red below, the OFTW cable corridor in black.

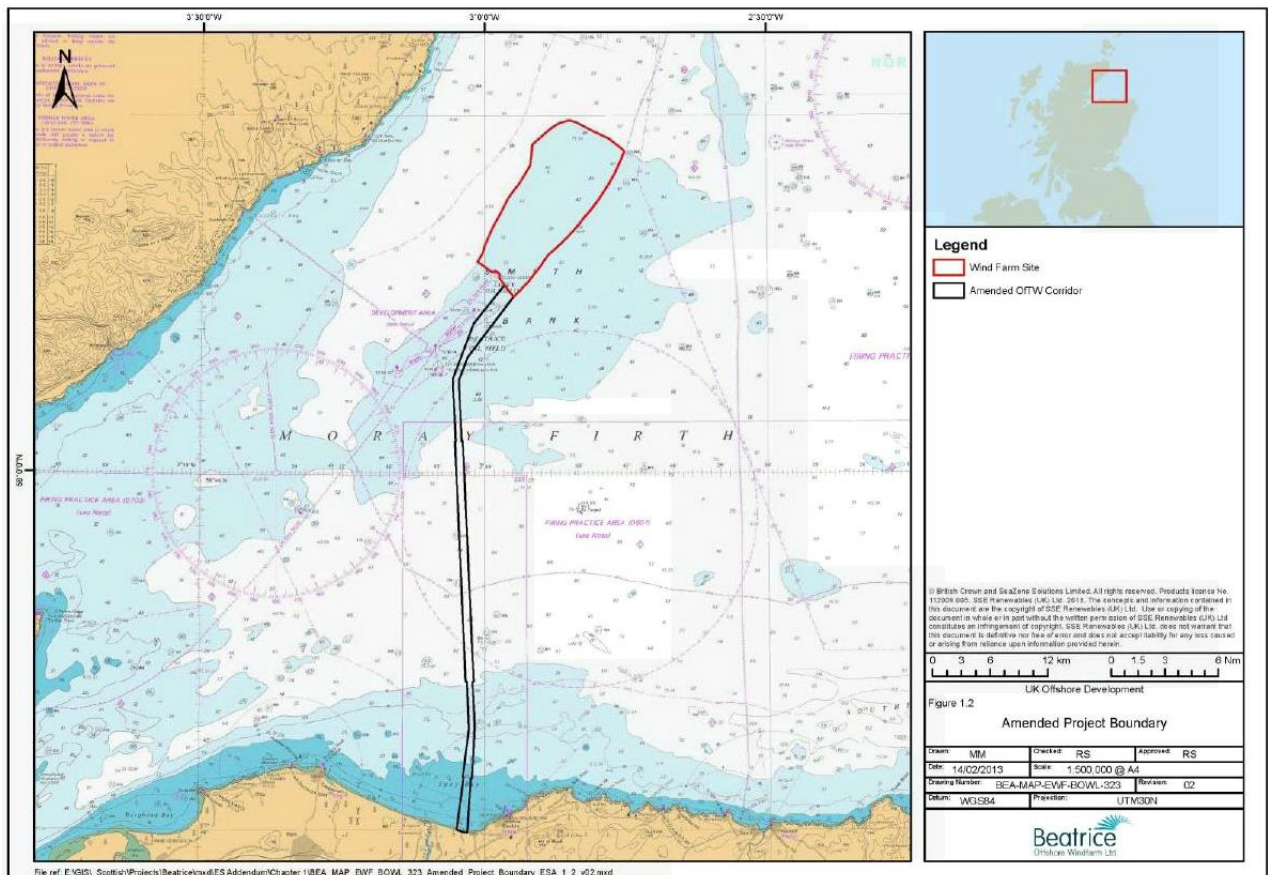


Fig. 1 Beatrice Offshore Wind Farm Location

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#### 1. Contact Details for Marine Coordination

The following contact can provide more information if required. Please note that specific queries can also be addressed to the relevant vessel or shore based representative.

Telephone Number	+44 (0) 3302 020329
Emergency Contact (24/7)	+44 (0) 7342 028207
Email for Marine Coordinator	<a href="mailto:mc.bowl@sse.com">mc.bowl@sse.com</a>
Address	Unit 1 Harbour Office Wick Caithness KW1 5HA

#### 2. Ongoing Operations

##### 2.1 Offshore Transmission Modules (OTMs) Commissioning Works

Siemens Transmission and Distribution Ltd (STDL) are carrying out limited commissioning works on OTM1 and OTM2 throughout the winter 2018/19. BOWL electrical commission teams are continuing energisation and switching operations on both OTMs.

The following assets are now under the control of the SSE operational safety rules: EC1, EC2 & EC3. OTM1 & OTM2 and all fourteen Strings on site.

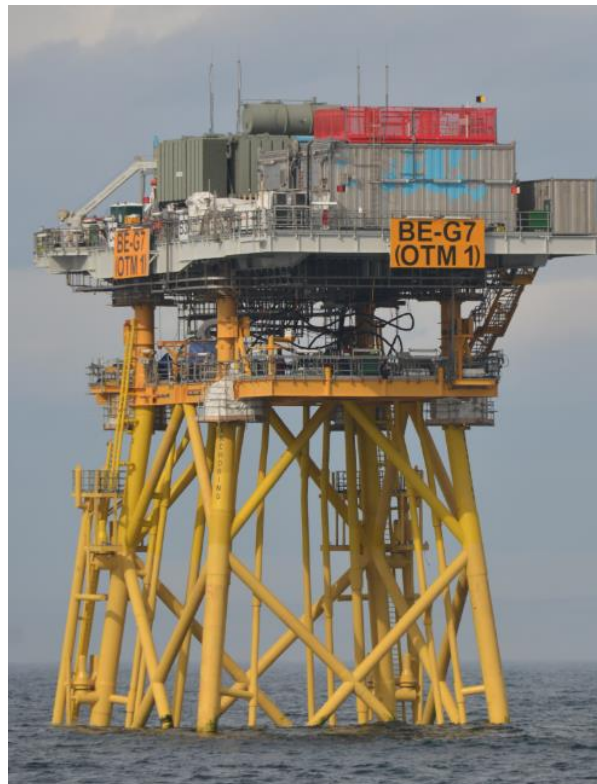


Fig. 2 OTM 1

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**Fig. 3** OTM 2



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### 2.2 Offshore Installation of Wind Turbines

Siemens Gamesa Renewable Energy (SGRE) will supply and install 84 x 7.0 MW wind turbines in the Beatrice Offshore Windfarm (BOWL). Wind turbine installation and commissioning works commenced offshore during July 2018, with completion of the installation expected in the Spring of 2019.

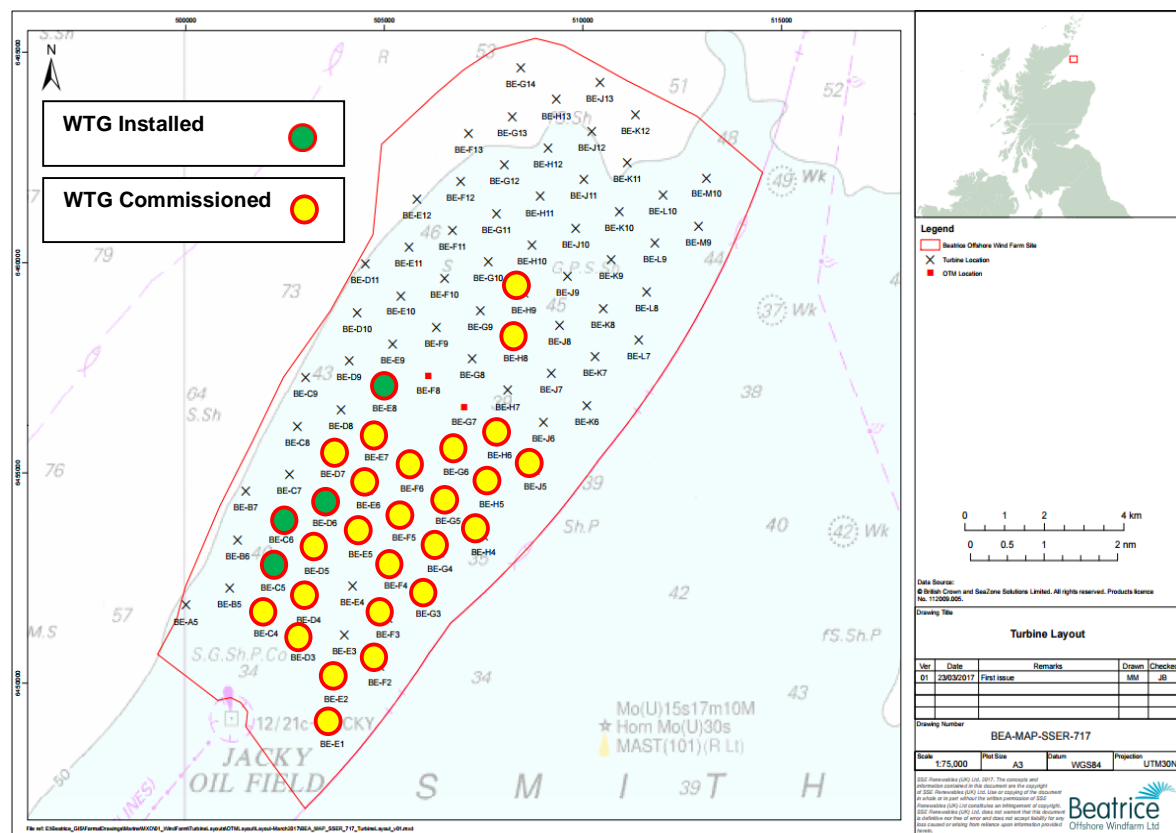


Fig. 5 Locations of WTG in the BOWL Construction Site

Table 1 WTG Installation and Commissioning Progress

Turbine installation completed at: 29 Locations

Turbine commissioning complete at: 25 Locations

Location ID	Latitude WGS84	Longitude WGS84	WTG Installed	WTG Commissioned
BE-A5	58° 12.471' N	002° 59.996' W		
BE-B5	58° 12.687' N	002° 58.873' W		
BE-B6	58° 13.308' N	002° 58.664' W		
BE-B7	58° 13.929' N	002° 58.456' W		
BE-C4	58° 12.307' N	002° 57.948' W	26.09.2018	09.10.2018

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Location ID	Latitude WGS84	Longitude WGS84	WTG Installed	WTG Commissioned
BE-C5	58° 12.902' N	002° 57.749' W	03.10.2018	
BE-C6	58° 13.524' N	002° 57.541' W	19.10.2018	
BE-C7	58° 14.144' N	002° 57.332' W		
BE-C8	58° 14.766' N	002° 57.124' W		
BE-C9	58° 15.386' N	002° 56.915' W		
BE-D3	58° 11.995' N	002° 57.002' W	20.08.2018	03.09.2018
BE-D4	58° 12.497' N	002° 56.834' W	28.09.2018	
BE-D5	58° 13.117' N	002° 56.626' W	06.10.2018	22.10.2018
BE-D6	58° 13.739' N	002° 56.417' W	18.10.2018	
BE-D7	58° 14.359' N	002° 56.209' W	15.10.2018	28.10.2018
BE-D8	58° 14.981' N	002° 55.999' W		
BE-D9	58° 15.602' N	002° 55.790' W		
BE-D10	58° 16.223' N	002° 55.582' W		
BE-D11	58° 16.844' N	002° 55.373' W		
BE-E1	58° 10.900' N	002° 56.256' W	08.10.2018	22.10.2018
BE-E2	58° 11.470' N	002° 56.128' W	02.09.2018	15.09.2018
BE-E3	58° 12.090' N	002° 55.920' W		
BE-E4	58° 12.712' N	002° 55.710' W		
BE-E5	58° 13.333' N	002° 55.502' W	08.09.2018	19.09.2018
BE-E6	58° 13.954' N	002° 55.293' W	09.09.2018	06.10.2018
BE-E7	58° 14.575' N	002° 55.084' W	06.09.2018	17.09.2018
BE-E8	58° 15.196' N	002° 54.875' W	14.10.2018	
BE-E9	58° 15.817' N	002° 54.665' W		
BE-E10	58° 16.438' N	002° 54.456' W		
BE-E11	58° 17.059' N	002° 54.247' W		
BE-E12	58° 17.680' N	002° 54.037' W		
BE-F2	58° 11.685' N	002° 55.005' W	23.07.2018	06.08.2018
BE-F3	58° 12.306' N	002° 54.796' W	01.09.2018	12.09.2018
BE-F4	58° 12.927' N	002° 54.588' W	15.09.2018	28.09.2018
BE-F5	58° 13.548' N	002° 54.378' W	22.08.2018	13.09.2018
BE-F6	58° 14.168' N	002° 54.169' W	23.08.2018	09.08.2018
BE-F9	58° 16.031' N	002° 53.540' W		
BE-F10	58° 16.653' N	002° 53.330' W		
BE-F11	58° 17.274' N	002° 53.120' W		
BE-F12	58° 17.894' N	002° 52.911' W		
BE-F13	58° 18.516' N	002° 52.701' W		
BE-G3	58° 12.544' N	002° 53.726' W	14.08.2018	25.08.2018
BE-G4	58° 13.142' N	002° 53.464' W	12.08.2018	24.08.2018
BE-G5	58° 13.762' N	002° 53.254' W	02.08.2018	22.08.2018
BE-G6	58° 14.384' N	002° 53.044' W	24.07.2017	23.08.2018
BE-G8	58° 15.625' N	002° 52.625' W		
BE-G9	58° 16.247' N	002° 52.415' W		
BE-G10	58° 16.867' N	002° 52.204' W		
BE-G11	58° 17.488' N	002° 51.994' W		
BE-G12	58° 18.109' N	002° 51.784' W		
BE-G13	58° 18.730' N	002° 51.574' W		

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Location ID	Latitude WGS84	Longitude WGS84	WTG Installed	WTG Commissioned
BE-G14	58° 19.351' N	002° 51.362' W		
BE-H4	58° 13.356' N	002° 52.339' W	31.07.2018	20.08.2018
BE-H5	58° 13.977' N	002° 52.130' W	20.07.2018	03.08.2018
BE-H6	58° 14.598' N	002° 51.920' W	19.07.2018	01.08.2018
BE-H7	58° 15.219' N	002° 51.709' W		
BE-H8	58° 15.840' N	002° 51.499' W	16.08.2018	29.08.2018
BE-H9	58° 16.461' N	002° 51.289' W	17.09.2018	30.09.2018
BE-H10	58° 17.082' N	002° 51.079' W		
BE-H11	58° 17.703' N	002° 50.867' W		
BE-H12	58° 18.324' N	002° 50.657' W		
BE-H13	58° 18.944' N	002° 50.446' W		
BE-J5	58° 14.192' N	002° 51.005' W	14.07.2018	10.08.2018
BE-J6	58° 14.812' N	002° 50.795' W		
BE-J7	58° 15.433' N	002° 50.585' W		
BE-J8	58° 16.055' N	002° 50.373' W		
BE-J9	58° 16.675' N	002° 50.163' W		
BE-J10	58° 17.296' N	002° 49.952' W		
BE-J11	58° 17.917' N	002° 49.741' W		
BE-J12	58° 18.538' N	002° 49.530' W		
BE-J13	58° 19.159' N	002° 49.319' W		
BE-K6	58° 15.027' N	002° 49.669' W		
BE-K7	58° 15.648' N	002° 49.459' W		
BE-K8	58° 16.269' N	002° 49.247' W		
BE-K9	58° 16.890' N	002° 49.036' W		
BE-K10	58° 17.510' N	002° 48.825' W		
BE-K11	58° 18.131' N	002° 48.614' W		
BE-K12	58° 18.752' N	002° 48.403' W		
BE-L7	58° 15.862' N	002° 48.333' W		
BE-L8	58° 16.482' N	002° 48.122' W		
BE-L9	58° 17.104' N	002° 47.910' W		
BE-L10	58° 17.724' N	002° 47.698' W		
BE-M9	58° 17.317' N	002° 46.784' W		
BE-M10	58° 17.938' N	002° 46.571' W		

### 2.2.1 Activity Description

On behalf of BOWL, Siemens Gamesa Renewable Energy (SGRE) will supply 84 x SWT -7.0-154, 7MW Wind Turbine Generators to the laydown and assembly yard at Nigg Energy Park, in the Moray Firth.

Following pre-assembly, five sets of WTGs will be loaded onto the Offshore Installation / Jack up vessel Pacific Orca. The vessel will transport the WTGs to the BOWL construction site, installing each of the structures in a pre-programmed installation sequence.

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The commissioning works will be carried out using a combination of the Walk to Work (W2W) vessel Island Crown and crew transfer vessels (CTVs), Fob Swath 3 and Seacat Resolute.

SGRE will also install and commission the Supervisory Control and Data Acquisition (SCADA) system for the operation of the WTGs.



**Fig. 5 Siemens SWT-7.0-154 WTG installed at Beatrice OWF**

### **2.2.2 Vessels Involved in Activity**

The Offshore Supply Vessel / Jack-up Pacific Orca will carry out the installation of the 84 WTG. The commissioning works for the WTG will then be carried out using the W2W vessel Island Crown and CTVs Seacat Resolute and Fob Swath 3.



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Pacific Orca	
General Description and Dims	Offshore Installation / Jack up Vessel 161m x 49m
Call Sign:	5BRE3
MMSI:	210548000
Onshore Representative:	Gert Christensen, Marine Operation Manager Siemens Gamesa Renewable Energy A/S Fiskergade 1-9, 7100 Vejle, Denmark Mobile: +45 24295577 mailto:gert.christensen@siemensgamesa.com



Island Crown	
General Description and Dimensions:	Accommodation and 'Walk to Work' vessel L:96.8m / B:20m
Call Sign:	LACO8
MMSI:	257245000
Onshore Representative:	Gert Christensen, Marine Operation Manager Siemens Gamesa Renewable Energy A/S Fiskergade 1-9, 7100 Vejle, Denmark Mobile: +45 24295577 mailto:gert.christensen@siemensgamesa.com







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Fob Swath 3 / 5	
<b>General Description and Dimensions:</b>	Crew Transfer Vessel (CTV) L: 25m / B: 11m
<b>Call Sign:</b>	OUWY2 / OUXA2
<b>MMSI:</b>	219460000 / 219464000
<b>Onshore Representative:</b>	Gert Christensen, Marine Operation Manager Siemens Gamesa Renewable Energy A/S Fiskergade 1-9, 7100 Vejle, Denmark Mobile: +45 24295577 mailto:gert.christensen@siemensgamesa.com
	

Seacat Resolute	
<b>General Description and Dimensions:</b>	Crew Transfer Vessel (CTV) L: 25m / B: 11m
<b>Call Sign:</b>	2FWR9
<b>MMSI:</b>	235094873
<b>Onshore Representative:</b>	Gert Christensen, Marine Operation Manager Siemens Gamesa Renewable Energy A/S Fiskergade 1-9, 7100 Vejle, Denmark Mobile: +45 24295577 mailto:gert.christensen@siemensgamesa.com
	

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### 2.3 Inter Array Cable (IAC) Rock Placement Campaign

On behalf of BOWL, Jan De Nul will conduct the IAC rock placement campaign using the Simon Stevin. The campaign will consist of three consecutive 7 – 8 day trips laying a rock berm over a total of 17 km of IAC routes spread across the site (Amber, Blue, Cyan, Gold, Navy, Olive, Pink, Red, Silver, Teal, Violet & Yellow Strings) utilising 79,500 tons of 3” – 5” rock.

The vessel was on site from 30<sup>th</sup> September to 5<sup>th</sup> October and operations were conducted on the Amber, Blue, Cyan, Yellow & Silver Strings. Two further load-outs will follow later this month.

### 2.3.1 Area of Planned Activity

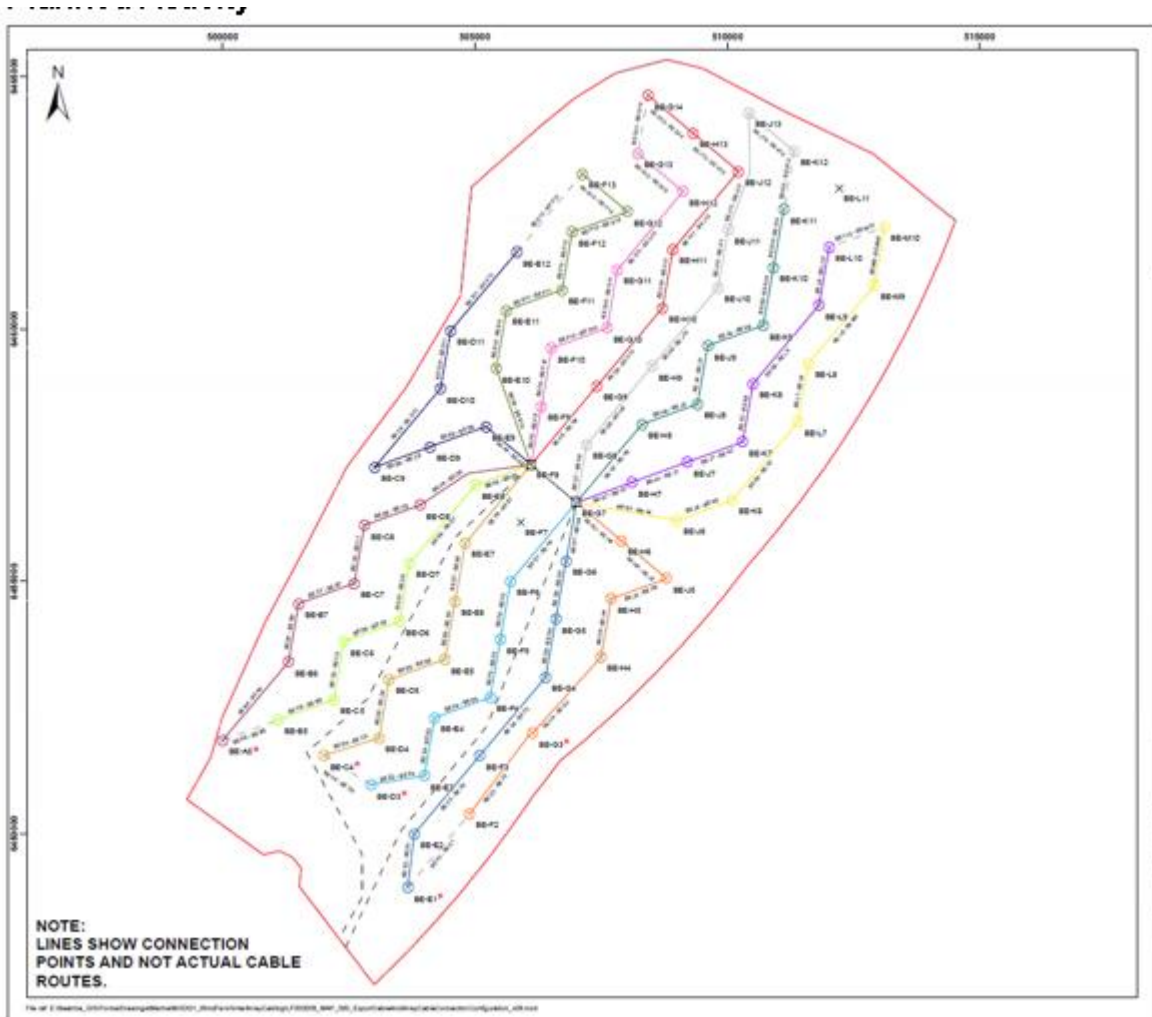


Fig 6. WTG strings by colour code

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**Table 2 Location of rock emplacement by String Colour**

● Denotes locations completed in Campaign1&2

Cable	String	Cable Length (m)	Latitude Start	Longitude Start	Latitude End	Longitude End
BE-H6-BE-J5	Amber	● 1,538	58;14.598 N	2;51.920 W	58;14.192 N	2;51.005 W
BE-J5-BE-H5	Amber	● 1,304	58;14.192 N	2;51.005 W	58;13.977 N	2;52.132 W
BE-H5-BE-H4	Amber	● 1,262	58;13.977 N	2;52.132 W	58;13.356 N	2;52.339 W
BE-H4-BE-G3	Amber	● 2,074	58;13.356 N	2;52.339 W	58;12.544 N	2;53.727 W
BE-G3-BE-F2	Amber	● 2,023	58;12.544 N	2;53.727 W	58;11.685 N	2;55.005 W
BE-F3-BE-E2	Blue	● 2,094	58;12.306 N	2;54.796 W	58;11.470 N	2;56.128 W
BE-G4-BE-F3	Blue	● 2,080	58;13.142 N	2;53.464 W	58;12.306 N	2;54.796 W
BE-G5-BE-G4	Blue	● 1,232	58;13.762 N	2;53.254 W	58;13.142 N	2;53.464 W
BE-G6-BE-G5	Blue	● 1,231	58;14.384 N	2;53.044 W	58;13.762 N	2;53.254 W
BE-G7-BE-G6	Blue	● 1261.5	58;14.995 N	2;52.841 W	58;14.389 N	2;53.033 W
BE-G7-BE-F6	Cyan	● 2052.5	58;15.004 N	2;52.849 W	58;14.175 N	2;54.158 W
BE-F6-BE-E5	Cyan	● 1,258	58;14.168 N	2;54.169 W	58;13.548 N	2;54.738 W
BE-F5-BE-F4	Cyan	● 1,262	58;13.548 N	2;54.738 W	58;12.927 N	2;54.588 W
BE-F4-BE-E4	Cyan	● 1,289	58;12.927 N	2;54.588 W	58;12.712 N	2;55.710 W
BE-E5-BE-D5	Gold	● 1,354	58;13.333 N	2;55.502 W	58;13.117 N	2;56.626 W
BE-E6-BE-E5	Gold	● 1,236	58;13.594 N	2;55.293 W	58;13.333 N	2;55.502 W
BE-D11-BE-E12	Navy	2104.2	58;16.851 N	2;55.362 W	58;17.673 N	2;54.024 W
BE-E11-BE-F11	Olive	1287.6	58;17.064 N	2;54.237 W	58;17.267 N	2;53.106 W
BE-F8-BE-F9	Pink	1321.3	58;15.407 N	2;53.733 W	58;16.025 N	2;53.526 W
BE-F9-BE-F10	Pink	1224.3	58;16.038 N	2;53.529 W	58;16.647 N	2;53.316 W
BE-F10-BE-G10	Pink	1351.2	58;16.659 N	2;53.320 W	58;16.861 N	2;52.190 W
BE-G11-BE-H12	Pink	2082.0	58;17.495 N	2;51.983 W	58;18.318 N	2;50.644 W
BE-J12-BE-H13	Red	1477.2	58;18.544 N	2;49.519 W	58;18.938 N	2;50.433 W
BE-H11-BE-J12	Red	2090.9	58;17.709 N	2;50.857 W	58;18.532 N	2;49.516 W
BE-G7-BE-G8	Silver	● 1218.5	58;15.010 N	2;52.823 W	58;15.619 N	2;52.611 W
BE-H9-BE-J10	Silver	2124.9	58;16.467 N	2;51.278 W	58;17.290 N	2;49.939 W
BE-J10-BE-J11	Silver	1234.8	58;17.303 N	2;49.941 W	58;17.911 N	2;49.728 W
BE-J11-BE-J13	Silver	2429.5	58;17.923 N	2;49.731 W	58;19.153 N	2;49.305 W
BE-J13-BE-K12	Silver	1533.6	58;19.165 N	2;49.308 W	58;18.758 N	2;48.393 W
BE-K11-BE-K12	Interlink	1225.1	58;18.746 N	2;48.389 W	58;18.138 N	2;48.604 W
BE-J9-BE-K9	Teal	1290.8	58;16.682 N	2;50.152 W	58;16.884 N	2;49.023 W
BE-J8-BE-J9	Teal	● 1250.5	58;16.061 N	2;50.362 W	58;16.669 N	2;50.149 W
BE-H8-BE-J8	Teal	● 1292.3	58;15.846 N	2;51.487 W	58;16.049 N	2;50.359 W
BE-H7-BE-J7	Violet	● 1289.3	58;15.224 N	2;51.698 W	58;15.428 N	2;50.572 W
BE-J7-BE-K7	Violet	● 1291.5	58;15.439 N	2;50.574 W	58;15.642 N	2;49.445 W
BE-K7-BE-K8	Violet	● 1233.3	58;15.654 N	2;49.448 W	58;16.263 N	2;49.233 W
BE-K8-BE-L9	Violet	● 2102.7	58;16.275 N	2;49.237 W	58;17.098 N	2;47.895 W
BE-L9-BE-L10	Violet	● 1240.2	58;17.110 N	2;47.898 W	58;17.718 N	2;47.685 W
BE-M10-BE-L10	Interlink	● 1329.8	58;17.731 N	2;47.687 W	58;17.932 N	2;46.558 W
BE-M9-BE-M10	Yellow	● 1453.0	58;17.324 N	2;46.773 W	58;17.945 N	2;46.561 W
BE-L8-BE-M9	Yellow	● 2092.9	58;16.489 N	2;48.111 W	58;17.312 N	2;46.770 W
BE-L7-BE-L8	Yellow	● 1249	58;15.868 N	2;48.322 W	58;16.477 N	2;48.108 W
BE-K6-BE-L7	Yellow	● 2087.5	58;15.033 N	2;49.659 W	58;15.856 N	2;48.319 W
BE-J6-BE-K6	Yellow	● 1301.9	58;14.819 N	2;50.784 W	58;15.021 N	2;49.656 W
BE-G7-BE-J6	Yellow	● 2320	58;14.997 N	2;52.820 W	58;14.806 N	2;50.781 W

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#### 2.3.2 Activity Description

Following the Inter Array Cables (IAC) Installation Campaigns 1 & 2, 50 cables have been installed by Siem Offshore Contractors (SOC). 27 cables have been buried at, or in excess of the minimum target burial depth specification of 0.6m. The remaining 23 cables have sections out-with specification, in depths of less than 0.6m. The expected lengths requiring protection by rock emplacement is made up of known and projected lengths, with an expectation of 17km in total over these 23 cables, and for a portion of the 41 cables installed in Campaign 3.

SOC, in collaboration with Subsea 7, have normalised the berm design to take account of the reported in-field threats to the cable, and to provide adequate protection against such. The table below details the requirements and the design basis for each aspect of the proposed berm. An optimised rock berm design for the requirement (fishing gear interaction, anchoring and over trawlability) would consist of the following details as per table 3.

**Table 3 Rock Berm Design**

Description	Requirement	Design
Rock Cover Height (cable on surface)	0.5m	Adequate impact energy absorption from trawl board - As per DNVGL-RP-F114
Rock Cover Height (cable at 0.50m DOL average when out of spec)	0.3m	Rock berm height reduced to a practical minimum of 0.3m height from MSBL. Also in line with minimum height stated by sub-contractor.
Crest Width	0.5m	In line with standard horizontal rockdumper's vertical tolerance of - 0.0m/+0.5m requirement.
Side Slope	1:3	Preferred slope stated by SFF (Scottish Fishing Federation) for trawl gear interaction.
Rock Grade	1-5"	Standard rock size. Depending on stability assessment performed by rock sub-contractor.
Rock Description	Un-weathered igneous rock, or similar, with no significant iron or deleterious content, non-corrosive, non-magnetic and free of cohesive material.	CIRIA C683 The Rock Manual
Submerged Unit Weight of Rock	9.5kN/m <sup>3</sup>	Industry Standard – Stability Purposes
Specific Density of Rock	2.65Te/m <sup>3</sup>	Industry Standard – Stability Purposes
Dry Bulk Density of Rock	1.50 – 1.60Te/m <sup>3</sup>	Industry Standard – Stability Purposes



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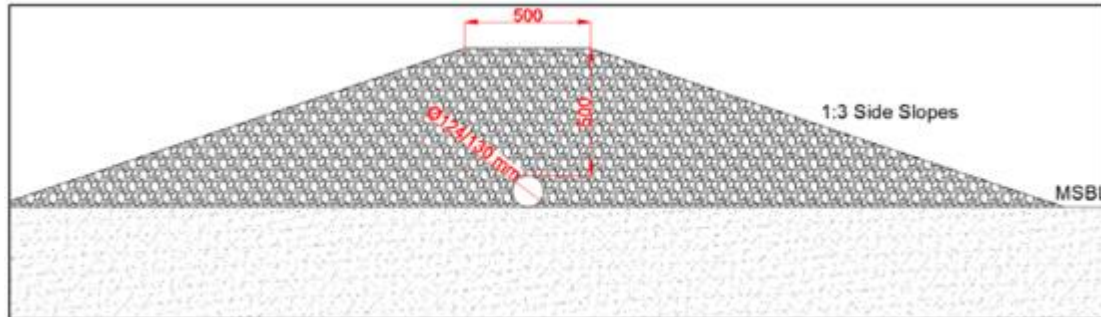


Fig. 7 Rock Berm Profile – Surface Laid Section (worse case)

### 2.3.3 Vessel Involved in Activity

The Simon Steven is equipped with a flexible fall pipe which is positioned by means of a remotely operated vehicle (ROV) at the outer edge of the pipe.

Two large hydraulic excavators are mounted in the middle of each bunker on board and during rock installation, these are used to feed the conveyor belt system to the fall pipe tower. The rock installation process is controlled by the fall pipe ROV. The amount of installed material can be adjusted by setting the feeder output and the vessel's tracking speed.

Simon Stevin	
<b>General Description and Dimensions:</b>	Offshore Construction – Fall Pipe Vessel 191.5 x 40 x 9.2 m
<b>Call Sign:</b>	LXUB
<b>MMSI:</b>	253309000
<b>Onshore Representative:</b>	Rene Alferink / Vincent van Velzen (SHL) Wick College Building 1st Floor 1 The Shore Wick Caithness Email. beatrice-mc@shl.nl



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#### 2.4 Operational & Maintenance (O & M)

The transfer of custody from project construction to Operations and Maintenance (O&M) of the first six WTG's on the Amber String took place at 1700hrs on 7<sup>th</sup> September 2018.

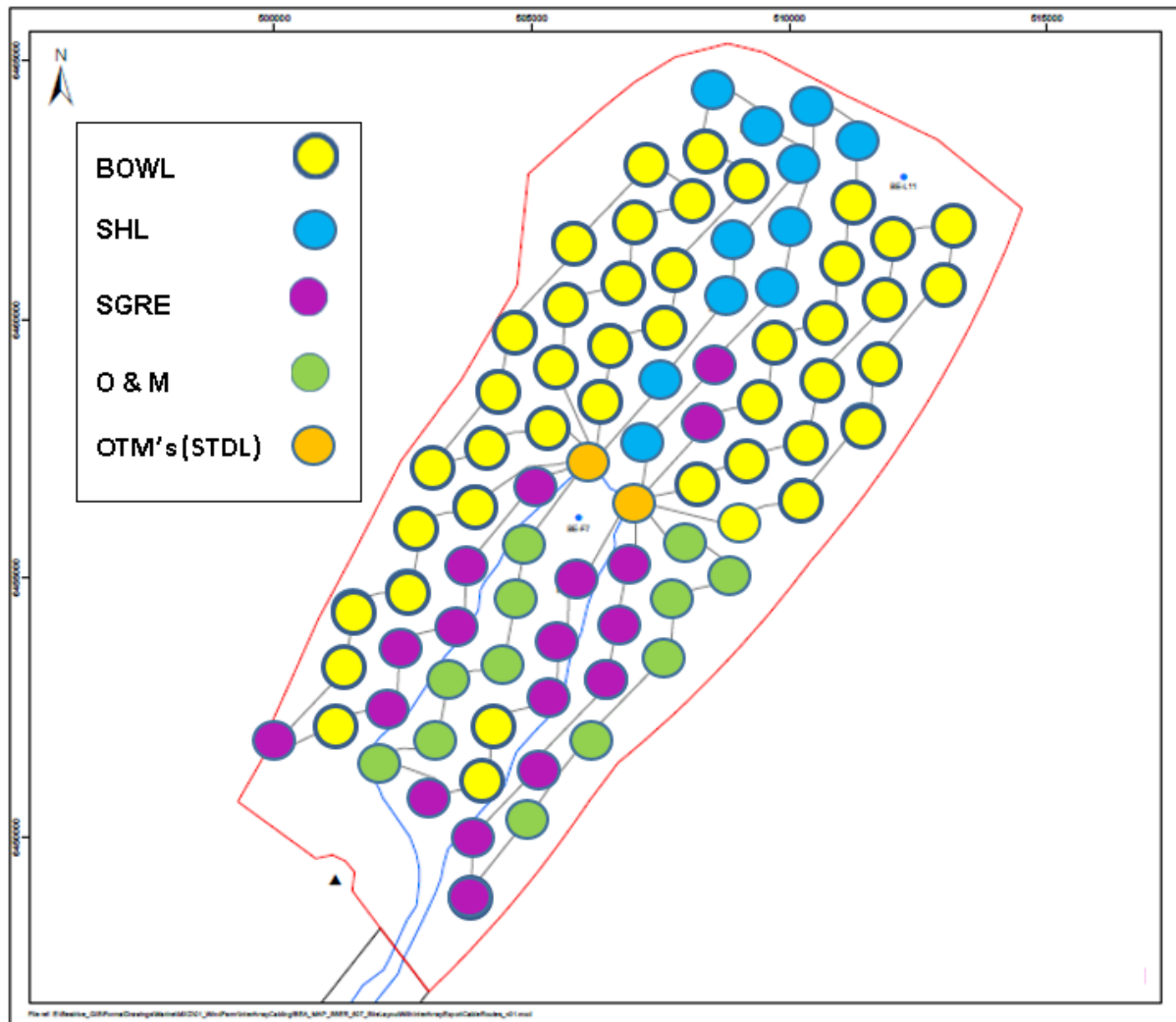


Fig. 8 Custody of Assets Chart

Siemens Gamesa Renewable Energy (SGRE) has taken over operational control of the scheduled maintenance and troubleshooting of the WTGs on the Amber String Assets and to assist them in this regard they have engaged the CTV Seacat Mischief and an Airbus Helicopter H145 aircraft operated by the German company WIKING Helikopter Service GmbH.

The helicopter is based in a temporary hanger at Wick airport and will be used to transport suitably qualified SGRE technicians to work on the turbines when conditions to transfer by

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CTV are exceeded, but flying conditions are within limits. The technicians will be transferred to and from the nacelle by heli-hoist.

### 2.4.1 Vessel & Aircraft Engaged in Activity

Seacat Mischief	
<b>General Description and Dimensions:</b>	Crew Transfer Vessel (CTV) L: 24m / B: 8m
<b>Call Sign:</b>	2IXU5
<b>MMSI:</b>	235113651
<b>Onshore Representative:</b>	Martin Baker Offshore Service Manager Beatrice Offshore Windfarm Ltd +44 7921 836268 Martin.baker@siemensgamesa.com
	
Wiking Helicopter H145	
<b>General Description and Dimensions:</b>	Airbus H145. Twin-engine, multi-purpose helicopter. LOA 13.63 x 3.29 x 4.00m Rotor diameter 11.0m
<b>Call Sign:</b>	WHS2AF "Wiking Alpha Foxtrot"
<b>Onshore Representative:</b>	Martin Baker Offshore Service Manager Beatrice Offshore Windfarm Ltd +44 7921 836268 Martin.baker@siemensgamesa.com
	

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## 2.5 Scientific Equipment Removal & Service and Re-installation

Currently the University of Aberdeen has only four sets of acoustic loggers located within the BOWL construction site.

Name	As laid coordinates (WGS84 datum)		Characteristics
160	58° 17.648' N	2° 49.931' W	Subsurface with transponder.
161	58° 12.933' N	2° 55.954' W	Subsurface with transponder.
162	58° 18.176' N	2° 54.124' W	Subsurface with transponder.
164	58° 12.830' N	2° 51.669' W	Subsurface with transponder

The moorings support sound recording equipment and acoustic loggers that record echolocation clicks of dolphins and porpoises (see images as the foot of this notice) Subsurface moorings fitted with acoustic releases extend no more than three metres vertically from the seabed. Subsurface moorings without acoustic releases extend no more than two metres vertically from the seabed.

A Notice to Mariners will be issued when the moorings are permanently discontinued.

For information and enquiries please contact:

Tim Candido- Barton,  
Lighthouse Field Station, University of Aberdeen,  
George Street, Cromarty,  
Ross-shire,  
IV11 8YL.  
Tel: +44 (0)1381 600548.  
[t.r.barton@abdn.ac.uk](mailto:t.r.barton@abdn.ac.uk)



Fig. 9 Examples of equipment which the above moorings support



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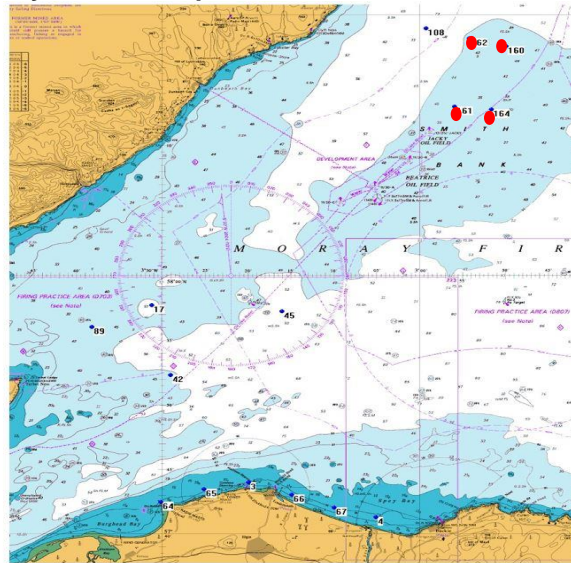


Fig. 10 Scientific equipment locations (remaining locations in red)

### 3. General Safety Advice

All vessels engaged in the activity will exhibit appropriate lights and shapes prescribed by the International Regulations for Preventing Collisions at Sea; relative to their operations. All vessels engaged in the activity will also transmit an Automatic Identification System (AIS) message.

The Secretary of State has authorised the use of the following safety zones as per Notice to Mariners LF000005-NTM-004.

1. 500 metres radius around each wind turbine, offshore transformer module and / or their substructures and foundations comprising the Beatrice Offshore Wind Farm whilst work is being performed as indicated by the presence of construction vessels.
2. 50 metres radius around each wind turbine, offshore transformer module and / or their substructure and foundations installed but waiting to be commissioned as part of the Beatrice Offshore Wind Farm.

ALL VESSELS ARE REQUESTED to give all construction and support vessels a wide berth.

MARINERS ARE REMINDED to navigate with caution and keep continued watch on VHF Ch. 70 / 16 when navigating the area.

The Chart shown on page 19 below, shows the indicative transit routes and site entry gates for vessels entering the construction site from either the port of Wick (North) and Cromarty/Nigg (south) to avoid the highest density areas of static fishing gear.

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#### 4. Guard Vessel Deployment

The guard vessel currently on site is Morning Dawn and she can be contacted on Ch. 16 VHF

<b>Project:</b>	Beatrice Offshore Windfarm Guard Vessel Deployment.
<b>Contractor:</b>	SHL
<b>Contract Purpose:</b>	Guard Vessel for the Windfarm site.
<b>Area:</b>	BOWL construction site: within the array cable routes and foundation locations. (See Fig 1 for details)
<b>Deployment Dates:</b>	1 <sup>st</sup> April 2017 – TBC.
<b>Deployment Vessel (s):</b>	Various on a continuous 21 day rotation.
<b>Equipment:</b>	N/A

On behalf of BOWL, Seaway Heavy Lifting has contracted the Scottish Fishermen's Federation (SFF) to provide guard vessels during the construction phase. The guard vessel's primary duty is security of the construction site by informing and warning non-construction vessels of the ongoing activities and associated Safety Zones.

#### 5. Fisheries Liaison

Fisheries liaison associated with the activity will be co-ordinated by Brown and May Marine. For any commercial fishery queries please contact:

Jen Miller Tel + 44 (0)1379 872144 Mobile +44 (0)7519 106002 [jen.miller@brownmay.com](mailto:jen.miller@brownmay.com)

All vessels are to be aware that there has been increased fishing activity close to the BOWL site and vessels may encounter static fishing gear whilst transiting to and from the site. Vessels sheltering to the South and West of the site should pay particular attention and keep a sharp lookout for such static fishing gear. Vessels are reminded that there are recommended transit routes to site, which should help avoid the areas of known fishing activity. (see chart on page 19 below).

#### 6. Distribution List

The distribution of this notice is as per email recipient's header. A central list of recipients is maintained by the Marine Coordinator. If you are not the appropriate recipient of these notices or do not wish to receive the notices in the future, please contact us at the address included in Section 1 of this notice.

#### 7. Website

The official website of Beatrice Offshore Windfarm Limited can be found at:

<https://www.beatricewind.com>

This contains all Notices to Mariners (NtM) published by BOWL and all Weekly Notices of Operations, together with a large amount of general information about the Project.

There is also a Twitter feed at <https://twitter.com/beatricewind>.

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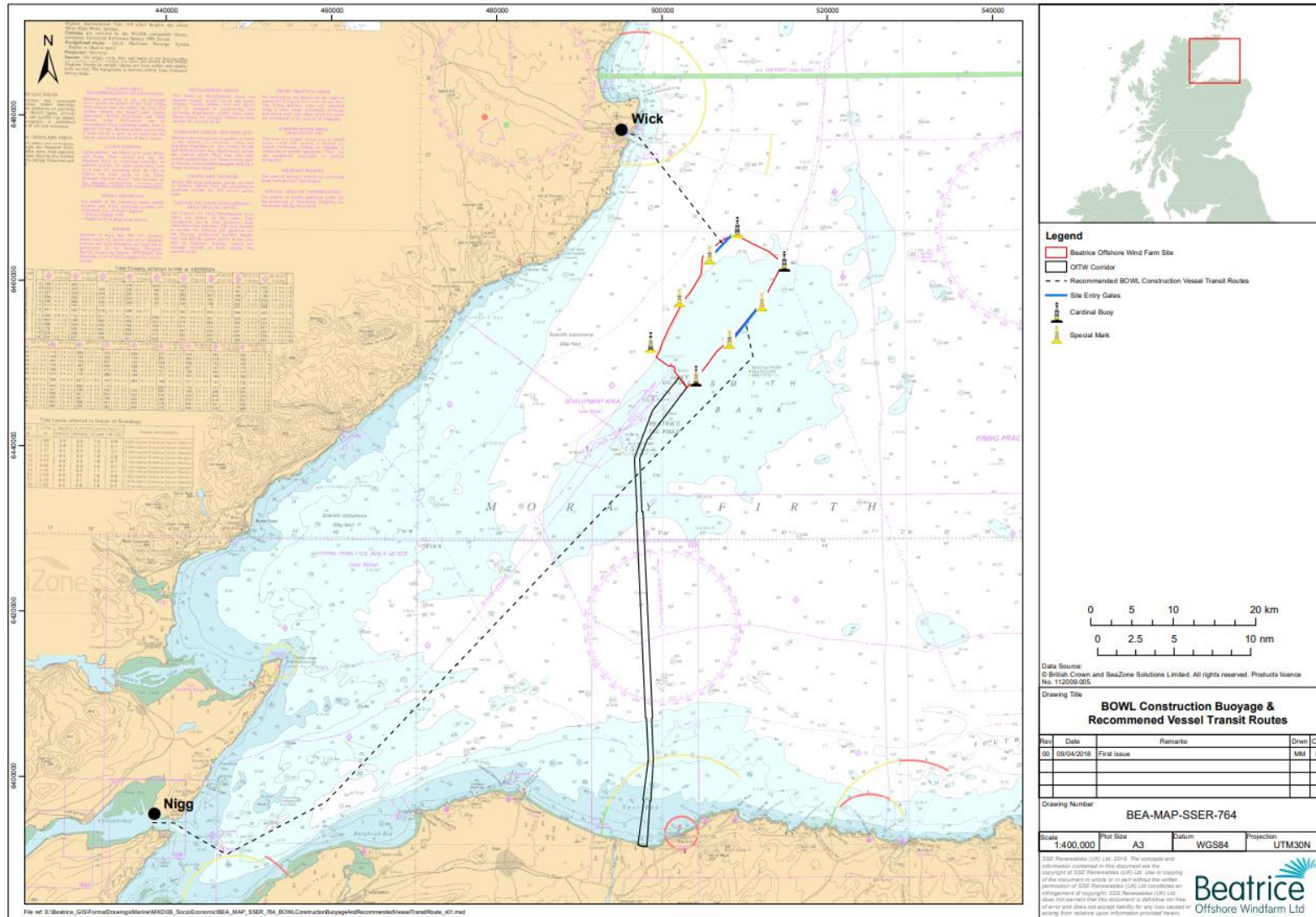
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No Ref	Vessel Picture	Vessel Name / Flag	Type / Function	Operator	Contact / contact details	Call sign / MMSI / IMO	LOA (m) Beam (m) Draft (m)	Date on Site	Marine Licence applicable
1		Island Crown	Walk to work WTG commissioning	Stålhaugen 12, 6065 Ulsteinvik, Norway +47 70400000	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy Risbjergvej 1-3 7100 Vejle DENMARK gert.christensen@siemensgamesa.com +45 242 35577	LA C08 / 257245000	96 x 20 m	15.07.2018	OWF
2		Seacat Intrepid	Crew Transfer Vessel / CTV	Seacat Services Ltd	Andrew Link Operations Manager, Seacat Services Ltd 2 Mariners Way, Cowes, Isle of Wight +44 (0)1983 475315 operations@seacatservices.co.uk	2HWU6 / 235107284	27 x 10 x 1.5m	25.09.2017	OWF & OTW
3		Dalby Ribble	Crew Transfer Vessel / CTV	Seacat Services Ltd	Andrew Link Operations Manager, Seacat Services Ltd 2 Mariners Way, Cowes, Isle of Wight +44 (0)1983 475315 operations@seacatservices.co.uk	2IVX5 / 235113236	25.75 x 10.06m	01.07.2018	OWF / OTW
4		Seacat Resolute	Crew Transfer Vessel / CTV	Seacat Services Ltd	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy Risbjergvej 1-3 7100 Vejle DENMARK gert.christensen@siemensgamesa.com +45 242 35577	2FWR9 / 235094873	24 x 7m	30.06.2018	OWF
5		Pacific Orca	Offshore Supply Ship	Siemens Gamesa Renewable Energy (SGRE)	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy Risbjergvej 1-3 7100 Vejle DENMARK gert.christensen@siemensgamesa.com +45 242 35577	5BRE3 / 210548000	161.3 x 49.02m	10.07.2018	OWF




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6		Fob Swath 3	Crew Transfer Vessel / CTV	Siemens Gamesa Renewable Energy (SGRE)	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy; Rikegade 1-3 7100 Vejle DENMARK gert.christensen@demensgamea.com +45 242 55577	OUWV2 / 219460000	24.97 x 10.83m	10.07.2018	OWF
7		Fob Swath 5	Crew Transfer Vessel / CTV	Siemens Gamesa Renewable Energy (SGRE)	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy; Rikegade 1-3 7100 Vejle DENMARK gert.christensen@demensgamea.com +45 242 55577	OUXA2 / 219464000	24.97 x 10.83m	01.11.2018	OWF
8		CTV Seacat Mischief	Crew Transfer Vessel / CTV	Siemens Gamesa Renewable Energy (SGRE)	Martin Baker Offshore Service Manager Beatrice Offshore Windfarm +44 7921 836268 martin.baker@siemensgamesa.com	21XU5 / 235113651	24 x 8m	15.08.2018	OWF
9		Simon Stevin	Offshore Construction	Seaway Heavy Lifting (SHL)	Rene Alferink / Vincent van Velsen (SHL) Wick College Building 1st Floor 1 The Shore Wick Caithness Scotland Email: beatrice-mc@shl.nl	LXUB / 253309000	191.5 x 40 m	30.09.2018	OWF
10		Dalby Wharfe	Crew Transfer Vessel / CTV	Seacat Services Ltd	Andrew Link Operations Manager, Seacat Services Ltd 2 Mariners Way, Cowes, Isle of Wight +44 (0) 1983 475315 operations@seacatservices.co.uk	2GHE7 / 235097365	19 x 7 m	28.09.2018	OWF
11		Morning Dawn PD359	Guard Vessel	Scottish Fishermen's Federation (SFF) for Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus Amhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	MHEU3 / 232253000	45 x 9 m	06.10.2018	OWF

Note: The Fob Swath 5 will be a temporary replacement for the Fob Swath 3