

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

Notice of Operations at Beatrice Offshore Wind Farm

Work Planned for the Period 24.09.2018 to 30.09.2018

Construction of the Beatrice Offshore Wind Farm commenced on the 1st 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 130km² 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.

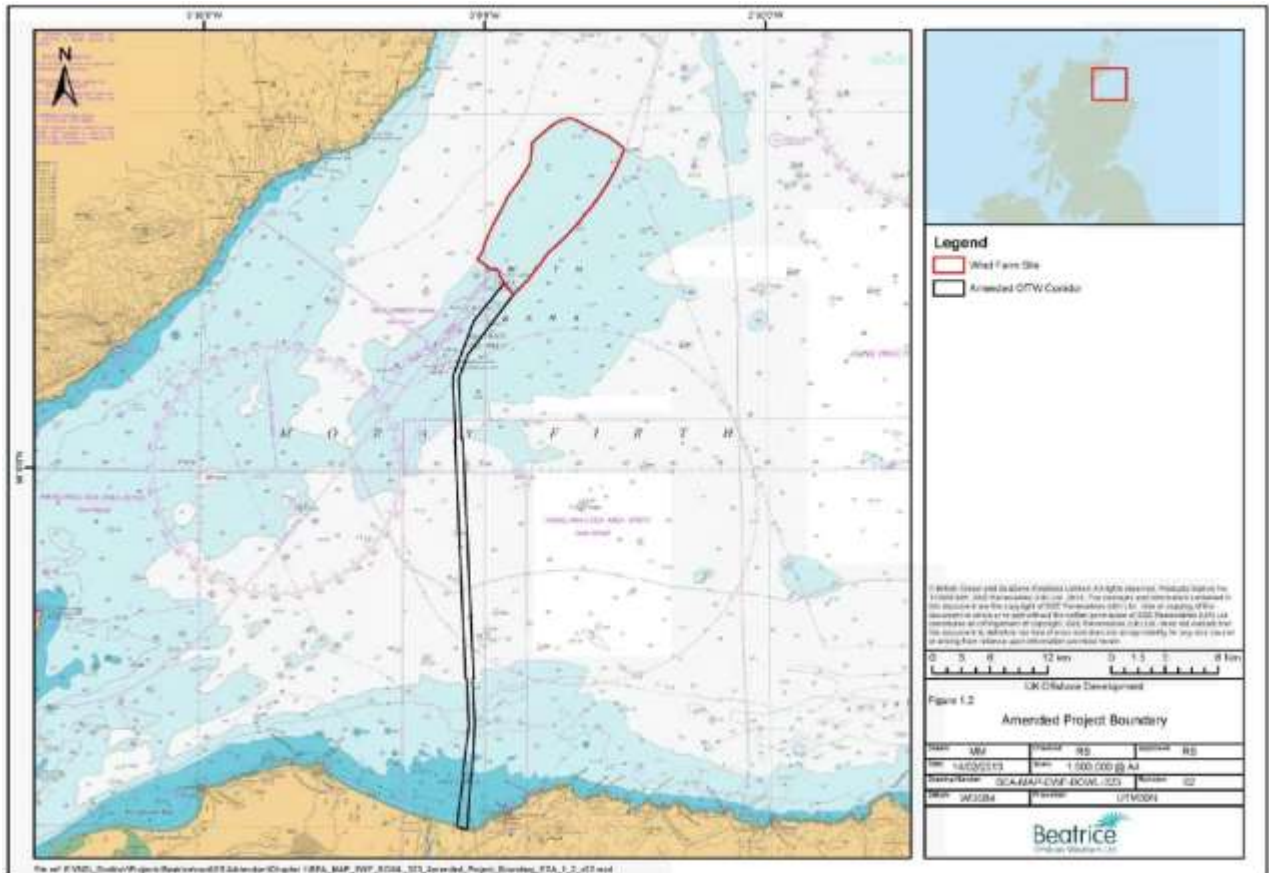


Fig. 1 Beatrice Offshore Wind Farm Location

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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	mc.bowl@sse.com
Address	Unit 1 Harbour Office Wick Caithness KW1 5HA

2. Ongoing Operations

Seaway Heavy Lifting have now completed the installation of 84 wind turbine generators (WTGs) foundations and two offshore transformer modules (OTMs) foundations.

The third campaign of the installation of the inter array cables is also complete.

2.1 Inter Array Cable Installation & Remedial and Maintenance Operations

The CSV Siem Barracuda continues in the Northern sector of the Beatrice wind farm, conducting testing and termination activities, and undertaking the following work scopes;

- Personnel transfers to WTG foundations and OTMs by Ampelmann Gangway
- Crane operations to transfer equipment to / from WTG foundations and Offshore Transformer Modules (OTMs)
- Work class ROV activities at the seabed in the vicinity of WTG foundations and OTMs
- Survey activities along the planned inter-array cable routes linking the appropriate WTG foundations / OTMs.

Olympic Commander is supporting SHL's remedial and maintenance programme in conjunction with the CTVs Offshore Waddenzee and Rix Panther. All vessels will operate on a 24 hrs basis.

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations




Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

2.2.1 – Vessels Involved in On-going Activity

The vessels involved with the described operation are the CSV Siem Barracuda and CTV Marineco Mariah on behalf of BOWL.

CSV Siem Barracuda	
General Description and Dimensions:	Length overall 121m Breadth moulded 22m Draft max. 7m
Call Sign:	5BZQ3
MMSI:	212253000
On Board Contact:	V-Sat phone: +47 23 96 06 82
Offshore Manager / Captain:	+47 989 06 307
E-mail:	captain@barracuda.siemoffshore.com
Onshore Representative:	Audun Oien, + 47 38 600 460, Audun.Oien@siemoffshore.com
	

Marineco Mariah	
General Description and Dimensions:	Crew Transfer Vessel LOA 27 m Breadth moulded 10m Draft max. 2.2m
Call Sign:	2EXU3
MMSI:	235089035
Onshore Representative:	Auden Oien + 47 38 600 460 Auden.oien@siemoffshore.com
	

Weekly Notice of Operations (WNoO)


Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

Olympic Commander	
General Description and Dimensions:	Offshore Supply / Walk to Work Vessel
Call Sign:	LISU3
MMSI:	259298000
Onshore Representative:	René Alferink / Vincent van Velsen c/o Subsea 7 East Campus Arnhall Business Park Westhill Aberdeenshire AB32 6FE Email: Beatrice-mc@shl.nl
	

2.3 Offshore Transmission Modules (OTMs) Commissioning Works

Siemens Transmission and Distribution Ltd (STDL) are carrying out commissioning works on OTM1 and OTM2 in preparation for the energisation of the system.

The following assets are now under the control of the SSE operational safety rules: Shunt Reactor 3, EC1, EC2 up to transition joint bay, Interconnector Cable, OTM1, OTM2, Cyan, Blue, Gold, Amber, Lime, Maroon, Violet & Yellow Strings.



Fig. 3 OTM1

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations

Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72



Fig. 4 OTM2

2.4 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.

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

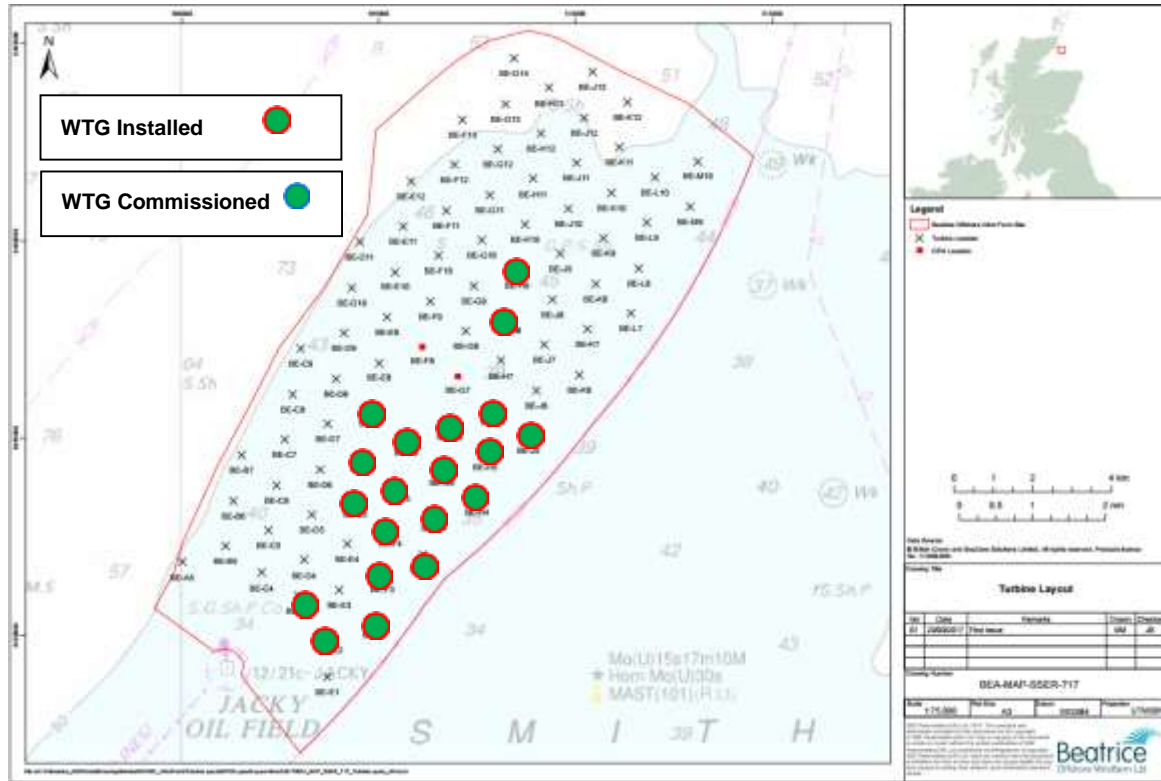


Fig. 5 Locations of WTG in the BOWL Construction Site

Table 1 WTG Installation and Commissioning Progress

Turbine installation completed at: 20 Locations

Turbine commissioning complete at: 16 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		
BE-C5	58° 12.902' N	002° 57.749' W		
BE-C6	58° 13.524' N	002° 57.541' W		
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		
BE-D5	58° 13.117' N	002° 56.626' W		
BE-D6	58° 13.739' N	002° 56.417' W		
BE-D7	58° 14.359' N	002° 56.209' W		

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

Location ID	Latitude WGS84	Longitude WGS84	WTG Installed	WTG Commissioned
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		
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		
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	17.09.2018	
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	
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		
BE-G14	58° 19.351' N	002° 51.362' W		
BE-H4	58° 13.356' N	002° 52.339' W	03.08.2018	20.08.2018
BE-H5	58° 13.977' N	002° 52.130' W	20.05.2018	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	
BE-H9	58° 16.461' N	002° 51.289' W	17.09.2018	
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		

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

Location ID	Latitude WGS84	Longitude WGS84	WTG Installed	WTG Commissioned
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		

2.4.1 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.

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.

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations

Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72



Fig. 6 Siemens SWT-7.0-154 WTG

2.4.2 Vessels Involved in Activity

The Offshore Supply Ship / 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.

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



Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited


Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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
	

Fob Swath 3	
General Description and Dimensions:	Crew Transfer Vessel (CTV) L: 25m / B: 11m
Call Sign:	OJWY2
MMSI:	219460000
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
	

Weekly Notice of Operations (WNoO)


Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

Seacat Resolute	
General Description and Dimensions:	Crew Transfer Vessel (CTV) L: 25m / B: 11m
Call Sign:	2FWR9
MMSI:	235094873
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
	

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations

Issue Date: 24 September 2018

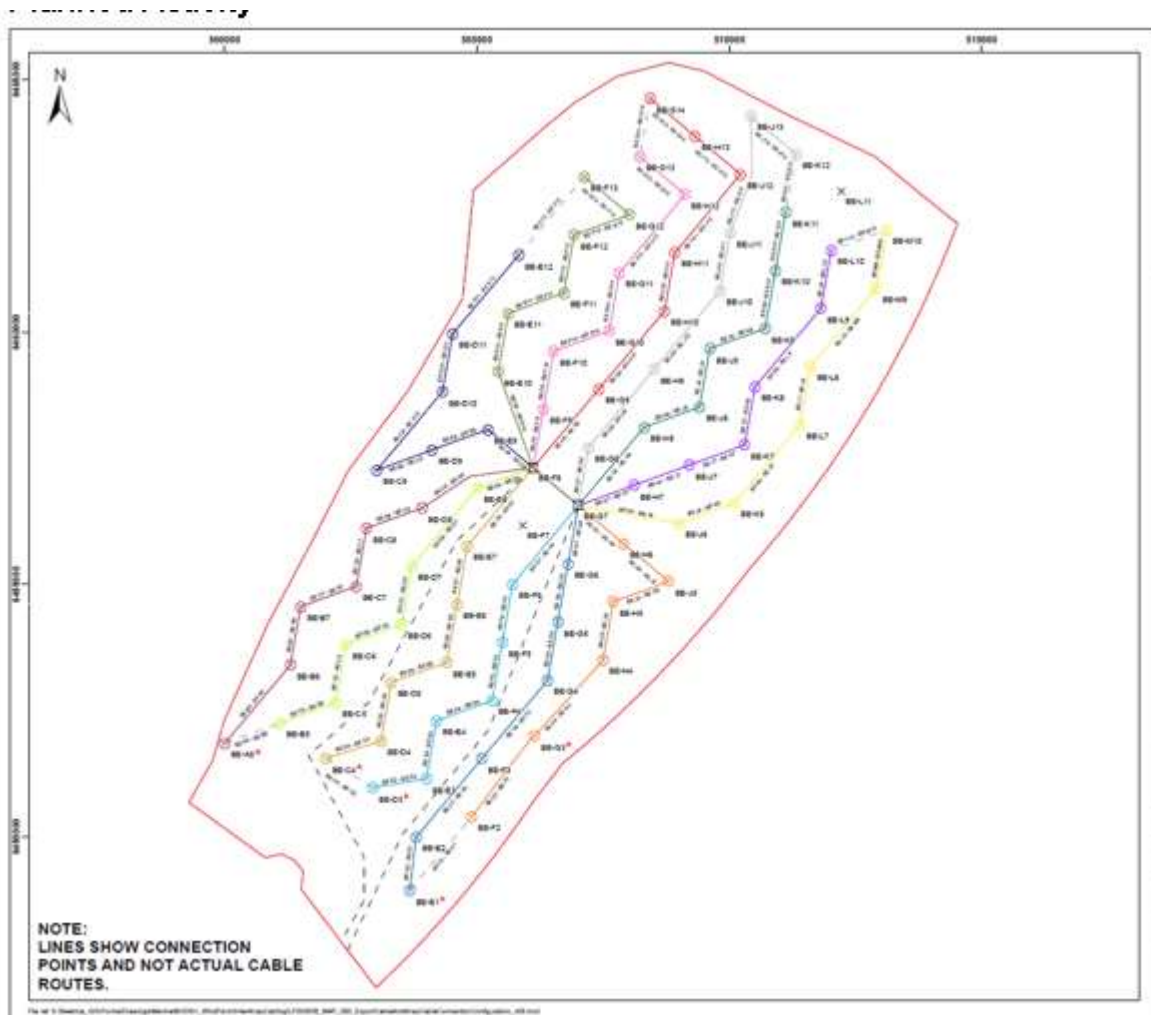
LF000005-WNO-013: Weekly Notice of Operations - Rev 72

2.5 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 is expected on site around 26th September for one week with two further load-outs to follow between 6th to 20th October.

2.5.2 Area of Planned Activity



Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

Table 2 Location of rock emplacement by String Colour

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

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

2.5.1 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 ³	Industry Standard - Stability Purposes
Specific Density of Rock	2.65Te/m ³	Industry Standard - Stability Purposes
Dry Bulk Density of Rock	1.50 - 1.60Te/m ³	Industry Standard - Stability Purposes

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations

Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

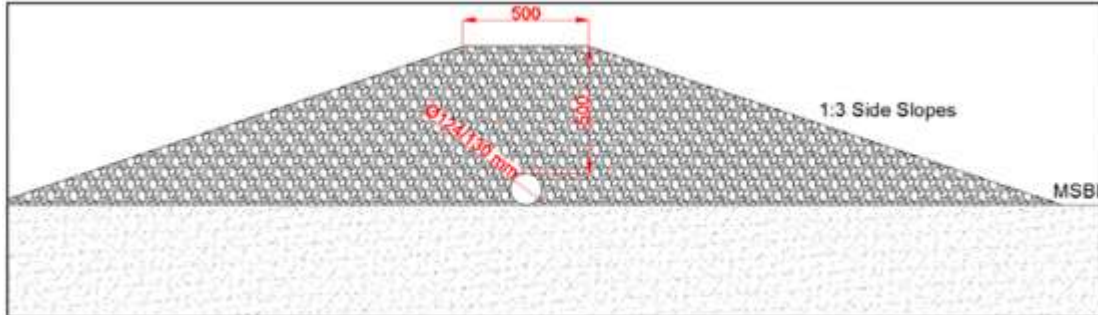


Fig. 7 Rock Berm Profile – Surface Laid Section (worse case)

2.5.2 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	
General Description and Dimensions:	Offshore Construction – Fall Pipe Vessel 191.5 x 40 x 9.2 m
Call Sign:	LXUB
MMSI:	253309000
Onshore Representative:	Rene Alferink / Vincent van Velsen (SHL) C/O Subsea 7 Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email. beatrice-mc@shl.nl



Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations

Issue Date: 24 September 2018
LF000005-WNO-013: Weekly Notice of Operations - Rev 72

2.6 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 7th September 2018.

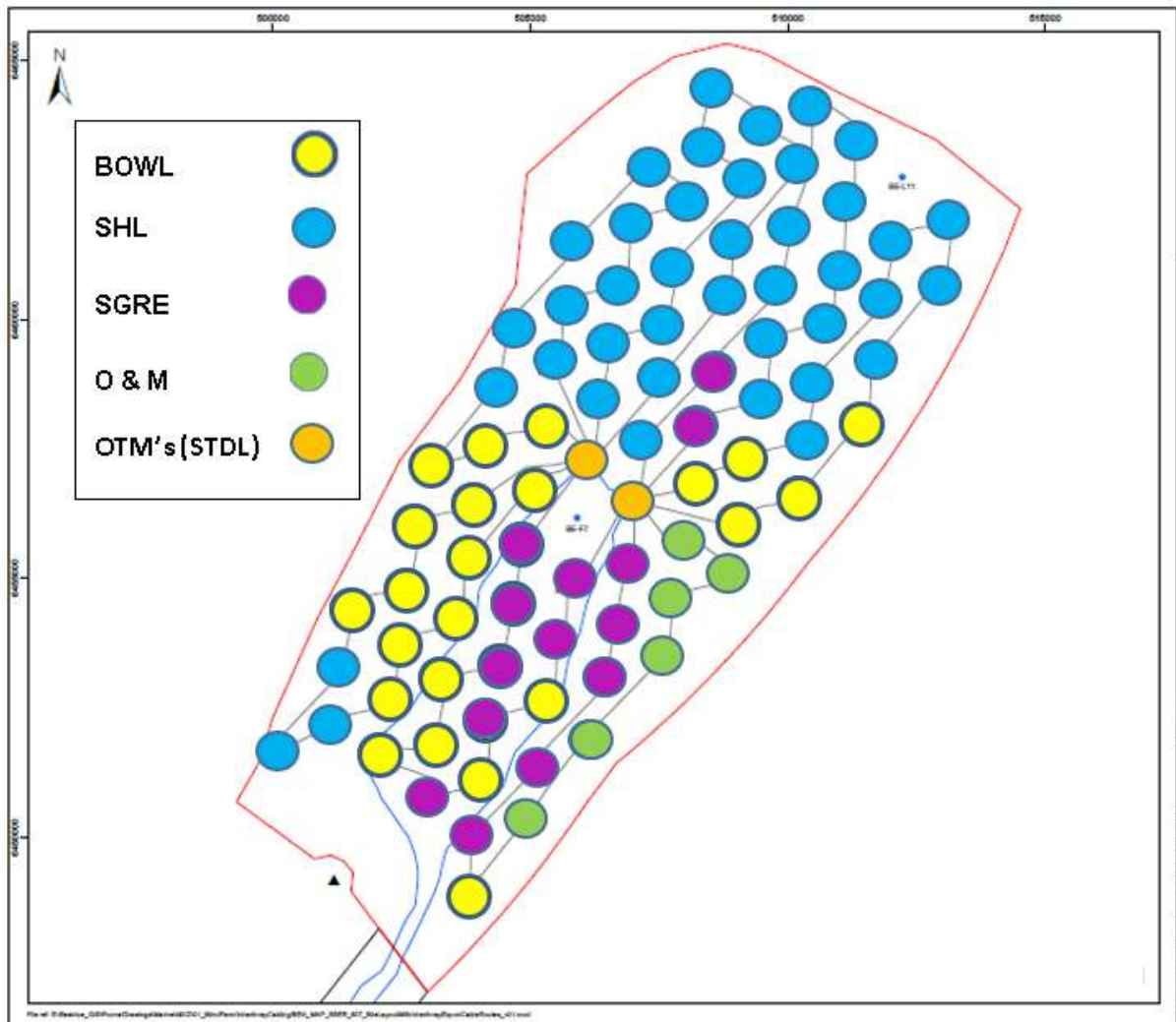


Fig. 7 Custody of Assets Chart

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

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited



Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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

2.6.1 Vessel & Aircraft Engaged in Activity

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

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

2.7 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



Fig. 8 Examples of equipment which the above moorings support

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations

Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

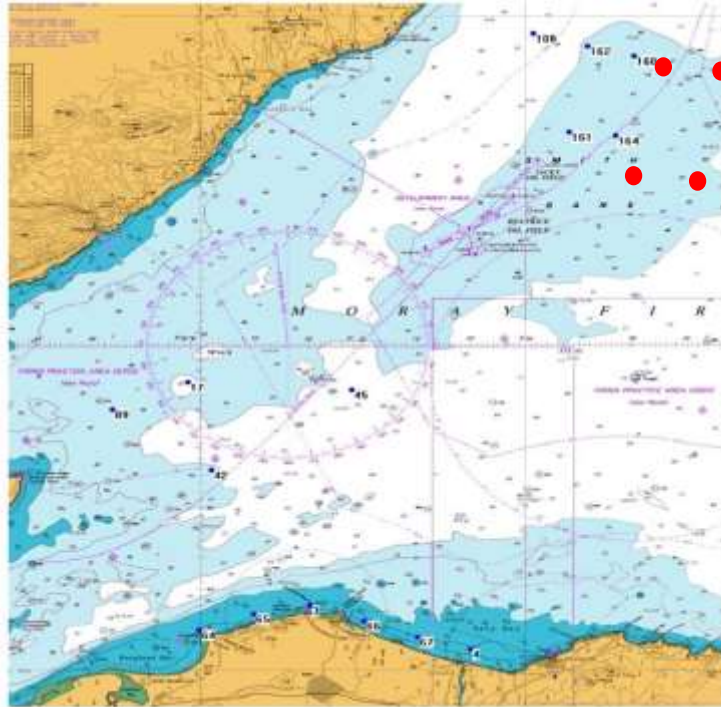


Fig. 9 Scientific equipment locations (remaining locations in red)

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.

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
LF000005-WNO-013: Weekly Notice of Operations - Rev 72

4. Guard Vessel Deployment

The guard vessel currently on site is Shoulora. She will be relieved by the Moremma on Wednesday 26th September. Both vessels can be contacted on VHF Ch.16

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

On behalf of BOWL, Seaway Heavy Lifting has contracted the Scottish Fishermen's Federation (SFF) to provide guard vessels during the piling and foundation installation campaigns.

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: Alex Winrow-Giffin, telephone: +44 (0)1379 872144 and mobile: +44 (0)7760 160039. alex@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.

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>

Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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>.






Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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 Fiskergade 1-9 7100 Vejle DENMARK gert.christensen@siemensgamesa.com +46 242 85677	LAC08 / 257245000	96 x 20 m	15.07.2018	OWF
2		Rix Lion	Crew Transfer Vessel / CTV	Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) c/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email, beatrice-mc@shl.nl	2H0H3 / 235105282	26 x 10 x 2.5m	06.04.2018	OWF
3		Rix Panther	Crew Transfer Vessel / CTV	Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) c/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email, beatrice-mc@shl.nl	2FR19 / 233093688	19 x 8m	04.05.2018	OWF
4		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	2HUU6 / 235107284	27 x 10 x 1.5m	25.09.2017	OWF & OTW
5		Marineco Mariah	Crew Transfer Vessel / CTV	Seaway Heavy Lifting (SHL) for Siem Offshore Contractors	Rene Afferink / Vincent van Velsen (SHL) c/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email, beatrice-mc@shl.nl	2EXU3 / 235089035 / 9638240	27 x 10 x 2.2m	18.06.2018	OWF






Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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
6		Siem Barracuda	Cable Support Vessel	Siem Offshore Contractors for Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) c/o Subsea 7 East Campus Arnhall Business Park Westhall, Aberdeenshire, AB32 6FE Email: beatrice-mc@shl.nl	5BZQ3 / 212253000	120 x 22 x 6m	09.03.2018	OWF
7		Dalby Aire	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	2HMMJ6 / 235097362	19 x 8 x 1.7m	16.05.2018	OWF / OFTW
8		Rix Cheetah	Crew Transfer Vessel / CTV	Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) c/o Subsea 7 East Campus Arnhall Business Park Westhall, Aberdeenshire, AB32 6FE Email: beatrice-mc@shl.nl	2GGY7 / 235097312	25 x 7m	04.06.2018	OWF
9		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	2VVK5 / 235113236	25.75 x 10.06m	01.07.2018	OWF / OFTW
10		Seacat Resolute	Crew Transfer Vessel / CTV	Seacat Services Ltd	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy Fiskorgade 1-9 7100 Vejle DENMARK gert.christensen@siemensgamesa.com + 45 242 95577	2FWR9 / 235094873	24 x 7m	30.06.2018	OWF






Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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
11		Pacific Orca	Offshore Supply Ship	Siemens Gamesa Renewable Energy (SGRE)	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy Fiskergade 1-9 7100 Vejle DENMARK gert.christensen@siemensgamesa.com + 45 242 95577	5BRE3 / 210548000	161.3 x 49.02m	10.07.2018	OWF
12		FOB Swath 3	Crew Transfer Vessel / CTV	Siemens Gamesa Renewable Energy (SGRE)	Gert Christensen Marine Operations Manager Siemens Gamesa Renewable Energy Fiskergade 1-9 7100 Vejle DENMARK gert.christensen@siemensgamesa.com + 45 242 95577	OUWY2 / 219460000	24.97 x 10.83m	10.07.2018	OWF
13		Offshore Waddenzee	Crew Transfer Vessel / CTV	Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) c/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email. beatrice-mc@shl.nl	2HSC3 / 235106183	19.7 x 8.2m	02.07.2018	OWF
14		Dalby Trees	Crew Transfer Vessel / CTV	Seacat Services Ltd	Andrew Link Operations Manager, Seacat Services Ltd 2 Mariners Way, Cowes, Isle of Wight +44 (0)1903 475315 operations@seacatservices.co.uk	2FIA7 / 235091458	19 x 6m	30.07.2018	OWF / OFTW
15		CTV Green Quest	Crew Transfer Vessel / CTV	Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email. beatrice-mc@shl.nl	2DYY8 / 235083117	16 X 6m	10.08.2018	OWF






Weekly Notice of Operations (WNoO)

Beatrice Offshore Windfarm Limited

Construction Operations



Issue Date: 24 September 2018
 LF000005-WNO-013: Weekly Notice of Operations - Rev 72

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
16		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	20XU5 / 235113651	24 x 8m	15.08.2018	OWF
17		GV Shoulora	Guard Vessel	Scottish Fishermens Federation (SFF) for Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email. beatrice-mc@shl.nl	2KDDQ / 234014000	17 x 5m	08.09.2018	OWF
18		Olympic Commander	Offshore Supply / Walk to Work Vessel	Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email. beatrice-mc@shl.nl	LISU3 / 259298000	92.95 x 19.73m	26.08.2018	OWF
19		Simon Stevin	Offshore Construction	Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email. beatrice-mc@shl.nl	LXUB / 253389000	191.5 x 40 m	26.09.2018	OWF
20		GV Moremma	Guard Vessel	Scottish Fishermens Federation (SFF) for Seaway Heavy Lifting (SHL)	Rene Afferink / Vincent van Velsen (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE Email. beatrice-mc@shl.nl	MKHC6 / 232007170	24 x 7m	26.09.2018	OWF