

## Notice to Activities Associated with the Development of Beatrice Offshore Wind Farm

Date of Issue	15 <sup>th</sup> October 2018	Notice Number	LF000005-NTM-052rev02
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Please promulgate the following as a Notice to Mariners:

### Inter-Array Cable, Rock Emplacement Campaign 2

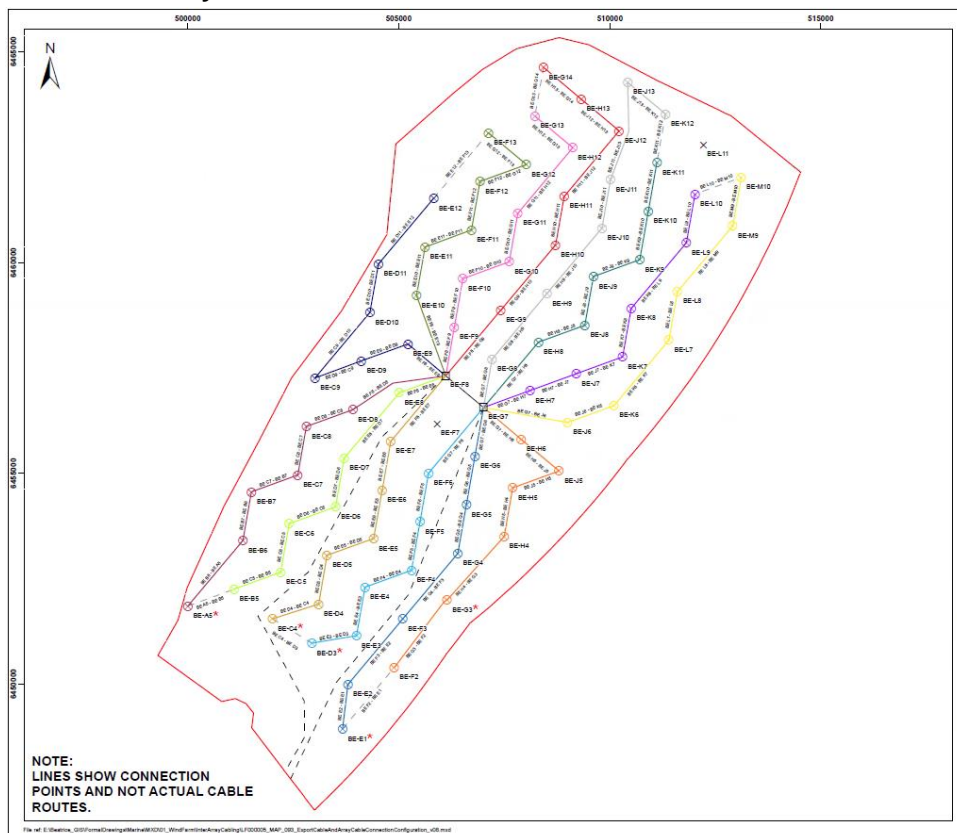
On Behalf of BOWL, Jan De Nul, using the Fall Pipe Vessel Simon Stevin, will install rock on 45 of the array cables of the Beatrice Offshore Windfarm Limited. The work is planned to be completed in 3 loadings of the FPV Simon Stevin. The first campaign was completed in September, with 2 further load-outs and installation occurring between 20<sup>th</sup> – 31<sup>st</sup> October approximately.

#### 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 (Day Operations)	+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. Area of Planned Activity



**Fig.1** Location of Array Cable Rock Emplacement works, campaign 2

LF000005-NTM052-Rev02-Notice to Mariners\_ Array Cable Rock Emplacement.

# NOTICE TO MARINERS

**Table 1** Location of rock emplacement by string colour. (WGS 84)

● Denotes locations completed in Campaign1

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

### 3. Activity Description

Following the Inter Array Cable (IAC) installation campaigns 1 & 2, 50 cables have been installed by Siem Offshore Contractors with 27 cables buried at, or in excess of the minimum target burial depth specification of 0.6m. The remaining 23 cables have sections out with specification, with depths of less

LF00005-NTM052-Rev02-Notice to Mariners\_ Array Cable Rock Emplacement.

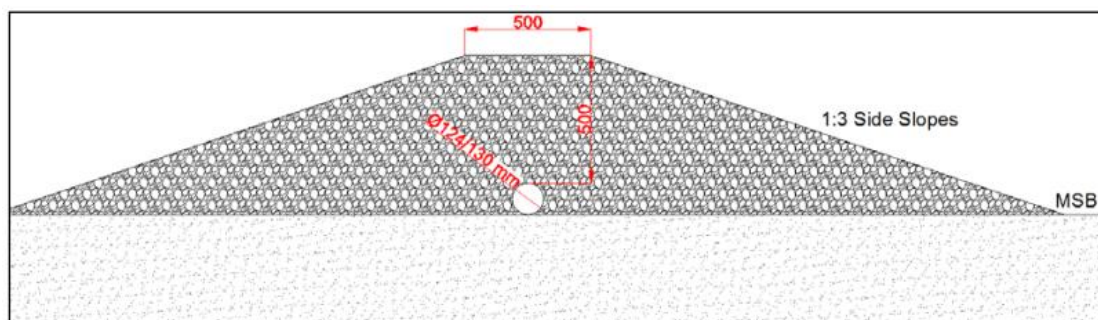
# NOTICE TO MARINERS

than 0.6m. The expected length requiring protection by rock emplacement is made up of known and projected lengths, with an expectation of ~17km total over these 23 cables, and for a portion of the 41 cables to be installed in campaign 3.

SOC, in collaboration with Subsea 7 have normalised the berm design to take account of the reported infield 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 trawl-ability) would consist of the following details stated within Table 2

**Table 2** 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



**Fig.2** Rock Berm Profile – surface laid section (worse case)


LF00005-NTM052-Rev02-Notice to Mariners\_ Array Cable Rock Emplacement.

# NOTICE TO MARINERS

## 4. Vessels Associated with the Activity

The Fall Pipe Vessel 'Simon Stevin' is an ocean-going high powered vessel, equipped with a flexible fall pipe, which is positioned by means of its Remotely Operated Vehicle (ROV) at the outer end of the fall pipe. The vessel is equipped for Dynamic Positioning (DP2) operations, enabling the vessel to manoeuvre in any direction or remain in a fixed position.

Two large hydraulic excavators are mounted in the middle of each bunker. During rock installation, these excavators are used to feed the conveyor belt system to the fall pipe tower.

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

The rock installation process is controlled by the FPROV at the bottom of the fall pipe, which together with the ship's position determines the position of the placed rock. The amount of installed material can be adjusted by setting the feeder output and the vessel's tracking speed.

## 5. Crew transfers

Crew transfers for the Simon Stevin will be conducted in port, by helicopter or CTV.

## 6. Adverse Weather Conditions

Should adverse weather occur during the commissioning works, the rock installation vessel will cease operation and hold position until suitable working weather returns. In case of extreme weather, the vessel will leave site for a port of refuge.

## 7. General Safety Advice

All vessels engaged in the construction 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.

Use of Safety Zones within the Beatrice Offshore Windfarm Construction Area:

LF000005-NTM052-Rev02-Notice to Mariners\_ Array Cable Rock Emplacement.

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The Secretary of State for Business, Energy and Industrial Strategy (BEIS) has approved the use of safety zones under the Energy Act 2004 for the installation of wind turbines and offshore transformer module foundations/substructures within the Beatrice Offshore Windfarm. The approval was granted on the 17th March 2017.

The Secretary of State has declared Safety Zones under the following terms: During Construction

- 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.
- It is noted that the 500 metre safety zones will roll with the installation activity with no more than two construction vessels working at any one time. Vessels are advised that anchors associated with the construction vessels may extend outside of the 500 metre safety zone.
- A 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.
- Positions of foundations installed will be promulgated within the Weekly Notice of Operations. Only vessels associated with the Beatrice Offshore Wind Farm construction may enter statutory Safety Zones with prior permission.

The duty Guard Vessels and Marine Coordination centre will be responsible for monitoring and policing the Safety Zones; and can be contacted directly for advice.

Further information on the application of Safety Zones can be obtained from the Marine Coordinator. Users are advised to keep clear of construction activities, including Safety Zones, within the Beatrice Offshore Windfarm construction area in line with Marine Guidance Note 372.

**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.

## 8. Dedicated Guard Vessels

There are two guard vessels stationed, one to the North and one to the South of the construction site. These guard vessels change out on a regular basis.

All vessels can be contacted on VHF CH16

## 9. 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 or email: [jen.miller@brownmay.com](mailto:jen.miller@brownmay.com)

## 10. 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.

A copy of this notice can also be found at <https://www.beatricewind.com/>