

# Weekly Notice of Operations (WNoO)

## Beatrice Offshore Windfarm Limited

### Construction Operations



Issue Date: 16th April 2018

LF000005-WNO-013: Weekly Notice of Operations - Rev 50

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

#### Work Planned for the Period 16-04-2018 to 22-04-2018

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 will 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.

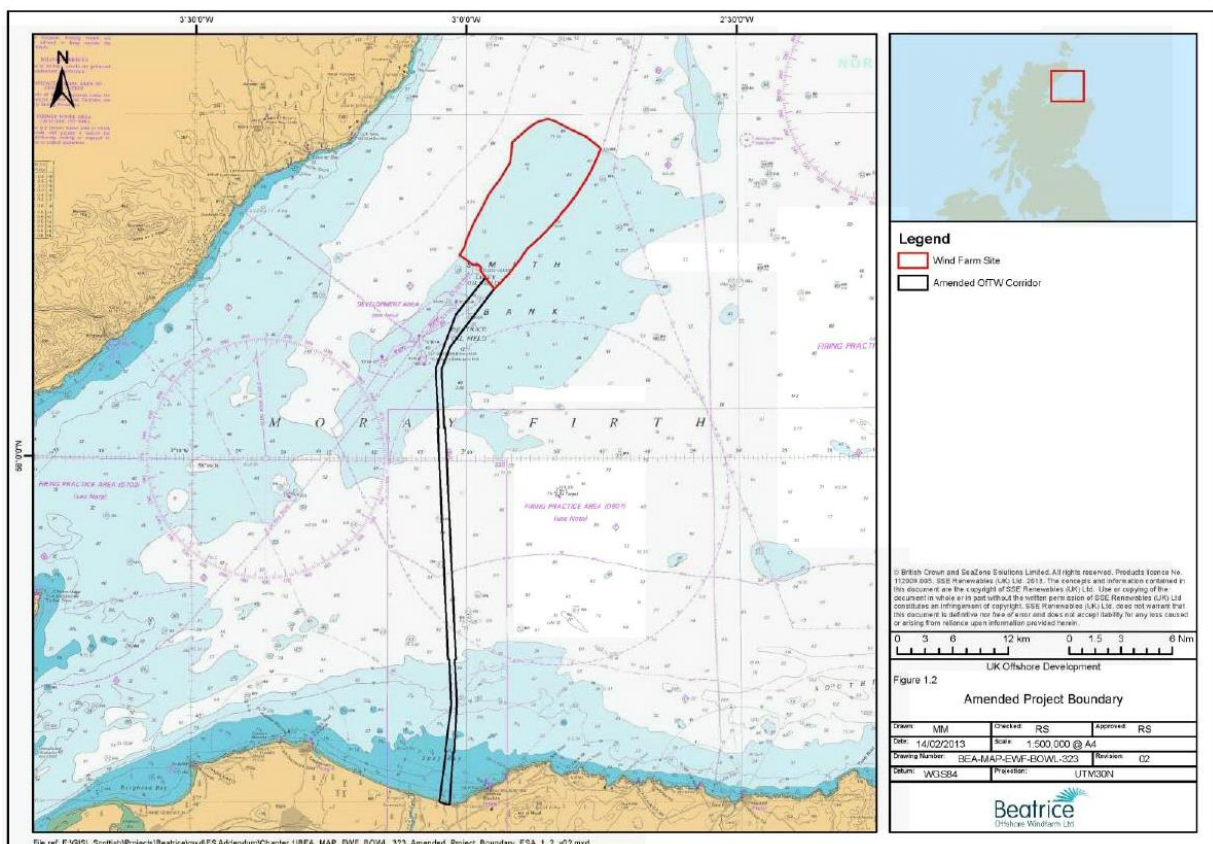


Fig. 1 Beatrice Offshore Wind Farm Location

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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.

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

#### 2. Ongoing Operations

##### 2.1 Beatrice Offshore Wind Farm Jacket Installation Campaign

<b>Project:</b>	Jacket Installation Campaign (See Notice to Mariners) NTM-032 Rev01
<b>Contractor:</b>	SHL
<b>Contract Purpose:</b>	To install WTG & OTM Jackets at completed piled locations within the construction site.
<b>Area:</b>	BOWL Construction Site: Jacket Locations (See Fig. 2 Table1)
<b>Deployment Dates:</b>	08 August 2017 – September 2018
<b>Deployment Vessels:</b>	HLV Stanislav Yudin, Oleg Strashnov, Smit Sentosa, AHT Maersk Trader, Britoil 120, Pegasus, Smit Seraya, Bremen Fighter, Kamarina, Centaurus, VOS Prelude, Fairplay-33, Bremen Fighter
<b>Equipment:</b>	HLV equipment, Pile cleaning equipment, Grouting equipment.

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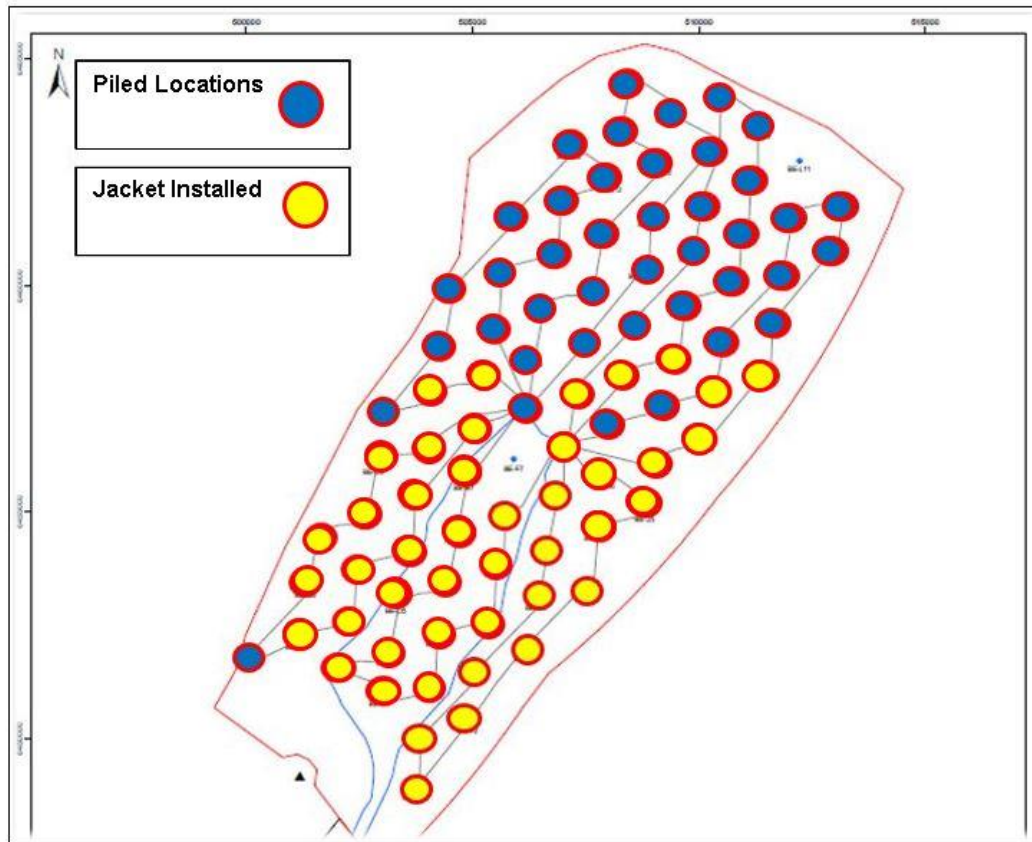


Fig. 2 Pile installation completed at 86 Locations

Foundation installation completed at 45 Locations

Table 1 - WTG and OTM Location Coordinates

Location ID	Latitude WGS84	Longitude WGS84	Piling Complete	Jacket installed
BE-A5	58° 12.471' N	002° 59.996' W	14.07.2017	
BE-B5	58° 12.687' N	002° 58.873' W	12.07.2017	23.03.2018
BE-B6	58° 13.308' N	002° 58.664' W	16.06.2017	22.02.2018
BE-B7	58° 13.929' N	002° 58.456' W	18.07.2017	20.02.2018
BE-C4	58° 12.307' N	002° 57.948' W	23.05.2017	13.12.2017
BE-C5	58° 12.902' N	002° 57.749' W	11.07.2017	09.02.2018
BE-C6	58° 13.524' N	002° 57.541' W	10.07.2017	08.02.2018
BE-C7	58° 14.144' N	002° 57.332' W	15.06.2017	01.09.2017
BE-C8	58° 14.766' N	002° 57.124' W	17.07.2017	20.01.2018
BE-C9	58° 15.386' N	002° 56.915' W	28.08.2017	
BE-D3	58° 11.995' N	002° 57.002' W	21.05.2017	12.12.2017
BE-D4	58° 12.497' N	002° 56.834' W	22.06.2017	14.12.2017
BE-D5	58° 13.117' N	002° 56.626' W	26.05.2017	21.01.2018
BE-D6	58° 13.739' N	002° 56.417' W	13.06.2017	31.08.2017
BE-D7	58° 14.359' N	002° 56.209' W	31.05.2017	18.01.2018

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Location ID	Latitude WGS84	Longitude WGS84	Piling Complete	Jacket installed
BE-D8	58° 14.981' N	002° 55.999' W	02.06.2017	20.12.2017
BE-D9	58° 15.602' N	002° 55.790' W	16.07.2017	21.09.2017
BE-D10	58° 16.223' N	002° 55.582' W	31.08.2017	
BE-D11	58° 16.844' N	002° 55.373' W	13.08.2017	
BE-E1	58° 10.900' N	002° 56.256' W	10.04.2017	01.09.2017
BE-E2	58° 11.470' N	002° 56.128' W	14.04.2017	16.08.2017
BE-E3	58° 12.090' N	002° 55.920' W	19.04.2017	02.12.2017
BE-E4	58° 12.712' N	002° 55.710' W	02.07.2017	20.09.2017
BE-E5	58° 13.333' N	002° 55.502' W	19.05.2017	03.02.2018
BE-E6	58° 13.954' N	002° 55.293' W	18.05.2017	24.08.2017
BE-E7	58° 14.575' N	002° 55.084' W	01.06.2017	25.08.2017
BE-E8	58° 15.196' N	002° 54.875' W	30.05.2017	18.12.2017
BE-E9	58° 15.817' N	002° 54.665' W	15.07.2017	21.09.2017
BE-E10	58° 16.438' N	002° 54.456' W	01.09.2017	
BE-E11	58° 17.059' N	002° 54.247' W	19.09.2017	
BE-E12	58° 17.680' N	002° 54.037' W	14.08.2017	
BE-F2	58° 11.685' N	002° 55.005' W	03.07.2017	06.09.2017
BE-F3	58° 12.306' N	002° 54.796' W	17.04.2017	07.09.2017
BE-F4	58° 12.927' N	002° 54.588' W	04.07.2017	19.09.2017
BE-F5	58° 13.548' N	002° 54.378' W	17.05.2017	14.09.2017
BE-F6	58° 14.168' N	002° 54.169' W	11.05.2017	11.09.2017
BE-F8 (OTM2)	58° 15.411' N	002° 53.750' W	08.04.2017	
BE-F9	58° 16.031' N	002° 53.540' W	22.09.2017	
BE-F10	58° 16.653' N	002° 53.330' W	20.09.2017	
BE-F11	58° 17.274' N	002° 53.120' W	07.09.2017	
BE-F12	58° 17.894' N	002° 52.911' W	05.07.2017	
BE-F13	58° 18.516' N	002° 52.701' W	10.09.2017	
BE-G3	58° 12.544' N	002° 53.726' W	28.05.2017	15.08.2017
BE-G4	58° 13.142' N	002° 53.464' W	17.06.2017	08.09.2017
BE-G5	58° 13.762' N	002° 53.254' W	10.05.2017	09.09.2017
BE-G6	58° 14.384' N	002° 53.044' W	06.05.2017	20.08.2017
BE-G7 (OTM1)	58° 15.004' N	002° 52.834' W	03.04.2017	06.02.2018
BE-G8	58° 15.625' N	002° 52.625' W	07.07.2017	10.09.2017
BE-G9	58° 16.247' N	002° 52.415' W	04.11.2017	
BE-G10	58° 16.867' N	002° 52.204' W	21.09.2017	
BE-G11	58° 17.488' N	002° 51.994' W	20.08.2017	
BE-G12	58° 18.109' N	002° 51.784' W	18.08.2017	
BE-G13	58° 18.730' N	002° 51.574' W	13.09.2017	
BE-G14	58° 19.351' N	002° 51.362' W	14.09.2017	
BE-H4	58° 13.356' N	002° 52.339' W	19.06.2017	13.08.2017
BE-H5	58° 13.977' N	002° 52.130' W	20.06.2017	27.08.2017
BE-H6	58° 14.598' N	002° 51.920' W	20.04.2017	21.08.2017
BE-H7	58° 15.219' N	002° 51.709' W	08.07.2017	
BE-H8	58° 15.840' N	002° 51.499' W	06.05.2017	13.09.2017
BE-H9	58° 16.461' N	002° 51.289' W	15.11.2017	



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BE-H10	58° 17.082' N	002° 51.079' W	27.10.2017	
BE-H11	58° 17.703' N	002° 50.867' W	10.10.2017	
BE-H12	58° 18.324' N	002° 50.657' W	09.09.2017	
BE-H13	58° 18.944' N	002° 50.446' W	07.10.2017	
BE-J5	58° 14.192' N	002° 51.005' W	04.05.2017	26.08.2017
BE-J6	58° 14.812' N	002° 50.795' W	21.06.2017	25.03.2018
BE-J7	58° 15.433' N	002° 50.585' W	06.08.2017	
BE-J8	58° 16.055' N	002° 50.373' W	12.06.2017	22.12.2017
BE-J9	58° 16.675' N	002° 50.163' W	04.08.2017	
BE-J10	58° 17.296' N	002° 49.952' W	03.12.2017	
BE-J11	58° 17.917' N	002° 49.741' W	26.08.2017	
BE-J12	58° 18.538' N	002° 49.530' W	27.08.2017	
BE-J13	58° 19.159' N	002° 49.319' W	08.10.2017	
BE-K6	58° 15.027' N	002° 49.669' W	07.08.2017	24.12.2017
BE-K7	58° 15.648' N	002° 49.459' W	08.08.2017	30.12.2017
BE-K8	58° 16.269' N	002° 49.247' W	31.07.2017	
BE-K9	58° 16.890' N	002° 49.036' W	05.08.2017	
BE-K10	58° 17.510' N	002° 48.825' W	21.08.2017	
BE-K11	58° 18.131' N	002° 48.614' W	25.08.2017	
BE-K12	58° 18.752' N	002° 48.403' W	09.10.2017	
BE-L7	58° 15.862' N	002° 48.333' W	09.08.2017	01.01.2018
BE-L8	58° 16.482' N	002° 48.122' W	25.07.2017	
BE-L9	58° 17.104' N	002° 47.910' W	31.07.2017	
BE-L10	58° 17.724' N	002° 47.698' W	30.07.2017	
BE-M9	58° 17.317' N	002° 46.784' W	27.07.2017	
BE-M10	58° 17.938' N	002° 46.571' W	28.07.2017	

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## 2.2 Installation of Export Cable 1.

### Activity Description

On behalf of BOWL, CLV Nexans Skagerrak and Island Crown have now completed the pull-in of EC1 to OTM1. A Turn Point Anchor and Pull-In Bow have been temporarily stored on the seabed in the positions detailed in Fig 3. Prior to the next second end pull-in of EC2 to OTM2 the Turn Point Anchor and Pull-In Bow will be moved to a position outside OTM 2.

locations	Latitude WGS84	Longitude WGS84
Turn Point Anchor	58° 14.925' N	002° 52.935' W
Pull in Bow	58° 14.910' N	002° 52.957' W

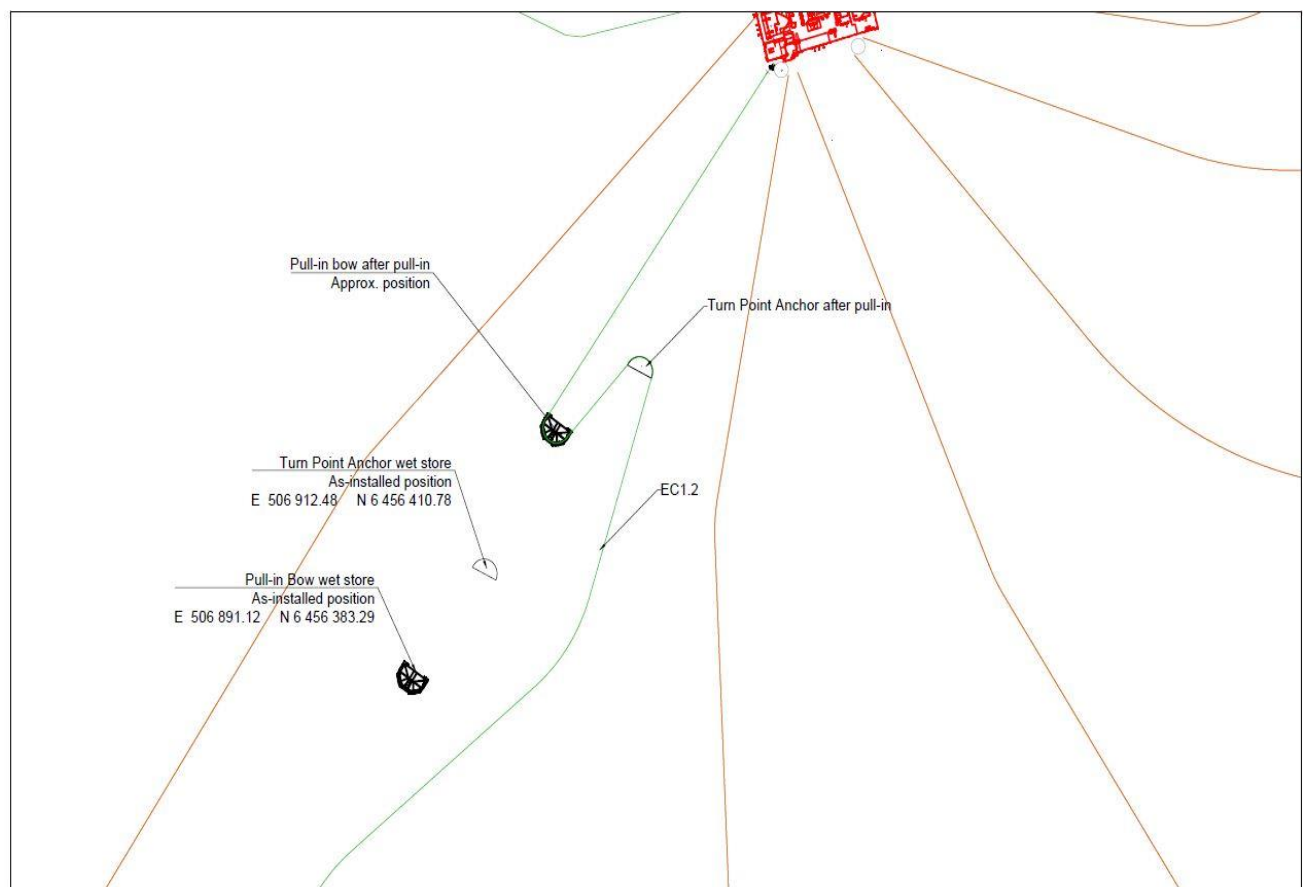


Fig. 3 Showing seabed locations of Turn Point Anchor & Pull-In Bow

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### 2.3 Export Cable 2.1 Cable Pull-In and Cable Lay.

#### 2.3.1 Area of planned activity

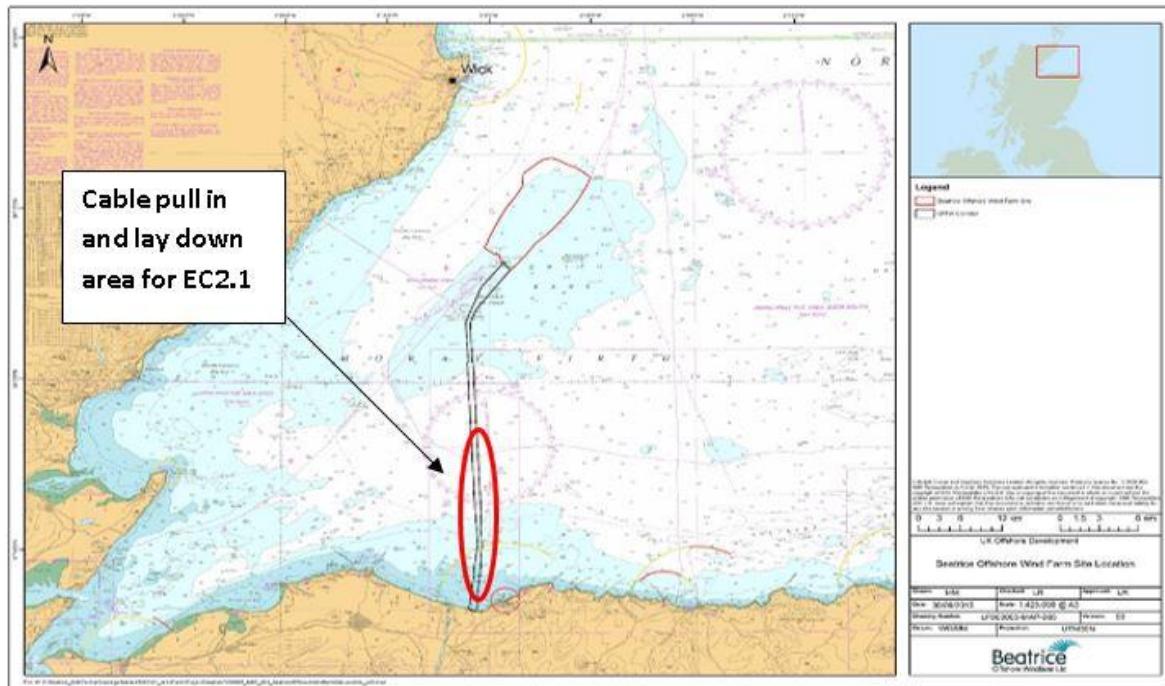


Fig 4 – EC2.1 pull-in and cable lay area.

Approximate location of cable pull in end EC2.1 near shore	Latitude WGS84	Longitude WGS84
KP 0.450 on EC2	57° 40.143'N	003°02.655'W
Approximate location of cable joint location EC2.1 – 2.2	Latitude WGS84	Longitude WGS84
KP 33 on EC2	57° 57.598'N	003°02.661'W

#### 2.3.2 Activity Description

Export cable 2.1 has now been pulled in at KP0.45 and laid on the seabed to KP33. EC2.1 and EC2.2 cables ends have been jointed by the Nexans Skagerrak and laid on the seabed.

The Nexans Skagerrak has left the site and will re-mobilise in preparation for the cable pull in operations on OTM2, once that has been installed.

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### 2.4 Installation of Export Cable EC2.2

CLV Nexans Skagerrak has completed trenching the second section of the export cable to the wet store loop at KP 67

Approximate location of cable laydown ends EC2.2	Latitude WGS84	Longitude WGS84
KP 68 on EC2	58° 14.9062' N	2° 54.8284' W
KP 33 on EC2	57° 57.5978' N	3° 2.6611' W

#### 2.4.1 Activity Description

The cable end has been deployed South of the planned OTM2, and the cable laid Northwards in a loop and then South following the planned cable route from KP68 to KP33

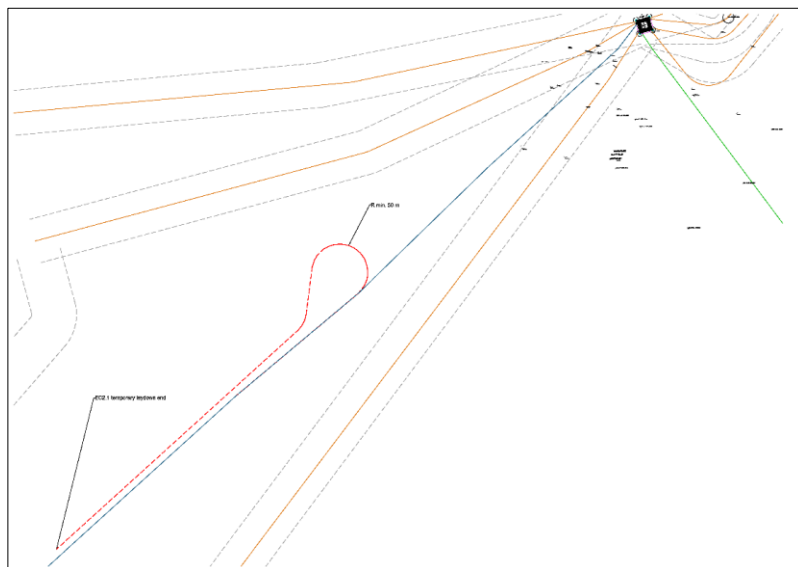


Fig.5 EC2.2 laying south of OTM2, showing location of cable loop

### 2.5 Export Cable 3 – Pull-In and wet store.

Nexans Skagerrak and Island Crown have completed the installation, pull-in and wet store of the EC3 interconnector cable. The cable has been laid on the seabed in a South Westerly direction, looped to the west and then laid Northwards with the cable end laid on the seabed. The cable will be recovered and re-routed at a later date once OTM 2 has been installed. See Fig 5 below.



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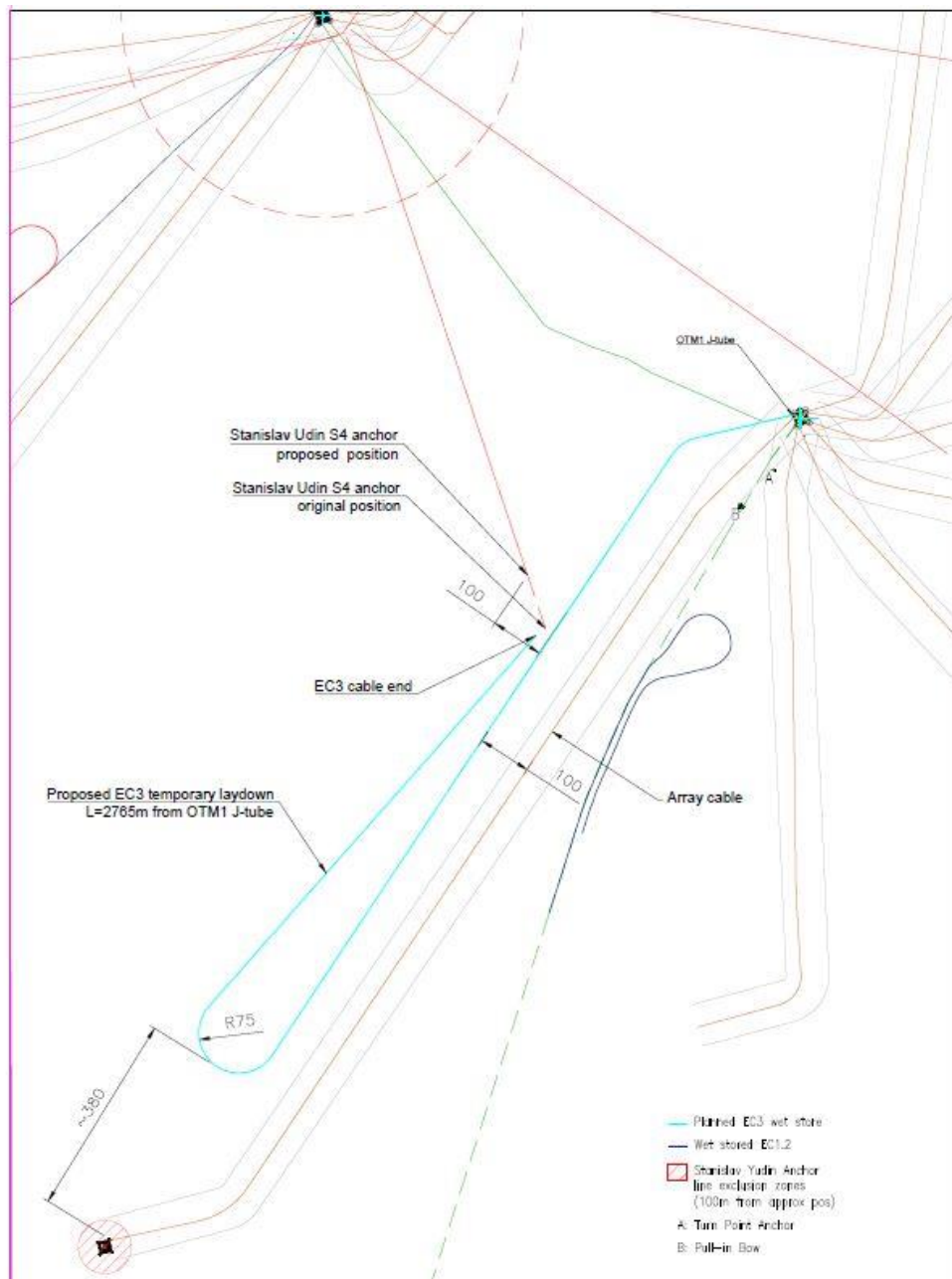


Fig. 6 EC3 wet store location

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#### 2.6 Export Cable 2.1 – Export Cable Trenching works

On behalf of BOWL, Nexans Norway AS using the TSV Elektron will trench the section of unprotected cable length EC2-1, EC3, and the newly installed cables to OTM1, followed by secondary trenching of sections of EC1-1, and EC2, and EC3, where appropriate.

TSV Elektron will undertake remedial burial of cable EC1.1, between KP0.85 to KP0.65 during HW Springs 17th, to 20th April, depending on prevailing weather conditions. The operation will be undertaken during daylight hours only.

TSV will have the trenching machine, Capjet 1MW, deployed in shallow water, with potential excursion from the vessel of up to 100m.

The TSV Elektron will be accompanied by small boats, to support the operation, including the FRC from Elektron and support vessel/workboat from the Nearshore trenching spread, as per LF00005-NTM-43Rev01.

##### 2.6.1 Vessels involved in Activity

Elektron	
<b>General Description and Dimensions:</b>	Trenching/Cable burial L:87m / B:18m
<b>Call Sign:</b>	LADO
<b>MMSI:</b>	258538000
<b>Onshore Representative:</b>	Øyvind Haug BEATRICE Installation Engineering Manager Mob: +47 916 27 674 Office: +47 22 88 65 09



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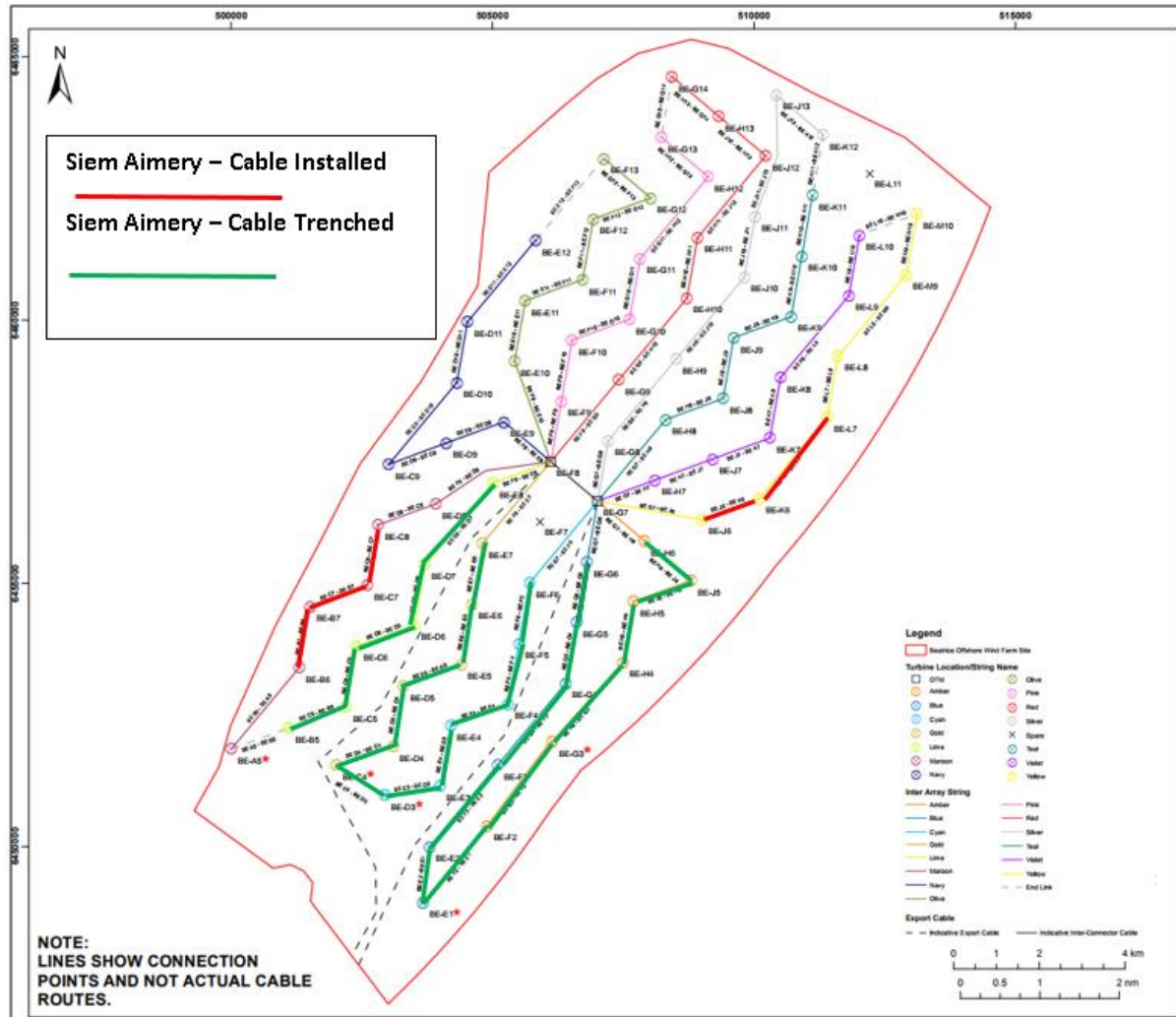
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## 2.7 Inter Array Cable Pre Lay Grapnel Run (PLGR) & Inter Array Cable Installation



**Fig. 7 Cable installation Progress**

The CLV Siem Aimery will install up to 34 Inter Array Cables during the second cable installation campaign, which commenced on the 10<sup>th</sup> of March 2018. Prior to installation, cable routes will be cleared of any surface debris by performing a pre-lay grapnel run (PLGR). The cables will be laid and buried between the Wind Turbine Generator (WTG) & Offshore Transformer Module (OTM) foundations listed below. Cable burial will be undertaken by a tracked jet trencher launched from the Siem Aimery. Three trenching trial cables will be surface laid and secured by clump weights. These trial cables will be trenched / recovered during the third cable installation campaign during July / August 2018. The sequence below is indicative only and subject to amendment. Sixteen (16) cables were laid and buried during campaign 1 in Nov/Dec 2017

The CSV Siem Barracuda will support inter-array cable installation activities in the south-west and central areas of the Beatrice wind farm, working in parallel with the CLV Siem Aimery. The Siem Barracuda will undertake the following workscopes; personnel transfer to WTG

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foundations 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; and survey activities along the planned inter-array cable routes linking the appropriate WTG foundations / OTMs.

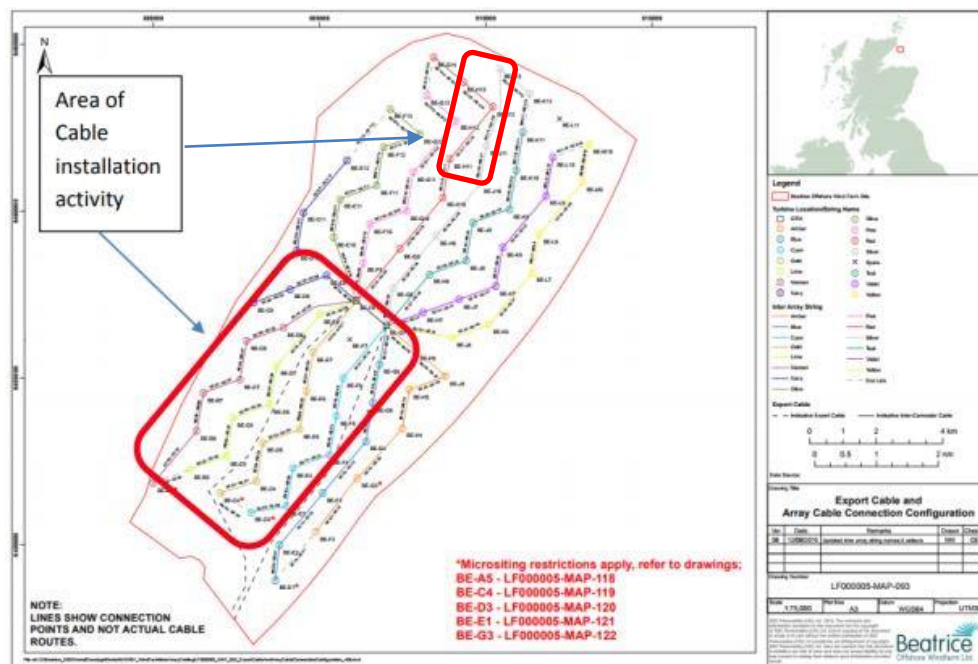


Fig. 8 Inter Array Cable Installation work location

Installation Sequence.

Installation Sequence	Cable Name	Seabed Route-length m	Latitude Start	Longitude Start	Latitude Finish	Longitude Finish	Cable laid	Cable buried
17	BE-E3-BE-D3	1300.7	58°12.084N	2°55.908W	58°11.99N	2°56.974W	12.03.2018	13.03.2018
18	BE-D3-BE-C4	1419.8	58°12.010N	2°56.975W	58°12.31N	2°57.918W	13.03.2018	13.03.2018
19	BE-E5-BE-D5	1354.3	58°13.327N	2°55.488W	58°13.12N	2°56.615W	20.03.2018	23.03.2018
20	BE-E6-BE-E5	1235.9	58°13.948N	2°55.279W	58°13.34N	2°55.490W	21.03.2018	23.03.2018
21	BE-D4-BE-C4	1253.0	58°12.491N	2°56.821W	58°12.32N	2°57.920W	19.03.2018	20.03.2018
22	BE-D5-BE-D4	1233.6	58°13.112N	2°56.611W	58°12.50N	2°56.824W	26.03.2018	07.04.2018
23	BE-D7-BE-D6	1257.0	58°14.353N	2°56.196W	58°13.744N	°56.406W	21.03.2018	24.03.2018
24	BE-E8-BE-D7	2086.7	58°14.366N	2°56.198W	58°15.189N	2°54.862W	22.03.2018	24.03.2018
25	BE-D6-BE-C6	1300.5	58°13.733N	2°56.405W	58°13.529N	2°57.531W	09.04.2018	10.04.2018
26	BE-C6-BE-C5	1257.8	58°13.517N	2°57.529W	58°12.908N	2°57.740W	09.04.2018	10.04.2018
27	BE-C5-BE-B5	1291.4	58°12.896N	2°57.736W	58°12.693N	2°58.863W	09.04.2018	10.04.2018
28	BE-J7-BE-K7	1291.5	58°15.439N	2°50.574W	58°15.642N	2°49.445W		
29	BE-H7-BE-J7	1289.3	58°15.224N	2°51.698W	58°15.428N	2°50.572W		
30	BE-C8-BE-C7	1231.2	58°14.760N	2°57.110W	58°14.150N	2°57.322W	14.04.2018	



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31	BE-C7-BE-B7	1334.5	58°14.139N	2°57.320W	58°13.936N	2°58.445W	10.04.2018	12.04.2018
32	BE-D8-BE-C8	1346.3	58°14.975N	2°55.985W	58°14.772N	2°57.113W		
33	BE-B7-BE-B6	1232.9	58°13.923N	2°58.443W	58°13.314N	2°58.654W	15.04.2018	
34	BE-K6-BE-L7	2087.5	58°15.033N	2°49.659W	58°15.856N	2°48.319W	15.04.2018	
35	BE-E9-BE-D9	1351.8	58°15.811N	2°54.651W	58°15.609N	2°55.780W		
36	BE-J6-BE-K6	1301.9	58°14.819N	2°50.784W	58°15.021N	2°49.656W		
37	OTM1 -BE-H6	1624.4	58°14.995N	2°52.838W	58°14.592N	2°51.907W		
38	OTM1 -BE-F6	2052.5	58°15.004N	2°52.849W	58°14.175N	2°54.158W		
39	OTM1 -BE-G6	1261.5	58°14.995N	2°52.841W	58°14.389N	2°53.033W		
40	OTM2 -BE-E7	2023.3	58°15.403N	2°53.760W	58°14.584N	2°55.075W		
41	OTM2 -BE-E8	1146.7	58°15.412N	2°53.765W	58°15.201N	2°54.865W		
42	BE-H8-BE-J8	1292.3	58°15.846N	2°51.487W	58°16.049N	2°50.359W		
43	OTM1 -BE-H7	1327.2	58°15.000N	2°52.817W	58°15.213N	2°51.696W		
44	OTM1 -BE-H8	2116.7	58°15.009N	2°52.822W	58°15.834N	2°51.484W		
45	OTM2 -BE-D8	2375.6	58°15.414N	2°53.766W	58°14.987N	2°55.989W		
46	OTM1 -BE-J6	2320.0	58°14.997N	2°52.820W	58°14.806N	2°50.781W		
47	OTM2 -BE-E9	1462.4	58°15.407N	2°53.733W	58°16.025N	2°53.526W		
48	BE-L7-BE-L8	1249.0	58°15.868N	2°48.322W	58°16.477N	2°48.108W		
49	BE-D9-BE-C9	1462.4	58°15.596N	2°55.777W	58°15.381N	2°56.901W		
50	BE-C9-BE-D10	2084.4	58°15.393N	2°56.904W	58°16.214N	2°55.570W		
*Trial 1	BE-A6-BE-B5	~100m	58°12.704N	2°59.391W	58°12.701N	2°59.461W		
*Trial 2	BE-H11-BE-J12	~100m	58°18.042N	2°50.221W	58°18.122N	2°50.085W		
*Trial 3	BE-J11-BE-J13	~150m	58°18.166N	2°49.490W	58°18.217N	2°49.458W		

#### 2.7.1 – Vessels involved in activity

On behalf of BOWL, Seaway Heavy Lifting will deploy the vessels as detailed below to carry out the aforementioned works between 10.03.2018 – 31.05.2018

CLV Siem Aimery	
<b>General Description and Dimensions:</b>	Length overall 95.3 m Breadth moulded 21.5 m Draft max. 7.2 m
<b>Call Sign:</b>	LATX7
<b>MMSI:</b>	258182000
<b>Onshore Representative:</b>	Majbritt Pauladottir, +47 95 93 60 32, mpa@siemoffshore.com



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CSV Siem Barracuda	
<b>General Description and Dimensions:</b>	Length overall 121 m Breadth moulded 22 m Draft max. 7 m
<b>Call Sign:</b>	5BZQ3
<b>MMSI:</b>	212253000
<b>Onshore Representative:</b>	Auden Oien + 47 38 600 460 Auden.oien@siemoffshore.com



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#### 2.8 Offshore Transmission Module (OTM1) commissioning works

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



Fig 9 – OTM 1.

Nexans Norway AS are carrying out routing, jointing and termination works on EC1 and EC3 which have been pulled into OTM1.

The walk to work vessel Island Crown is on site as the support and accommodation vessel for all works on OTM 1.

The Jack-Up vessel Seajacks Hydra will arrive on site this week. The jack-up will be connected to OTM1 to provide accommodation facilities for OTM1 commissioning. In due course the Seajacks Hydra will be moved to OTM2 as and when it is installed.

Island Crown	
<b>General Description and Dimensions:</b>	Accommodation and 'Walk to Work' vessel L:96.8m / B:20m
<b>Call Sign:</b>	LACO8
<b>MMSI:</b>	257245000
<b>Onshore Representative:</b>	Project Manager Arnt Petter Osnes T +47 70400025 M +47 46829930 arnt@islandoffshore.com

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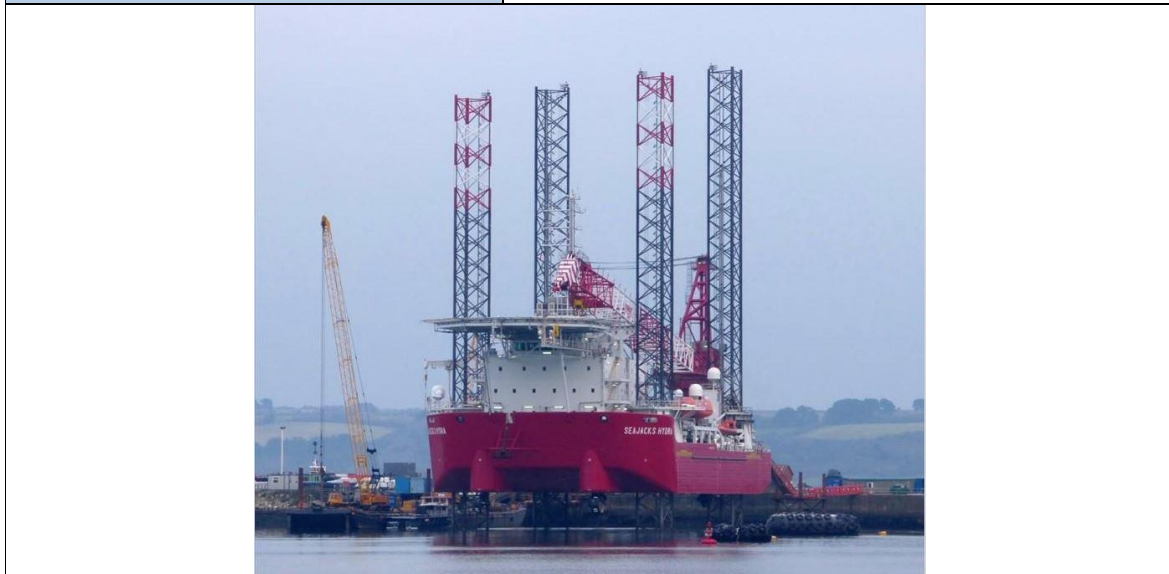
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Seajacks Hydra	
General Description and Dimensions:	Jack-Up Accommodation vessel L:76m / B:36m
Call Sign:	3FEI3
MMSI:	370239000
Onshore Representative:	Beatrice Offshore Windfarm Ltd. mc.bowl@sse.com



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## 2.9 Inspection and recertification of the BOWL site boundary buoys and wave rider buoys.

On behalf of BOWL, Seaway heavy Lifting will conduct the inspection and recertification of the BOWL site boundary buoys and wave rider buoys.

All Cardinal Buoys and Special Mark Buoys have been inspected and re-certified. The three Wave rider buoys will be inspected and re-certified by the multicat C-Odyssey

### 2.9.1 Area of Planned Activity



Fig 10 – BOWL Site buoyage

Buoys to be inspected and recertified. Name	Coordinates (WGS84)	Characteristics
Beatrice OWF, Special Mark No.1	58° 12.76'N 002° 51.58'W	Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light
Beatrice OWF, Special Mark No.2	58° 15.36'N 002° 47.66'W	Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light
Beatrice OWF, Special Mark No.3	58° 18.22'N 002° 54.24'W	Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light
Beatrice OWF, Special Mark No.4	58° 15.34'N 002° 57.80'W	Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light
Beatrice OWF, East Cardinal Mark	58° 18.00'N 002° 45.11'W	East Cardinal shaped topmark, VQ(3) 5s light and AIS
Beatrice OWF, South Cardinal Mark	58° 10.43'N 002° 55.83'W	South Cardinal shaped topmark, VQ(6) +LFI 10s light and AIS
Beatrice OWF, North Cardinal Mark	58° 20.21'N 002° 50.58'W	North Cardinal shaped topmark, QW light and AIS
North Wave Rider Buoy	58° 19.882'N 002° 50.553'W	LED Flashlight Antenna with integrated LED flasher, colour yellow, 5 flashes every 20 s, length of antenna is 35 cm



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East Wave Rider Buoy	58° 18.005'N 002° 45.369'W	LED Flashlight Antenna with integrated LED flasher, colour yellow, 5 flashes every 20 s, length of antenna is 35 cm
West Wave Rider Buoy	58° 12.6'N 003° 00.869'W	LED Flashlight Antenna with integrated LED flasher, colour yellow, 5 flashes every 20 s, length

#### 2.9.2 Activity Description

On behalf of BOWL, Seaway Heavy Lifting using the multicat vessel C-Odyssey to continue with the inspection and recertification of the site wave rider weather buoys.

#### 2.9.3 Vessels Associated with the Activity

C-Odyssey	
<b>General Description and Dimensions:</b>	Multicat workboat L:25.55m / B:11.0m
<b>Call Sign:</b>	2ETW7
<b>MMSI:</b>	235088132
<b>Onshore Representative:</b>	Danny Sprangers Seaway Heavy Lifting Marine Coordination Manager





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

Mariners should take note that the following existing moorings (table 1) in the Moray Firth have been serviced and reinstalled in their current locations (see also chart extract at the foot of this notice).

Table 1

Name	As laid coordinates (WGS84 datum)		Characteristics
1	57° 41.413' N	3° 58.953' W	Subsurface
2	57° 35.133' N	4° 05.891' W	Surface marked (NB50 buoy, red)
3	57° 44.073' N	3° 19.776' W	Surface marked (dhan, 12' aluminium & RADAR reflector)
4	57° 41.357' N	3° 05.547' W	Surface marked (NB50 buoy, red)
17	57° 57.759' N	3° 31.260' W	Subsurface with acoustic release.
42	57° 52.337' N	3° 29.058' W	Subsurface with acoustic release.
45	57° 57.261' N	3° 16.084' W	Subsurface with acoustic release.
89	57° 56.056' N	3° 38.252' W	Subsurface with acoustic release.
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 at the foot of this notice)

All works are being carried out by Moray First Marine Ltd, using the Coral Wind.

A further 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 St., Cromarty, Ross-shire,  
IV11 8YL.

+44 (0)1381 600548.

t.r.barton@abdn.ac.uk

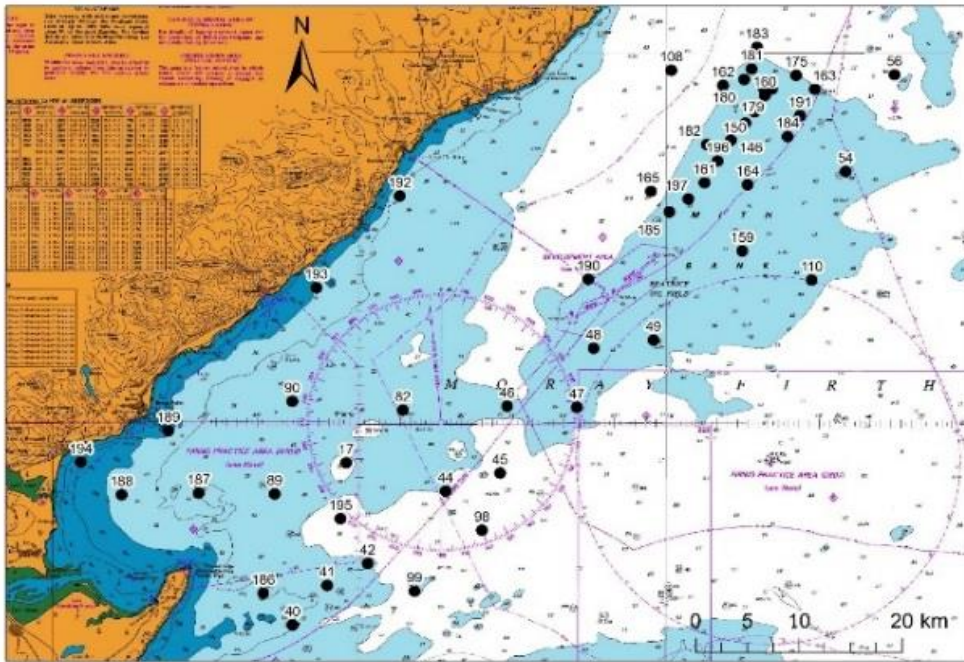


Fig. 11 Examples of equipment which the above moorings support

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### 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.

#### 4. Guard Vessel Deployment

Guard vessels currently on the main construction site are Moremma and Shemarah II. The Artemis and Morning Dawn are guarding the exposed export cable on behalf of Nexans AS. All vessels can be contacted on VHF Ch. 16.

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<b>Project:</b>	Beatrice Offshore Windfarm Guard Vessel Deployment.
<b>Contractor:</b>	SHL & Nexans – SFF Services Ltd.
<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 piling and foundation installation campaigns. Nexans Norway AS have contracted the SFF to provide guard vessels during the export cable installation campaign. These vessels will change regularly.

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](mailto:alex@brownmay.com)

#### 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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1		Smit Sentosa	Anchor Handling Tug	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire AB32 6FE +31 653 997158 E MAIL: dsprangers@shl.nl	ORRX / 205696000 IMO 9662356	51.8 x 15.0 x 6.2m	01.01.2018	OWF
2		Seajacks Hydra	Jack Up Accommodation Vessel	Seajacks	Ian Nicholls Beatrice Offshore Windfarm Ltd. +44 (0)7824141351 ian.nicholls@se.com	3FE13/370239000	62 x 36 m	15.04.2018	OWF & OTTW
3		Smit Seraya	Barge Tow Vessel	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire AB32 6FE +31 653 997158 E MAIL: dsprangers@shl.nl	9V9845 / 566804000 IM 09662368	51.8 x 16 x 6m	01.01.2018	OWF
4		Island Crown	Walk to work OTM commissioning	Stålhaugen 12, 8065 Ulsteinvik, Norway +47 70400000	Project Manager Arnt Petter Osnes T +47 70400025 M +47 46823930 arnt@islandoffshore.com	LAC08/9630535 IMO 257245000	96 x 20 m	01.02.2017	OWF & OTTW
5		Siem Barracuda	Walk to Work Vessel	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire AB32 6FE +31 653 997158 E MAIL: dsprangers@shl.nl	5BZQ3 / 212253000	120 X 22 m	10.03.2018	OWF
6		Siem Aimery	Inter Array Cable Installation Vessel	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire AB32 6FE +31 653 997158 E MAIL: dsprangers@shl.nl	LATX7 / 258182000	95 X 21 m	10.03.2018	OWF
7		Nexans Skagerrak	Export Cable Laying Vessel	Nexans Norway AS Innsporten 9, 0663 Oslo, Norway +47 22 88 61 00	Oyvind Haug BOWL Installation Engineering Manager Mob +47 916 27 674 Office +47 22886509	LCEK / 25723000	99.75 X 35.5 m	09.11.2017	OTTW

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8		Rix Lion	Crew Transfer Vessel / CTV	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/o Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire AB32 6FE +31 653997158 EMAIL: dsprangers@shl.nl	2H0H8 / 235105282	26 x 10 x 2.5m	06.04.2018	OWF
9		Britoil 120	Barge Tow Vessel	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	9V7116 / 564104000	59m x 16m	09.03.2018	OWF
10		Kamarina	Barge Tow Vessel	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	ITW2 / 247278400 IM 09499644	50 x 15m	08.08.2017	OWF
11		Union Sovereign	Anchor Handling Tug	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	ORQW / 205644000 IM 09262742	67.4 x 15.5m	21.08.2017	OWF / OTW
12		Shemarah II	Guard Vessel	Scottish Fishermens Federation (SFF) for Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	MVRR7 / 232007650	27 x 8 m	04.04.2018	OWF
13		Moremma PD135	Guard Vessel	Scottish Fishermens Federation (SFF) for Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	MKHC6 / 235007170	20 x 7m	18.03.2018	OWF
14		DSV Aramis	Dive Support Vessel	Nexans Norway AS Innsporten 9, 0663 Oslo, Norway +47 22 88 61 00	Oyvind Haug BOWL Installation Engineering Manager Mob +47 916 27 674 Office +47 22886509	N/A	15 x 5m	23.03.2018	OTW



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15		DSV Athos	Dive Support Vessel	Nexans Norway AS Innsputen 9, 0663 Oslo, Norway +47 22 88 61 00	Oyvind Haug - BOWL Installation Engineering Manager Mob +47 916 27 674 Office +47 22886509	NA	5 x 2m	23.03.2018	OFTW
16		Seacat Intrepid	Crew Transfer Vessel / CTV	Seacat Services Ltd	Lea Hurst Marine Manager, Seacat Services Ltd 2 Mariners Way, Cowes, Isle of Wight +44(0)1983 475315 lea.hurst@seacatservices.co.uk	2HWU6 / 235107284	27 x 10 x 1.5m	25.09.2017	OWF & OFTW
17		Morning Dawn PD859	Guard Vessel	Scottish Fishermen's Federation (SFF) for Nexans AS	Oyvind Haug BEATRICE Installation Engineering Manager Mob: +47 916 27 674 Office: +47 22 88 65 09	MHEU3 / 232253000	45 x 9 m	21.11.2017	OWF & OFTW
18		GV Artemis INS564	Guard Vessel	Scottish Fishermen's Federation (SFF) for Nexans AS	Oyvind Haug BEATRICE Installation Engineering Manager Mob: +47 916 27 674 Office: +47 22 88 65 09	MVIX5 / 233975000	28 x 8m	01/04/2018	OWF & OFTW
19		Elektron	Cable burial	Nexans Norway AS Innsputen 9, 0663 Oslo, Norway +47 22 88 61 00	Oyvind Haug - BOWL Installation Engineering Manager Mob +47 916 27 674 Office +47 22886509	LADO / 258538000	87 x 18 x 3.5m	05/04/2018	OFTW
20		Fairplay 33	Barge Tow Vessel	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus: Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	V2QG6 / 305356000	48.8 x 14 x 6.2m	15/04/2018	OWF
21		Oleg Strashnov	Heavy Lift Vessel / HLV	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus: Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	5BNL2 / 212905000	183.3 / 47 / 13.5	08.08.2017	OWF & OFTW
22		Bremen Fighter	Barge Tow Vessel	Seaway Heavy Lifting (SHL)	Danny Sprangers (SHL) C/O Subsea 7 East Campus: Arnhall Business Park Westhill, Aberdeenshire, AB32 6FE +31 653997158 Email - dsprangers@shl.nl	V20Y1 / 304742000	48.1 x 14.06 x 6.0m	14.12.2017	OWF