Shaded blocks indicate activity.

What's inside?

New Hazards (p.3)

Area 1 (p.4-5)
1. Survey Activity
2. Deployment of Buoys

Area 2 (p.6)
1. Seabed Activity

Area 3 (p.7-10)
1. Notice to Fishermen
2. Survey Activity
3. Deployment of Buoys

Area 4 (p.11)
1. Seabed Activity

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Area 6 (N.A)
1. N.A

Extra... (p.16)
1. Awareness Charts
2. Fishing Plotter Files
Support

The Kingfisher Bulletin is provided by the Kingfisher Information Service of Seafish, to promote the awareness of offshore hazards to fishing, new structures and zones and conflicting offshore operations. Support for the production of renewable industry information is received from The Crown Estate.

Information

Information contained within the Kingfisher Bulletin comes from a variety of sources, although is in the majority, supplied directly to Kingfisher from the offshore operating industry, or government licensing authorities.

Coordinates within the Kingfisher Bulletin are converted into World Geodetic System 1984 (WGS84) and displayed as degrees, minutes and decimal minutes, to three decimal places (ddd°mm.mmm'). Route or boundary coordinates may be simplified for ease of use.

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<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Position</th>
<th>Issue Date</th>
<th>Contact Details</th>
<th>Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposed end of cut pipeline</td>
<td>60°00.063'N 001°23.757'E</td>
<td>14 Feb 2017</td>
<td><a href="mailto:nick.strachan@uk.bp.com">nick.strachan@uk.bp.com</a></td>
<td></td>
</tr>
<tr>
<td>Chain sections 8-9 links of 76mm chain of</td>
<td>58°30.315'N 002°04.084'W</td>
<td>23 Feb 2017</td>
<td><a href="mailto:Grant.Hastie@subsea7.com">Grant.Hastie@subsea7.com</a></td>
<td></td>
</tr>
<tr>
<td>about 300kg per section</td>
<td>58°31.215'N 002°00.070'W</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Hazard List is a collection of potential fishing hazards supplied to Kingfisher from across all offshore industries. Potential hazards will be listed for 6 months.
Seabed Activity

Beatrice Offshore Windfarm Ltd - Pre-Construction Operations

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).

From February 2017 the Marine Coordination and Construction site office in Wick will be in place and manned. A number of pre-construction activities are planned offshore, before the installation works commence in April 2017.

- Deployment of four special marks and four cardinal buoys to mark the construction site boundary
- Deployment of four wave rider buoys
- Boulder removal and scar plough works

On behalf of BOWL, Seaway Heavy Lifting will deploy the following buoys on or about, the 1st – 15th February 2017 to mark the construction site boundaries of the Beatrice Offshore Wind Farm:

<table>
<thead>
<tr>
<th>Name</th>
<th>Coordinates</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beatrice OWF, Special Mark No.1</td>
<td>58°12.77'N  002°51.59'W</td>
<td>Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light</td>
</tr>
<tr>
<td>Beatrice OWF, Special Mark No.2</td>
<td>58°15.35'N  002°47.64'W</td>
<td>Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light</td>
</tr>
<tr>
<td>Beatrice OWF, Special Mark No.3</td>
<td>58°18.22'N  002°54.24'W</td>
<td>Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light</td>
</tr>
<tr>
<td>Beatrice OWF, Special Mark No.4</td>
<td>58°15.29'N  002°57.80'W</td>
<td>Yellow Special Mark 'X', Yellow Pillar, Fl Y 5s Light</td>
</tr>
<tr>
<td>Beatrice OWF, East Cardinal Mark</td>
<td>58°17.95'N  002°45.00'W</td>
<td>East Cardinal shaped topmark, VQ(3) 5s light and AIS</td>
</tr>
<tr>
<td>Beatrice OWF, South Cardinal Mark</td>
<td>58°10.43'N  002°55.81'W</td>
<td>South Cardinal shaped topmark, VQ(6) +LFl 10s light and AIS</td>
</tr>
<tr>
<td>Beatrice OWF, West Cardinal Mark</td>
<td>58°12.05'N  003°01.30'W</td>
<td>West Cardinal shaped topmark, VQ(9) 10s light and AIS</td>
</tr>
<tr>
<td>Beatrice OWF, North Cardinal Mark</td>
<td>58°20.20'N  002°50.59'W</td>
<td>North Cardinal shaped topmark, QW light and AIS</td>
</tr>
</tbody>
</table>

Vessels: Whalsa Lass Call Sign: 2EZQ4

For further information: Courtney French, Brown and May Marine, Tel: +44 (0)1379 872145 mobile +44(0) 7702 710178

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Seabed Activity

Bluemull Sound (Shetland) – Subsea Tidal Turbine

The purpose of the operation is to conduct construction operations on a subsea tidal energy array in the Bluemull Sound, Shetland.

Multicat vessel MV C-Odyssey (call sign 2ETW7) will conduct offshore and subsea operations. Works will include loading and preparatory work at Belmont Pier and Cullivoe Pier. The work will be conducted from December 2016 to April 2017; operations could take place during day or night. Turbine installation work will be conducted within a 300 m radius of the array site. Works will involve a 4-point mooring extending a maximum radius of 200 m from this location.

Works location: 60°41.916’N 00°58.978’W

Cable Way Points:

<table>
<thead>
<tr>
<th>Turbine</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>60°41.916’N 00°59.018’W</td>
</tr>
<tr>
<td>12</td>
<td>60°41.917’N 00°58.978’W</td>
</tr>
<tr>
<td>13</td>
<td>60°41.931’N 00°59.046’W</td>
</tr>
</tbody>
</table>

One turbine and cable will be installed (T3) during this phase of construction work, and maintenance work will also be conducted on the array. The first two turbines (T1, T2) were deployed earlier in 2016 at the locations indicated below. The minimum clearance of all turbine from MLWS will be 15m.

For further information: Gavin McPherson, Nova Innovation Ltd, Tel: 0131 554 2242 email: gavin.mcpherson@novainnovation.com
Mariners are advised that, in conjunction with Beatrice Offshore Windfarm Limited (BOWL), the University of Aberdeen intends to install seabed mounted scientific equipment moorings in the Moray Firth.

The moorings support sound recording equipment, and acoustic loggers that record echolocation clicks of dolphins and porpoises (see images of devices at the foot of this notice). All the above moorings will be subsurface, consisting of a 50kg weight and a terminated rope riser. The above moorings will not extend more than three metres vertically from the seabed.

Porpoises (see images of devices at the foot of this notice). All the above moorings will be subsurface, consisting of a 50kg weight and a terminated rope riser. The above moorings will not extend more than three metres vertically from the seabed.

Thirty two of the above moorings will also be equipped with an acoustic release or transponder.

Installation will cover the period 15th February to 15th March, and will be conducted by Moray First Marine Ltd., using the vessel “Coral Wind” Call Sign: 2EMX8

For a full details please see website link: www.abdn.ac.uk/lighthouse
Kincardine Offshore Wind Ltd (KOWL) – Met Ocean Equipment Deployed

The purpose of the operation is to install three metocean instruments within the Kincardine Floating Offshore Windfarm site (approximately 12 nm south east of Aberdeen).

The installation vessel (to be confirmed via Notice to Mariners) will conduct the installation of the two metocean instruments (a waverider buoy + guard buoy and a bed mounted current device (ADCP)). Works will include loading and preparatory work from either Montrose/Aberdeen ports. Works will be conducted from or after the 7th March 2017 (planned installation data) and installation will last approximately six months, subject to future extensions.

The metocean equipment installation will be conducted within a 50 m radius of the locations noted below. A single point mooring installed for the Wave rider and a separate mooring system associated guard buoy (which will have a radar reflector for additional visibility). The bottom mounted ADCP (mounted within anti-trawl seabed frame) will be installed at the site and will not have a surface marker buoy.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Coordinates</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave Rider Buoy + Guard Buoy</td>
<td>57°00.418N 01°52.073W</td>
<td>North cardinal shaped topmark, V Q light</td>
</tr>
<tr>
<td>ADCP</td>
<td>57°00.203N 01°51.825W</td>
<td>North cardinal shaped topmark, Q light</td>
</tr>
</tbody>
</table>

Bi-monthly maintenance work will also be undertaken on the instruments and this work will be undertaken during daylight and calm conditions.

For further information: Richard Wakefield, Atkins Ltd, Tel 0141 220 2437 e-mail Richard.wakefield@atkinsglobal.com

Blyth Offshore Demonstrator Project – Aids to Navigation

It is a requirement of the authorities that the BOD offshore site is marked with the appropriate Aids to Navigation, in this respect the work listed below is due to be carried out as described below.

On behalf of BODL, Trinity House have successfully deployed the Cardinal Buoys

As with other pre-construction activities, vessels are requested to keep safe distance of at least 500m during these operations.

For further information: Simon Prince, SMC Ltd Tel: +44 (0)7920 273866 email: simonp@smchse.com
The seabed activity around all structures (Foundations and offshore substation jacket) contains a number of hazards in close proximity. These hazards can be a combination of:

- Exposed cables
- Scour Protection
- Rock Bags

All Mariners are requested to remain a minimum safe distance of 50 meters from all structures within Rampion Offshore Wind Farm.

The Export cable ROV Survey works from Location KP1 to K11 on the export route will commence on approximately on the 20th of February and is due to last approximately 4 weeks' weather permitting. Vessel MV Cerys Line – OWHJ2

**Revised Export Cable shallow buried exposed sections of cable**

Due to either seabed conditions, or to enable jointing/protection works planned for later in 2017, some sections of the export cables have been either shallow buried or laid exposed on the seabed. Rock bags have been placed above some parts of these exposed/shallow buried cable sections to stabilise them until all construction works are complete.

The shallow buried/exposed sections of cable and rock bags represent a significant hazard to fishing vessels and their gear (if fishing gear is deployed over them) and any vessels anchoring over them. All commercial/recreational fishing vessels deploying any form of demersal fishing gears (trawls/shellfish dredgers etc.) or fixed fishing gears (pots, traps, nets etc) should ensure that:

- All such Gears DO NOT come within 500m of the exposed/shallow buried cables (as indicated above)
- Mobile or towed demersal fishing gears (trawls, shellfish dredgers etc) gears DO NOT come within the vicinity of the cables in locations outside of these defined hazard areas.

Furthermore, interaction between fishing gear (OR anchors) and the export cables could also cause damage to the export cables themselves. All mariners are requested NOT to anchor within 100m of the export cables and to make themselves aware of their obligations for conducting activities over buried cable.

**Hazardous Areas:**

<table>
<thead>
<tr>
<th>Hazard Area 1</th>
<th>Hazard Area 2</th>
<th>Hazard Area 3</th>
<th>Hazard Area 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>50°48.116’N 00°20.330’W</td>
<td>50°44.965’N 00°18.486’W</td>
<td>50°43.711’N 00°18.580W</td>
<td>50°42.179’N 00°15.625’W</td>
</tr>
<tr>
<td>50°48.565’N 00°19.850’W</td>
<td>50°44.237’N 00°18.250’W</td>
<td>50°42.852’N 00°17.117’W</td>
<td>50°41.626’N 00°14.020’W</td>
</tr>
<tr>
<td>50°48.456’N 00°19.349’W</td>
<td>50°44.196’N 00°19.081’W</td>
<td>50°42.482’N 00°17.677’W</td>
<td>50°41.129’N 00°15.441’W</td>
</tr>
<tr>
<td>50°47.877’N 00°18.820’W</td>
<td>50°44.882’N 00°19.331’W</td>
<td>50°43.179’N 00°18.919’W</td>
<td>50°41.086’N 00°16.422’W</td>
</tr>
<tr>
<td>50°47.425’N 00°18.545’W</td>
<td>50°43.323’N 00°18.965’W</td>
<td>50°43.23’N 00°19.377’W</td>
<td>50°41.847’N 00°20.266’W</td>
</tr>
</tbody>
</table>

- All such Gears DO NOT come within 500m of the exposed/shallow buried cables (as indicated above)
- Mobile or towed demersal fishing gears (trawls, shellfish dredgers etc) gears DO NOT come within the vicinity of the cables in locations outside of these defined hazard areas.

For further information: Gordon Bain (Eon Marine Coordination) +44(0)7787241442 email leadmc@rampionoffshore.com
http://www.kis-orca.eu/downloads# WJaYU1vUk

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7 of 16
Notice to Fishermen

First Published: 20 October 2016 | Latest Update: 28 November 2016

Race Bank Offshore Wind Farm – Entire Fishing Clearance Zone Closed

The Fishing Clearance Zone shown in the below chart remains closed to all forms of fishing, and is expected to remain closed until February 2018.

The deployment of any fishing gear, or fishing anywhere within, the Fishing Clearance Zone is strictly prohibited. Fishing vessels are able to transit through the Fishing Clearance Zone. However, all fishing vessels must maintain a safe distance from, and not disrupt, any vessel engaged in, or supporting, Race Bank construction operations.

CONSTRUCTION ACTIVITIES CONTINUE AT THE RACE BANK OFFSHORE WIND FARM AND ALONG THE ENTIRE LENGTH OF THE EXPORT CABLE

All wind turbine foundations have been installed, one of two offshore substations has been installed and the met mast decommissioning works were completed last week. Array cable installation has paused and will continue next year. Export cable burial works are continuing. The Havilla Phoenix is currently installing export cable. The Taccola is dredging cable joints along the export cable. They both require a wide berth.

Primary activities over the next month include:
1. Wind turbine transition piece installation – Neptune
2. Export cable burial - Havilla Phoenix
3. Export cable joint burial at KP8 – Taccola
4. Export cable joint burial at KP27 – Taccola

The Entire Fishing Clearance Zone will be CLOSED to the fishing industry

For further information: Hywel Roberts, DONG Energy, Tel: +44(0)20 7811 5486 email: hywro@dongenergy.co.uk
Website: http://www.dongenergy.com/en/Search?&k=race%20bank

Seabed Activity

First Published: 17 November 2016 | Latest Update: 09 February 2017

Race Bank Offshore Wind Farm – Unlit Monopiles

Race Bank Offshore Wind Farm project, and reported under Marine Licence (L/2012/00217/16), All lighting frames have now been recovered from the seabed.

All remaining monopile only positions (B02 and C03) are now lit with an upgraded lighting frame until the remaining two transition pieces are installed in May 2017.

For further information: Rebecca Goff, DONG, Tel: 0044 776 170914 rebecca@dongenergy.co.uk

Area 3

Greater Gabbard Offshore Wind Farm – Met Mast Decommissioning

Jack-up Barge operations will commence on Thursday 16th February 2017 on the Greater Gabbard offshore windfarm. The work is expected to last until 16th March 2017. The following assets will be accessed in the following order

<table>
<thead>
<tr>
<th>Met Mast</th>
<th>Co-ordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGMMZ</td>
<td>50°36.605'N 01°55.326'E</td>
</tr>
<tr>
<td>IGMMX</td>
<td>50°31.561'N 01°53.882'E</td>
</tr>
</tbody>
</table>

A 500 meters exclusion zone will be in force around the Jack-up barge WIND PIONEER Call Sign: OWLA2, at all times, If you need to approach the barge please contact them on VHF ch16.

Vessels: WIND PIONEER Call Sign: OWLA2, Dian Kingdom Call Sign: PCTG

For further information: Moray Offshore Renewables UK Ltd, Email: john.yorston@edpr.com, Tel: 0131 556 7602 / 07557 018980

Area 3

Greater Gabbard Offshore Wind Farm – Met Mast Decommissioning

Jack-up Barge operations will commence on Thursday 16th February 2017 on the Greater Gabbard offshore windfarm. The work is expected to last until 16th March 2017. The following assets will be accessed in the following order

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<th>Met Mast</th>
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</thead>
<tbody>
<tr>
<td>IGMMZ</td>
<td>50°36.605'N 01°55.326'E</td>
</tr>
<tr>
<td>IGMMX</td>
<td>50°31.561'N 01°53.882'E</td>
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Vessels: WIND PIONEER Call Sign: OWLA2, Dian Kingdom Call Sign: PCTG

For further information: Moray Offshore Renewables UK Ltd, Email: john.yorston@edpr.com, Tel: 0131 556 7602 / 07557 018980

Seabed Activity

First Published: 17 November 2016 | Latest Update: 09 February 2017

Race Bank Offshore Wind Farm – Unit Monopiles

Race Bank Offshore Wind Farm project, and reported under Marine Licence (L/2012/00217/16), All lighting frames have now been recovered from the seabed.

All remaining monopile only positions (B02 and C03) are now lit with an upgraded lighting frame until the remaining two transition pieces are installed in May 2017.

For further information: Rebecca Goff, DONG, Tel: 0044 776 170914 rebecca@dongenergy.co.uk

Stay up to date
Always ensure you have the latest Kingfisher Bulletin and offshore fishing plotter data.

t: +44 (0)1472 252 307 e: kingfisher@seafish.co.uk i: @KingfisherInfo w: www.seafishcharts.org
**Galloper Offshore Wind Farm—Monopile Foundation & Transition Installation**

Please be advised that from circa 15th Feb 2017 the MV Island Sprit will be operating on the Galloper Offshore Wind Farm until further notice. The MV Island Sprit shall be supporting foundation installation completion works operating within the Galloper Offshore Wind Farm, Northern and Southern Array area.

MV Island Sprit shall be operating in Dynamic Positioning mode and will be restricted in ability to manoeuvre. The vessel shall be displaying the correct day shapes / night lights for this operation.

From circa 20th Feb 2017 the Dart Fisher will be operating on the Galloper Offshore Wind Farm until further notice. The Dart Fisher will be carrying out Crew Transfer Operations as well as Diving and ROV Support, as and when required.

The vessel shall have a statutory 500m safety radius in place and can be contacted on VHF 16 when on location.

### Activities planned for the next 7 days:

- Glomar Advance and Rachael S to continue Guard Duties at the Galloper Wind Farm
- Glomar Avior to return to site to relieve Glomar Advance, continue with Guard duties
- Innovation to continue with foundation installation (operating from Netherlands).
- Aquata (CTV) on site to support foundation installation works (operating from Lowestoft).
- Severn Provider to continue supporting the project with emergency response cover and generator refuelling (operating from Lowestoft).

Please be advised that from circa 3rd March, Smit Sentosa will be conducting PLGR (Pre Lay Grapnel Run) Works, Carrying out Debris Grapnel runs of the proposed export cable installation route for export cable 2 between KP 6.0 to OSP area.

An Additional shallow draft vessel is also expected to carry out the same operation within the near shore area between KP 0 to KP 6.0. The name of the vessel is unknown but will be advised once known.

Both Vessels shall have a statutory 500m Safety zone. Both vessels can be contacted on VHF CH16 when on Location.

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**Kingfisher Awareness Flyer: Galloper Offshore Wind Farm**

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**London Array Offshore Wind Farm – Wave Buoy Deployment**

Please be advised that an additional wave rider buoy has been deployed within the area of London Array Offshore Wind Farm, designation – Long Sand Middle

### New Wave Buoy

<table>
<thead>
<tr>
<th>Identity</th>
<th>Coordinates</th>
<th>Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Sand (Middle)</td>
<td>51°40.828'N  01°31.177'E</td>
<td>Fl (5) Y 20s 2nm</td>
</tr>
</tbody>
</table>

Description of wave rider buoy: Yellow spherical buoy, transparent top dome with solar panels and flashing light.

### Existing Wave Buoy

<table>
<thead>
<tr>
<th>Identity</th>
<th>Coordinates</th>
<th>Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knock Deep (North)</td>
<td>51°37.064'N  01°30.364'E</td>
<td>Fl (5) Y 20s 2nm</td>
</tr>
</tbody>
</table>

The Knock Deep North wave rider buoy is protected by 2 guard buoys stationed approximately 50 - 100 meters to the North and South.

<table>
<thead>
<tr>
<th>Identity</th>
<th>Coordinates</th>
<th>Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guard Buoy (North)</td>
<td>51°37.105'N  01°30.467'E</td>
<td>Fl (5) Y 20s 2nm</td>
</tr>
<tr>
<td>Guard Buoy (South)</td>
<td>51°37.058'N  01°30.307'E</td>
<td>Fl (5) Y 20s 2nm</td>
</tr>
</tbody>
</table>

Description of wave rider buoy: Yellow spherical buoy, transparent top dome with solar panels and flashing light. Description of guard buoys: Yellow spar with flashing light and radar reflector.
Foulgers Gat Safe passage marker buoys

<table>
<thead>
<tr>
<th>Identity</th>
<th>Coordinates</th>
<th>Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Sand Inner</td>
<td>51°38.770'N 01°25.430'E</td>
<td>Iso. 2 sec</td>
</tr>
<tr>
<td>Long Sand Outer</td>
<td>51°34.610'N 01°28.330'E</td>
<td>Iso. 2 sec</td>
</tr>
<tr>
<td>Long Sand Middle</td>
<td>51°35.600'N 01°26.450'E</td>
<td>Iso. 5 sec</td>
</tr>
</tbody>
</table>

Characteristics (all buoys) Spherical with Red and White vertical stripes

For further information: Duty Marine Coordinator, Tel: +44 1843 855 795  email: marinecoordinators@londonarray.com

Seabed Activity

### Dudgeon Offshore Wind Farm – Construction Works

Construction activities are in progress at the Dudgeon Offshore Wind Farm and Export Cable Corridor.

Wind turbine generators will be installed in the first half of 2017. All construction work is planned to be completed in late 2017.

#### Service Operation Vessel

The ESVAGT NJORD will be performing preparation support for the operation of the wind farm and will be in regular transit between the Dudgeon site and Great Yarmouth.

#### Wind Turbine Generator Installation

The Sea Challenger will perform installation of the wind turbine generators (WTG) from January 2017 until Q3-2017. WTG installation will be performed at the following locations in February – February:

- K02, K05, T01; T02; T03; T04; T05; J01; J02; J03; J04; J05; F01; F02; F03; F04; F05; F06

#### Accommodation Vessel

The VESTLAND CYGNUS will be on location from December 2016 to Q3-2017 as accommodation vessel for Turbine commissioning.

#### Commissioning Activities

For the commissioning work there are several Crew Transfers Vessels operating in the wind farm area on a daily basis. This activity is ongoing and will continue until commissioning is completed in Q4 2017.

#### Rock Installation

A rock installation campaign for scour protection of foundations will be ongoing in the period early May until mid-June. Vessel spread; Rock installation vessel Van Oord – HAM 602, a survey vessel TBN, and 4 bulk carriers for rock supply. The three intended anchor locations for the rock transfer from the bulk carriers are identified in the plot later in this notice.

#### Guard Vessel

The RESOLUTE or the ADVENTURE will be present at the site to safe guard the wind farm area.

### Mark

<table>
<thead>
<tr>
<th>Name</th>
<th>Coordinates</th>
<th>Status</th>
<th>Flash Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Cardinal</td>
<td>N-DOW</td>
<td>53°19.102'N 01°20.392'E</td>
<td>temporary</td>
</tr>
<tr>
<td>Special Mark</td>
<td>DOW-SM - N</td>
<td>53°17.631'N 01°23.918'E</td>
<td>temporary</td>
</tr>
<tr>
<td>North Cardinal</td>
<td>NE - DOW</td>
<td>53°16.277'N 01°26.691'E</td>
<td>temporary</td>
</tr>
<tr>
<td>East Cardinal</td>
<td>E-DOW</td>
<td>53°14.320'N 01°27.123'E</td>
<td>temporary</td>
</tr>
<tr>
<td>South Cardinal</td>
<td>S-DUDGEON</td>
<td>53°12.470'N 01°25.617'E</td>
<td>Permanent</td>
</tr>
<tr>
<td>Special Mark</td>
<td>DOW-SM - S</td>
<td>53°14.012'N 01°22.132'E</td>
<td>temporary</td>
</tr>
<tr>
<td>South Cardinal</td>
<td>SW - DOW</td>
<td>53°15.451'N 01°19.188'E</td>
<td>temporary</td>
</tr>
</tbody>
</table>

For further information: Stig J. Andersen, Statoil ASA  Tel: +47 95243448  email: stja@statoil.com
North Coast of Cornwall – Wave Hub 2017 safety Information Update

Please be advised that all notice to mariners remaining in force for the Wave Hub site and subsea cable have been recently reviewed and updated and are available at: http://www.wavehub.co.uk/notice-to-mariners

These include:

- Wave Hub Equipment Schedule
- Seatricity ‘Oceanus 2’ Trials
- Wave Hub Subsea Cable System
- Wave Hub Aids to Navigation
- Wave Hub Wave Data Buoy

Major changes or new activity will be advised through further notices as usual.

Mariners operating in the vicinity are advised to exercise caution. Please note that all live Wave Hub notices must be assimilated to get a full understanding of risk associated with activity and infrastructure on site. The Wave Hub Notice to Mariners page will always hold the latest information.

For further information: Julius Besterman, Wave Hub Ltd, Tel: 01736 800291  email: Julius.besterman@wavehub.co.uk
Seabed Activity

Barrow – Walney 1&2 – West of Duddon Sands - Ormonde

A reminder of the mailbox drop facility that has been set up enabling any fishermen with static gear deployed either inside the perimeter of or in the close proximity of the above mentioned wind farms to report the positions of the gear to the operations management team is still operational, this information will subsequently be relayed to the ctvs.

Please use this facility.

Please also note that any mariners, including fishermen, who decide to navigate inside the Wind Farm do so at their own risk and they are advised to give a wide berth to the Sub-Station and Wind Turbines and familiarize themselves with the latest navigation or survey information issued about the Wind Farm before doing so.

FISHING GEAR INSIDE THE WIND FARM

Any fishermen setting pots within the Perimeter of the Wind Farm should make sure that their gear is properly marked and weighted and is clear of any of the Turbines and outside of the recommended advisory safety zone of 50 meters around each Turbine or Sub-Station.

Any unmarked gear will be classed as being illegal and will be reported to the authorities with a request that it is removed to the shore.

Please contact the E-mail address WF_FishingActivities@dongenergy.co.uk with the position/s of the gear and also a contact mobile telephone number which can then be passed on to the service craft so that they can monitor it and also keep clear of it when carrying out their maintenance routines also arrangements can be made if there is a requirement to move the gear to facilitate any maintenance activity.

If any gear is found to be inside the 50 meter Advisory Safety Zone the owner will be contacted and asked to re-site it in order to stop it fouling on the J-Tubes or on the underwater fittings of the Turbine.

You are advised to lay your gear up and down the lanes rather than across the Inter-Array or Infield Cables and are advised to use weights rather than anchors to avoid causing any damage to buried cables.

The MCA have requested me to add that they provide a leaflet, free of charge, with the recommended method of marking gear.

For further information: Tom Watson, Tel: 01253 875565, Mob: 07903 173 624

Seabed Activity

Burbo Bank 2 (Extension) Wind Farm – Monopiles & Transition Pieces

All of the Wind Turbine generators as well as the Sub-Station have been installed and all of the Inter-Array (Infield) Cables as well as the Export Cable have been laid.

Turbine commissioning work is ongoing with CTV’s and other service craft transiting technicians out to the site from the Cammel Lairds shipyard on a regular basis as weather and conditions permit.

Cardinal and Special Marker Buoys are marking the site of the Burbo Bank 2 (Extension) Wind Farm and as this area is still recognised as a construction site all mariners are requested and advised to mark the positions of these Buoys on their charts/plotters.

The site Guard Vessel ‘MCS Kaver’ is on station at the Wind Farm site and will conduct 6 hourly Securite broadcasts informing Mariners of site relevant safety information and these will be announced on VHF Channel 16, the broadcast will take place on VHF channel 67 at 06:00, 12:00, 18:00 & 00:00.

For further information: Tom Watson: Tel: 01253 875565, Mob: 07903 173 624
Mariners are advised that there is presently an unlit buoy to the south of the North Hoyle windfarm.

The buoy is an Acoustic Wave and Current Profiler (AWAC) and is described as a yellow special mark with a yellow solitaire top mark. It is in a depth of 6.2m (LAT) at the following location:

- AWAC Buoy (unlit): 53° 24.409’N 003° 25.054’W

Details of this buoy are specified in a Notice to Mariners that can be downloaded here.

For further information: Jim Andrews, Fishery Liaison Officer, Tel: +44(0)7908 225865

Mariners are advised that the maintenance operations within the Gwynt y Môr Offshore Wind Farm that had been scheduled for January 2017 are now due to be carried out during early February 2017. The revised schedule and the scope of this work is set out in Notice to Mariners that can be downloaded here.

The jack up vessel Wind Server is due to be carrying out maintenance work close to wind turbines C10D and K1M within the Gwynt y Môr Offshore Windfarm area. The location of these two turbines can be seen on the Kingfisher Awareness Chart.

The turbines are located at the following positions:
- Turbine C10D: 53°28.785’N 003°31.318’W
- Turbine K1M: 53°26.385’N 003°40.189’W

The start date for this work is expected to be between the 3rd and 6th February 2017 with an expected duration of 8-10 days. Wind Server is a 79.3 m jack up vessel with a red hull and white superstructure (Call sign OWLB2)

When at the specified locations the vessel will be restricted in the ability to manoeuvre and other vessels are asked to observe a 500m exclusion zone at all times.

The vessel will monitor VHF Channel 16 at all times.

For further information: Jim Andrews, Fishery Liaison Officer, Tel: +44(0)7908 225865

The component exchange at Turbine positions D01 has now been carried out and the self-propelled jack-up ‘MPI Resolution’ has left the site.

For more information on the boundaries of the 50 metre Advisory Safety Zones, ensure that you have the latest KIS-ORCA information installed. This can be downloaded from www.KIS-ORCA.eu

The buoy mentioned below has been lost in the recent bad weather and the underwater hazard is no longer marked.

All mariners are requested and advised to note the position of the hazard, as the position of Turbine A1, mark it on their charts/plotters and take extra precaution to keep clear when in the area and note that this hazard is protruding approx. 2 / 3 meters above the seabed.

A new buoy will be placed in position as soon as practical.

Position of Turbine A1: 54°46.3N 003°42.1W

For further information: Tom Watson, Tel: 01253 875565, Mob: 07903 173 624

13 of 16
Deployment of Buoys

West of Duddon Sands Wind Farm – Cable Spans & FLiDAR Buoys

Cable Spans
A survey has identified two areas where there is the potential of Exposed/Free-Span Cable either side of the crossing of the Barrow Wind Farm cable. There is the potential that both of the West of Duddon Sands cables are exposed in the area immediately to the East and West of the Barrow Wind Farm Export Cable Crossing.

Position Of Cable Crossing
54°00.30’N 002°57.90’W

The two expanses of potential exposure have been identified between the following co-ordinates:

East of the Barrow cable
Northern span: 54°00.272’N 002°58.182’W to 54°00.279’N 002°58.046’W
Southern span: 54°00.250’N 002°58.172’W to 54°00.255’N 002°58.075’W

West of the Barrow cable
Northern span: 54°00.295’N 002°57.727’W to 54°00.323’N 002°57.409’W
Southern span: 54°00.273’N 002°57.763’W to 54°00.296’N 002°57.453’W

FLiDAR Buoys
DONG Energy will shortly be deploying two FLiDAR BUOYS, each with an associated marker or pendant buoy, and one WAVE BUOY in the area just outside of the NW corner of the WEST of DUDDON SANDS WIND FARM, opposite the Met Mast.

The Buoys are scheduled to be deployed on or around Monday 9th January 2017 and will remain in position for a period of approx. six months.

Please mark these positions on your charts/plotters and keep clear

Positions of FLiDAR buoys

<table>
<thead>
<tr>
<th>Name</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLiDAR 1</td>
<td>54°00.061’N 003°33.600’W</td>
</tr>
<tr>
<td>FLiDAR 2</td>
<td>54°00.178’N 003°33.618’W</td>
</tr>
</tbody>
</table>

Seabed: The mooring system for each floating LIDARs will consist of cast iron sinkers of approx. 4T weight and approx. 80m of mooring chain with various shackles and swivels. Some of the chain will lie on the seabed, the proportion of chain on the seabed will be dependent and drift and tide

Surface: Each buoy will have a surface marker, or Pendant Buoy, denoting the position of the 2nd 4T seabed sinker weight.

Positions of marker or pendant buoys

<table>
<thead>
<tr>
<th>Name</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennant 1</td>
<td>54°00.095’N 003°33.499’W</td>
</tr>
<tr>
<td>Pennant 2</td>
<td>54°00.245’N 003°33.390’W</td>
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</table>

Position of wave buoy

<table>
<thead>
<tr>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>54°00.021’N 003°33.425’W</td>
</tr>
</tbody>
</table>

Seabed: Mooring: The mooring connection to the buoy is made with a 12mm stainless steel swivel. Ultrahigh molecular weight polyethylene line (UHMWPE) is used for the mooring line and the mooring is anchored to the ground using up to 600kg of heavy chain.

For further information: Tom Watson, Tel: 01253 875565, Mob: 07903 173 624
Seabed Activity

Walney Extension Wind Farm – Buoy Deployment & Grapnel Run

Grapnel Runs
As part of the preparations for construction a pre-lay grapnel run along the Infield or Inter-Array Cable Routes within both sections of the Wind Farm as well as along the whole length of the Two Export Cable Routes is scheduled to begin in early February at a date to be confirmed.

The grapnel run will be carried out by the 27.7m Briggs Marine Multi-Cat Work Boat ‘Forth Warrior’ and depending on weather and conditions as well as the requirement for any boulder or debris removal can be expected to last several weeks.

During Pre-Lay Grapnel operations ‘Forth Warrior’ will keep a listening watch on VHF Channels 16 and 12 and can be contacted for information relating to vessel movement only.

Buys
A series of Cardinal and Special Marker Buoys, 10 in total, are to be deployed to mark what will become the construction area, or site, of the proposed Walney Offshore Wind Farm Extension (WOWO3+4)

All mariners should take note that once all the buoys have been laid this area will then become a construction site and unless there are matters relating to their own safety or the safety of others they should keep clear and not enter until the Wind Farm has been commissioned with the Buoys removed and you have been informed.

For further information: Tom Watson: Tel: 01253 875565, Mob: 07903 173 624
### Local Awareness Charts

<table>
<thead>
<tr>
<th>Chart</th>
<th>Area</th>
<th>Location</th>
<th>Turbines</th>
<th>Developer</th>
<th>Completed</th>
<th>Link</th>
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<tbody>
<tr>
<td>Barrow</td>
<td>5</td>
<td>7km dudgeon Island</td>
<td>30</td>
<td>DONG Energy</td>
<td>1 Jul 2008</td>
<td>Download</td>
</tr>
<tr>
<td>Burbo Bank</td>
<td>5</td>
<td>5.2km Crosby</td>
<td>25</td>
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<tr>
<td>Galloper</td>
<td>3</td>
<td>27km off Suffolk Coast</td>
<td>56</td>
<td>Galloper Wind Farm Ltd</td>
<td>-</td>
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<tr>
<td>Greater Gabbard</td>
<td>3</td>
<td>26km off Orford, Suffolk</td>
<td>140</td>
<td>SSE &amp; RWE Npower Ren</td>
<td>7 Sept 2012</td>
<td>Download</td>
</tr>
<tr>
<td>Gwynt y Mor</td>
<td>5</td>
<td>13km off N Wales Cat</td>
<td>160</td>
<td>RWE Innogy / SWM / Siemens</td>
<td>18 Jun 2015</td>
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<td>Gunfleet Sands 1, 2 &amp; 3</td>
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<td>8.5km off Clacton-On-S</td>
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<td>Humber Gateway</td>
<td>3</td>
<td>8km off Holdmss Cat</td>
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<td>E.ON UK</td>
<td>5 Jun 2015</td>
<td>Download</td>
</tr>
<tr>
<td>Kentish Flats</td>
<td>3</td>
<td>9km off Whitstable</td>
<td>30</td>
<td>Vattenfall</td>
<td>1 Oct 2015</td>
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<tr>
<td>Lincs</td>
<td>3</td>
<td>8km off Skegness</td>
<td>75</td>
<td>Centrica / DONG / Siemens</td>
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<tr>
<td>Lynn and Inner Dowsing</td>
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<td>5km off Skegness</td>
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<td>Centrica</td>
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<tr>
<td>North Hoyle</td>
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<td>7.5km off Prestatyn</td>
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<td>Sheringham, Grt Wash</td>
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<tr>
<td>Teesside</td>
<td>3</td>
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<td>Thanet</td>
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<td>Walney 1 &amp; 2</td>
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<td>West of Duddon Sands</td>
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<td>Scottish Power / DONG Energy</td>
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<td>Westernmost Rough</td>
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<td>25km north of Spurn P</td>
<td>35</td>
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### National Awareness Charts

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<tr>
<td>North West Approaches &amp; North Sea North</td>
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<tr>
<td>North Sea Central</td>
<td>Download</td>
</tr>
<tr>
<td>North Sea South</td>
<td>Download</td>
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<tr>
<td>English Channel</td>
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<tr>
<td>South Western Approaches</td>
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### National Fishing Plotter Files

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