



REPORT



Hornsea Project One Offshore Windfarm

Weekly Notice of Operations

For Week Commencing	3 rd December 2018
Notice Number	64
Issue Date:	3 rd December 2018

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1. Ørsted Marine & Helicopter Co-ordination Centre

Routine enquiries (24 hours)	0044 (0) 207 811 1171
Emergency number (24 hours)	0044 (0) 207 811 1170
Email	MHCC_HOW01_ADM@orsted.co.uk

2. The UK main ports supporting current operations

Grimsby - Crew Transfer Vessels (CTV), light logistics (personnel, tools and equipment) & main vessel port logistics

3. Safety Information

All vessels not involved in construction activities are requested to keep 500m distance from construction and dive vessels whilst transiting the area

All vessels should proceed with caution whilst navigating and/or working in the area and be aware of the statutory 50m safety zone around each fixed asset.

The Self-Propelled Jack Up Barge (JUB) GMS Endeavour is jacked up at Z13 and requires a 500m exclusion zone. The Self-Propelled Jack Up Barge (JUB) GMS Evolution is jacked up at Z01 and requires a 500m exclusion zone.

Z01 "RCS" is now installed and in position 52°32.11'N 00°57.07'E.

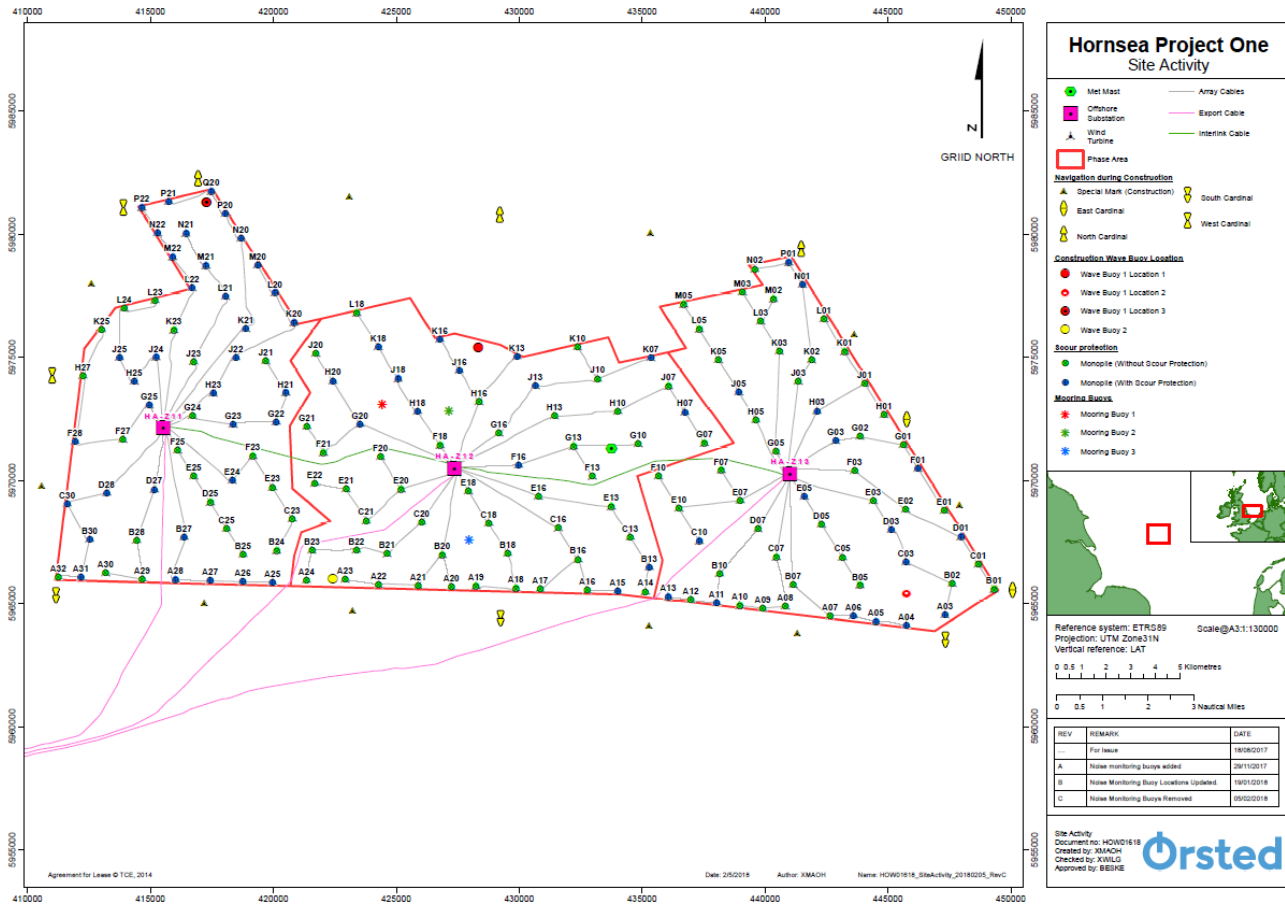
Installation vessels Innovation and Sea Installer on site to continue monopile and TP installation.

PUXO in position 53° 54' 26.6750" N, 2° 08' 18.2997" E – String J01 – H01

Discrepancies identified between coordinates should be questioned immediately to Ørsted. Information is supplied on a 'not for navigation' basis. All coordinates are WGS84 unless otherwise stated.

4. Deployed navigation aids and buoys

The offshore site boundary for HOW01 is shown as below, and will be marked by standard IALA navigation marks. All buoys have been deployed as per below tables.



4.1 Demarcation Buoys

Station	Coordinates	Broadcast Details
HOW01 DELTA	53° 49.170' N 002° 06.502' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT:FL Y 5S
HOW01 ECHO	53° 49.283' N 002° 01.003' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT:FL Y 5S
HOW01 ALPHA	53° 57.903' N 002° 00.863' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S
HOW01 BRAVO	53° 55.734' N 002° 08.474' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S
HOW01 CHARLIE	53° 52.021' N 002° 12.474' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S

HOW01 FOXTROT	53° 49.510' N 001° 50.006' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S
HOW01 GOLF	53° 49.623' N 001° 44.506' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S
HOW01 HOTEL	53° 52.133' N 001° 38.400' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S
HOW01 INDIA	53° 56.589' N 001° 40.109' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S
HOW01 JULIET	53° 58.586' N 001° 49.624' E	SPECIAL MARK, YELLOW PILLAR, YELLOW CROSS LIGHT: FL Y 5S
HOW01 WEST	53° 54.551' N 001° 38.708' E	WEST CARDINAL YELLOW BLACK YELLOW PILLAR, Q (9) 15s, 2 CONES APEX INWARDS
HOW01 WEST NORTH WEST	53° 58.263' N 001° 41.238' E	WEST CARDINAL YELLOW BLACK YELLOW PILLAR, VQ (9) 10s, 2 CONES APEX INWARDS
HOW01 SOUTH	53° 49.396' N 001° 55.504' E	SOUTH CARDINAL YELLOW OVER BLACK PILLAR: 2 CONES APEX DOWNWARDS LIGHT: Q (6) + 1L FL 15s
HOW01 SOUTH WEST	53° 49.500' N 001° 39.007' E	SOUTH CARDINAL YELLOW OVER BLACK PILLAR: 2 CONES APEX DOWNWARDS LIGHT: VQ (6) + 1L FL 10s
HOW01 NORTH WEST	53° 58.928' N 001° 44.004' E	NORTH CARDINAL, BLACK OVER YELLOW PILLAR, VQ, TOPMARK; 2 CONES APEX UPWARDS
HOW01 NORTH	53° 58.244' N 001° 55.244' E	NORTH CARDINAL, BLACK OVER YELLOW PILLAR, Q, TOPMARK; 2 CONES APEX UPWARDS
HOW01 NORTH EAST	53° 57.590' N 002° 06.473' E	NORTH CARDINAL, BLACK OVER YELLOW PILLAR, VQ, 2 CONES APEX UPWARDS
HOW01 EAST	53° 53.878' N 002° 10.474' E	EAST CARDINAL BLACK YELLOW BLACK PILLAR, Q(3) 10s, 2 CONES APEX OUTWARDS
HOW01 SOUTH EAST	53° 50.165' N 002° 14.470' E	EAST CARDINAL BLACK YELLOW BLACK PILLAR, VQ(3) 5s, 2 CONES APEX OUTWARDS
HOW01 SOUTH SOUTH EAST	53° 49.056' N 002° 12.000' E	SOUTH CARDINAL YELLOW OVER BLACK PILLAR, VQ (6) + L fl 10s, 2 CONES APEX DOWNWARDS

4.2 RCS Site

HOW01 RCS S	53°37.385'N 000°56.164'E	South Cardinal VQ (6) +LFL 10s (White) Top Mark: South Day Mark: Yellow Black Racon: Tango REMOVED UNTIL FURTHER NOTICE
HOW01 RCS E	53°37.586'N 000°56.619'E	East Cardinal VQ (3) 5s (White) Top Mark: East Day Mark: Black Yellow Black REMOVED UNTIL FURTHER NOTICE
HOW01 RCS N	53°37.925'N 000°56.164'E	North Cardinal VQ (White) Top Mark: North Day Mark: Black Yellow
HOW01 RCS W	53°37.754'N 000°55.689'E	West Cardinal VQ (9) 10s (White) Top Mark: West Day Mark: Yellow Black Yellow

4.3 Mooring buoys

HOW01 MOORING 3	53° 51.107' N 001° 54.279' E	SPECIAL MARK, YELLOW PILLAR, NO TOPMARK LIGHT: FL Y 5S
HOW01 MOORING 2	53° 53.915' N 001° 53.457' E	SPECIAL MARK, YELLOW PILLAR, NO TOPMARK LIGHT:FL Y 5S
HOW01 MOORING 1	53° 54.025' N 001° 50.986' E	SPECIAL MARK, YELLOW PILLAR, NO TOPMARK LIGHT:FL Y 5S

4.4 Wave Buoys

HOW01 Wave 1	53° 50.033' N 002° 10.316' E	SPECIAL MARK YELLOW BOUY, Q (5) 20s – (YELLOW) TOPMARK; YELLOW CROSS
HOW01 Wave 2	53° 50.123' N 001° 49.152' E	SPECIAL MARK YELLOW BOUY, Q (5) 20s – (YELLOW) TOPMARK; YELLOW CROSS

4.5 Subsea Monuments – On Seabed

Monument 1	53° 51.647' N 001° 48.904' E
Monument 2	53° 44.466' N 001° 24.407' E

5. HOW01 Vessel Update

Below is a list of vessels working on the Hornsea One Project.

VCC – Vessel Clearance Certificate, this ensure all procedures have been followed to allow a vessel to begin operations.

Vessel Details		Summary of Vessel Communications				Work Schedule		Vessel Clearance Certificate	
Vessel Name	MMSI	Contact Number	E-mail	Type	Frequencies Monitored	Start/Arrival	Work Package	VCC Issued	VCC Number
GUARD VESSELS									
Esvagt Castor	220003000	(+45) 61 62 67 74	castor@esvagtvesel.com	VHF	Ch. 16 & P1 @ 162.050 MHz	24/10/2017	Construction	27/10/2017	HOW01-VCC-009
Rover Alpha	235010380	+44 (0) 7947402153	george.west533@btinternet.com	VHF	Ch. 16 & P1 @ 162.050 MHz	06/04/2018	Export Cable	06/04/2018	HOW01-VCC-036
Natalie C	232004523	+44(0)7786512045	natalieb@e-catch.info	VHF	Ch. 16 & P1 @ 162.050 MHz	10/04/2018	Export Cable	10/04/2018	HOW01-VCC-039
Resolute	2350690136		russel@drdiesel.co.uk	VHF	Ch. 16 & P1 @ 162.050 MHz	13/04/2018	Export Cable	13/04/2018	HOW01-VCC-041
VikingFjord	258493000	+4790638579	vikingfjord@mmred.no	VHF	Ch. 16 & P1 @ 162.050 MHz	21/04/2018	Construction	20/04/2018	HOW01-VCC-043
Adventure	235109237	+44 7446 054547	gvadventure@gmail.com	VHF	Ch. 16 & P1 @ 162.050 MHz	18/05/2018	Export Cable	18/05/2018	HOW01-VCC-064
CREW TRANSFER VESSELS									
MCS Pampero	235092103	07769934448	mcs pampero@maritimecraft.co.uk	VHF	Ch. 16 & P1 @ 162.050 MHz	31/05/2018	Construction	30/05/2018	HOW01-VCC-067
OOC Nerz	232010560	+45 53 65 46 45	occ-nerz@mho-co.dk	VHF	Ch. 16 & P1 @ 162.050 MHz	25/07/2018	Construction	27/07/2018	HOW01-VCC-080

Vessel Details		Summary of Vessel Communications				Work Schedule		Vessel Clearance Certificate	
Vessel Name	MMSI	Contact Number	E-mail	Type	Frequencies Monitored	Start/Arrival	Work Package	VCC Issued	VCC Number
Rix Leopard	235113904	+44 (0) 07702 657434	rix.leopard@rix.co.uk	VHF	Ch. 16 & P1 @ 162.050 MHz	13/03/2018	Construction	22/03/2018	HOW01-VCC-021
Rix Lynx	235115745	+07836615491	rix.lynx@rix.co.uk	VHF	Ch. 16 & P1 @ 162.050 MHz	11/04/2018	Construction	11/04/2018	HOW01-VCC-023
JACK UP SHIPS									
Sea Installer	219456000	020 3145 4420	bridge_si@a2sea.com	VHF	Ch. 16 & P1 @ 162.050 MHz	13/09/2018	Foundations	13/09/2018	HOW01-VCC-095
GMS Endeavour	370582000	+44 07379 922184	endeavour.master@fleet.gmsuae.com	VHF	Ch. 16 & P1 @ 162.050 MHz	13/03/2018	Construction	15/04/2018	HOW01-VCC-025
GMS Evolution	374250000	+870773261545	evolution.master@fleet.gmsuae.com	VHF	Ch. 16 & P1 @ 162.050 MHz	15/06/2018	Construction	16/06/2018	HOW01-VCC-010
Innovation	218781000	-	bridge.innovation@ships.deme.be	VHF	Ch. 16 & P1 @ 162.050 MHz	23/12/2017	Foundations	22/01/2018	HOW01-VCC-016
CABLE LAYING VESSELS									
Living Stone	245746000	+49 42 15 17 219	captain.livingstone@ships.deme-group.be	VHF	Ch. 16 & P1 @ 162.050 MHz	03/11/2018	Export Cable	03/11/2018	HOW01-VCC-81
Connector	373479000	+47 528 583 56	master@connector.solstadfarstad.com	VHF	Ch. 16 & P1 @ 162.050 MHz	04/04/2018	Export Cable	04/04/2018	HOW01-VCC-040
Seaway Aimery	232015468	(0)203 145 41 22	MSV_SeawayAimery.Bridge@Subsea7.com	VHF	Ch. 16 & P1 @ 162.050 MHz	15/10/2018	Array Cable	14/10/2018	HOW01-VCC-099
SERVICE OPERATION VESSELS									

Vessel Details		Summary of Vessel Communications				Work Schedule		Vessel Clearance Certificate	
Vessel Name	MMSI	Contact Number	E-mail	Type	Frequencies Monitored	Start/Arrival	Work Package	VCC Issued	VCC Number
Seaway Moxie	232015469	+47 47793558	SeawayMoxie.Captain@Subsea7.com	VHF	Ch. 16 & P1 @ 162.050 MHz	11/10/2018	Array Cable	11/10/2018	HOW01-VCC-091
Edda Mistral	232008600	+44 1472 86 8003	master.nb470@ostensjo.no	VHF	Ch. 16 & P1 @ 162.050 MHz	10/09/2018	Construction	09/09/2018	HOW01-VCC-092
Wind Innovation	235113838	+45 21 325 431	master.wi@c-bed.nl	VHF	Ch. 16 & P1 @ 162.050 MHz	07/07/2018	Construction	06/07/2018	HOW01-VCC-029
TRENCHING VESSELS									
Havila Phoenix	311000229	(+47) 21 038 800	bridge.phoenix@havalaship.com	VHF	Ch. 16 & P1 @ 162.050 MHz	26/02/2018	Array Cable	07/07/2018	HOW01-VCC-018
Grand Canyon	257031820	+4721034500	master@grand-canyon.no	VHF	Ch. 16 & P1 @ 162.050 MHz	29/10/2018	Array Cable	27/10/2018	HOW01-VCC-044
Lange Wapper	250309000	(+44) 07702 657434	bridge.langewapper@ships.deme-group.com	VHF	Ch. 16 & P1 @ 162.050 MHz	24/09/2017	Export Cable	24/09/2017	HOW01-VCC-004
SURVEY VESSELS									
SeaZip Fix	244170283	+31 610390664	pcde@seazip.com	VHF	Ch. 16 & P1 @ 162.050 MHz	22/11/2018	Export Cable	22/11/18	HOW01-VCC-107
MISCELLANEOUS									

6. Asset Installation Status

Foundations Scour Protection, Monopiles (MP), Transition piece (TP) and Turbine Installation Progress

- Complete
- Not required

WTG ID	Foundation			Turbine			WTG ID	Foundation			Turbine		
	Scour	MP	TP	Tower	Nacelle	Blades		Scour	MP	TP	Tower	Nacelle	Blades
A03	Complete	Complete	Complete				B25	Not required	Complete	Complete			
A04	Complete	Complete	Complete				B27	Complete	Complete				
A05	Complete	Complete	Complete				B28	Not required	Complete	Complete			
A06	Complete	Complete	Complete				B30	Complete	Complete	Complete			
A07	Not required	Complete	Complete				C01	Not required	Complete	Complete			
A08	Not required	Complete	Complete				C03	Complete	Complete	Complete			
A09	Not required	Complete	Complete				C05	Not required	Complete	Complete			
A10	Not required	Complete	Complete				C07	Not required	Complete	Complete			
A11	Complete	Complete	Complete				C10	Complete	Complete	Complete			
A12	Not required	Complete	Complete				C13	Not required	Complete	Complete			
A13	Complete	Complete	Complete				C16	Not required	Complete	Complete			
A14	Not required	Complete	Complete				C18	Not required	Complete	Complete			
A15	Complete	Complete	Complete				C20	Not required	Complete	Complete			
A16	Not required	Complete	Complete				C21	Not required	Complete	Complete			
A17	Not required	Complete	Complete				C23	Not required	Complete	Complete			
A18	Not required	Complete	Complete				C25	Not required	Complete	Complete			
A19	Not required	Complete	Complete				C30	Complete	Complete	Complete			
A20	Not required	Complete	Complete				D01	Complete	Complete	Complete			
A21	Not required	Complete	Complete				D03	Complete	Complete	Complete			
A22	Not required	Complete	Complete				D05	Not required	Complete	Complete			
A23	Not required	Complete	Complete				D07	Not required	Complete	Complete			
A24	Not required	Complete	Complete				D25	Not required	Complete	Complete			
A25	Complete	Complete	Complete				D27	Complete	Complete	Complete			
A26	Complete	Complete	Complete				D28	Complete	Complete	Complete			
A27	Complete	Complete	Complete				E01	Not required	Complete	Complete			
A28	Complete	Complete	Complete				E02	Not required	Complete	Complete			
A29	Not required	Complete	Complete				E03	Not required	Complete	Complete			
A30	Not required	Complete	Complete				E05	Complete	Complete	Complete			
A31	Complete	Complete	Complete				E07	Not required	Complete	Complete			
A32	Not required	Complete	Complete				E10	Not required	Complete	Complete			
B01	Not required	Complete	Complete				E13	Not required	Complete	Complete			
B02	Not required	Complete	Complete				E16	Not required	Complete	Complete			
B05	Not required	Complete	Complete				E18	Not required	Complete	Complete			
B07	Not required	Complete	Complete				E20	Not required	Complete	Complete			
B10	Not required	Complete	Complete				E21	Not required	Complete	Complete			
B13	Complete	Complete	Complete				E22	Not required	Complete	Complete			
B16	Not required	Complete	Complete				E23	Not required	Complete	Complete			
B18	Not required	Complete	Complete				E24	Complete	Complete	Complete			
B20	Not required	Complete	Complete				E25	Not required	Complete	Complete			
B21	Not required	Complete	Complete				F01	Complete	Complete	Complete			
B22	Not required	Complete	Complete				F03	Not required	Complete	Complete			
B23	Not required	Complete	Complete				F07	Not required	Complete	Complete			
B24	Not required	Complete	Complete				F10	Not required	Complete	Complete			

WTG ID	Foundation			Turbine			WTG ID	Foundation			Turbine		
	Scour	MP	TP	Tower	Nacelle	Blades		Scour	MP	TP	Tower	Nacelle	Blades
F13							K07						
F16							K10						
F18							K13						
F20							K16						
F21							K18						
F23							K20						
F25							K21						
F27							K23						
F28							K25						
G01							L01						
G02							L03						
G03							L05						
G05							L18						
G07							L20						
G10							L21						
G13							L22						
G16							L23						
G20							L24						
G21							M02						
G22							M03						
G23							M05						
G24							M20						
G25							M21						
H01							M22						
H03							N01						
H05							N02						
H07							N20						
H10							N21						
H13							N22						
H16							P01						
H18							P20						
H20							P21						
H21							P22						
H23							Q20						
H25													
H27													
J01													
J03													
J05													
J07													
J10													
J13													
J16													
J18													
J20													
J21													
J22													
J23													
J24													
J25													
K01													
K02													
K03													
K05													

7. Cable Installation Status

The installation of cables is shown in the below tables.

7.1 Inter - Array Cable Status

Black: Designed Red: Laid Green: Cable Fully Buried Blue: Accepted

**E03-D03 F03-E02 J01-H01 N01-P01 G02-G01 Z13-J03 H05-J05 J03-K02 K05-L05 L03-M03 L05-M05
K03-L03 E05-D05 G03-G02 Z13-G05 C03-B02 D01-C01 B02-A03 C01-B01 D05-C05 B10-A11
A12-A13 E10-C10 B07-A07 A08-A09 D07-B10 Z13-C07 Z13-E03 Z13-E05 Z13-D07 Z13-F03 L03-M02
E10-F10 B28-A29 Z13-E07 A11-A12 A09-A10 C07-A08 Z13-B07 A07-A06 A06-A05 A05-A04 C05-B05
E02-D01 Z13-G03 G01-F01 F01-E01 H03-J01 J01-K01 K01-L01 Z13-H03 K02-N01 P01-N02 G05-K03
J05-K05 Z13-H05 D03-C03 E07-F07 E07-E10 B30-A31 D27-B28 A28-A27 A27-A26 A26-A25 D25-C25
E25-D25 F25-E25 F23-E23 E23-C23 H21-J21 B27-A28 A31-A32 D28-C30 C30-B30 C23-B24 G24-G23
A29-A30 E24-F23 G23-G22 C25-B25 G22-H21 Z12-H16 H16-J16 H16-K13 J16-K16 Z12-G16 G16-J13
J10-K07 J10-K10 J13-J10 Z12-H13 H07-G07 H10-J07 H13-H10 J07-H07 Z12-F16 F16-G13 G13-F13
G13-G10 Z12-E16 B13-A14 C13-B13 E13-C13 E16-E13 Z12-C16 A16-A15 B16-A16 B16-A17 C16-B16
Z12-E18 A18-A19 B18-A18 C18-B18 E18-C18 Z12-B20 A21-A22 A22-A23 B20-A20 B20-A21 Z12-C20
B21-B22 B22-B23 B23-A24 C20-B21 Z12-E20 C21-E21 E20-C21 E20-F20 E21-E22 Z12-G20 G20-H20
H20-J20 F21-G21 G20-F21 Z12-F18 H18-J18 J18-K18 K18-L18 F18-H18 F27-F28 F28-H27 G25-F27
H27-K25 Z11-G25 H25-J25 J24-H25 J25-L24 L24-L23 Z11-J24 K23-L22 L22-M22 M22-N22 N22-P22
Z11-K23 J23-L21 L21-M21 M21-N21 Z11-J23 K21-N20 N20-P20 P20-Q20 Q20-P21 Z11-K21 H23-J22
J22-K20 K20-L20 L20-M20 Z11-H23 Z11-B27 Z11-D27 Z11-D28 Z11-E24 Z11-F25 Z11-G24**

7.2 Export Cable Status

Black: Designed Red: Laid Green: Cable Fully Buried Blue: Accepted

**Western (Landfall – KP32) – (KP32 – RCS) - (RCS - KP100) – (KP100 - Z11)
Central (Landfall – KP32) – (KP32 – RCS) - (RCS - KP100) – (KP100 - Z12)
Eastern (Landfall – KP32) – (KP32 – RCS) - (RCS - KP100) – (KP100 – KP115) – (KP115 - Z13)**

7.3 OSS Interlink Cable Status

Black: Designed Red: Laid Green: Cable Fully Buried Blue: Accepted

Z11 – Z12

Z12 – Z13

8. Notice to Mariners updates

Below is a list of the current Notice to Mariners;

Date	Subject	Updates
15/09/2017	Export Cable Trenching Works – Tideway Offshore (Lange Wapper)	Vessels work for next 7 days per below map.
07/09/2017	Export Cable Boulder Clearance Works	Vessels work for next 7 days per below map.
20/10/2017	Hornsea One UXO Detonation, Update 8.	UXO detonation delayed due to weather
03/11/2017	Met mast Works	None
17/11/2017	offshore boulder clearance works in the offshore wind farm area	
17/11/2017	offshore installation works in the offshore Wind Farm area with the installation of scour protection and foundations.	
04/12/2017	Deployment of Acoustic Waves and Current (AWAC) Profiler	
04/12/2017	Deployment of Noise Monitoring Equipment	Revision C- updated coordinates
26/01/2018	Export Cable and Interconnector Boulder Clearance	Update 4 issued 27/02/18
13/02/2018	Export Cable Rock Placement	
24/02/2018	TP Installation – Sea Installer	
01/03/2018	Export Cable Soundwave Clearance	
02/03/2018	Pre- lay Works for Crossing Third Party Cables/Pipelines	
13/03/2018	Export Cable and Interlink Cable Laying Works	
23/03/2018	Commencement of Jack Up Accommodation platform operations	
27/03/2018	Intertidal and Nearshore Export Cable Works	
06/04/2018	Offshore Substation Installation	
03/05/2018	Transition Piece bolt tightening vessel – Eurus Express	
17/05/2018	Status of Confirmed Unexploded Ordnance	
29/05/2018	Array Cables Installation	
05/06/2018	Array Cables Boulder Clearance	
12/06/2018	OSS installation update	
14/06/2018	UXO detonation - Update	
29/06/2018	UXO Detonation - Complete	
27/07/2018	Offshore Substation Topside Installation – Z11 & Z13	
27/07/2018	Monopile and Transition Piece Installation Update - Innovation return to field	
23/08/2018	HOW01 NtM – Export Cable and Interlink Cable Installation Update (Vessel: Living Stone)	
31/08/2018	Transition piece installation - update	
31/08/2018	Intertidal and Nearshore Export Cable Works	
19/09/2018	Diving Met Mast Removal Preparation Campaign	

31/10/2018	Post lay rock placement r1	
09/11/2018	Notus Express TP bolt tightening vessel	
13/11/2018	UXO Detonation	
27/11/2018	Offshore Export Cable Burial – ETD Hercules	

9. Safety Zones

The Secretary of State for the United Kingdom has declared safety zones under the following terms:

During Construction

1. 500 metres radius around each installation of wind turbine, collector substations and/or their substructures and foundations comprising the Hornsea One Offshore Wind Farm whilst work is being performed as indicated by the presence of construction vessels including jack ups.
2. 50 metres radius around each wind turbine, collector substations and/or their substructures and foundations installed but waiting to be commissioned as part of the Hornsea One Offshore Wind Farm. All fixed structures, including partially constructed structures such as turbine foundations, will be mounted and marked with a Flashing Yellow 2.5s light visible through 360 degrees with a 2nm range.

The table below indicates the Safety Zones that are active.

Asset	Size	Duration
Z13	500m	During the presence of the GMS Endeavour
Z01	500m	During the presence of the GMS Evolution
All locations	500m	During the presence of the Wind Innovation
All locations	500m	During the presence of the Innovation
All locations	500m	During the presence of the Sea Installer
All locations	500m	During the presence of the Edda Mistral
All locations	500m	During the presence of the Seaway Aimery
All locations	500m	During the presence of the Seaway Moxie
All locations	500m	During the presence of the Connector
All locations	500m	During the presence of the Living Stone

10. WTG & Substation Positions

Below are the positions of locations referred to throughout this document.

WTG ID	WGS84	
	Latitude	Longitude
A03	53° 49' 36.362" N	2° 11' 58.401" E
A04	53° 49' 21.635" N	2° 10' 32.853" E
A05	53° 49' 25.952" N	2° 09' 25.058" E
A06	53° 49' 33.690" N	2° 08' 34.653" E
A07	53° 49' 32.464" N	2° 07' 42.469" E
A08	53° 49' 44.789" N	2° 06' 03.244" E
A09	53° 49' 41.917" N	2° 05' 12.846" E
A10	53° 49' 45.144" N	2° 04' 21.583" E
A11	53° 49' 48.364" N	2° 03' 30.317" E
A12	53° 49' 51.969" N	2° 02' 32.812" E
A13	53° 49' 55.157" N	2° 01' 41.865" E
A14	53° 50' 01.402" N	2° 00' 51.654" E
A15	53° 50' 01.857" N	1° 59' 49.102" E
A16	53° 50' 02.288" N	1° 58' 42.072" E
A17	53° 50' 02.970" N	1° 56' 57.238" E
A18	53° 50' 03.298" N	1° 56' 03.042" E
A19	53° 50' 05.340" N	1° 54' 34.121" E
A20	53° 50' 04.153" N	1° 53' 39.481" E
A21	53° 50' 04.804" N	1° 52' 25.513" E
A22	53° 50' 05.059" N	1° 50' 57.533" E
A23	53° 50' 11.478" N	1° 49' 42.519" E
A24	53° 50' 10.027" N	1° 48' 16.430" E
A25	53° 50' 06.274" N	1° 47' 01.273" E
A26	53° 50' 06.589" N	1° 45' 55.315" E
A27	53° 50' 06.928" N	1° 44' 42.213" E
A28	53° 50' 07.271" N	1° 43' 25.130" E
A29	53° 50' 07.587" N	1° 42' 11.275" E
A30	53° 50' 14.642" N	1° 40' 49.816" E
A31	53° 50' 08.135" N	1° 39' 55.428" E
A32	53° 50' 08.329" N	1° 39' 04.642" E
B01	53° 50' 09.901" N	2° 13' 47.045" E
B02	53° 50' 17.294" N	2° 12' 13.611" E
B05	53° 50' 13.568" N	2° 08' 48.444" E
B07	53° 50' 13.231" N	2° 06' 19.895" E
B10	53° 50' 26.838" N	2° 03' 35.969" E
B13	53° 50' 33.950" N	2° 00' 59.064" E
B16	53° 50' 42.731" N	1° 58' 20.716" E
B18	53° 50' 49.438" N	1° 55' 43.634" E
B20	53° 50' 46.022" N	1° 53' 18.081" E
B21	53° 50' 46.266" N	1° 51' 15.197" E
B22	53° 50' 50.737" N	1° 50' 07.208" E
B23	53° 50' 49.291" N	1° 48' 27.938" E
B24	53° 50' 47.725" N	1° 47' 09.129" E
B25	53° 50' 42.299" N	1° 45' 54.571" E
B27	53° 51' 03.865" N	1° 43' 42.917" E
B28	53° 50' 58.198" N	1° 41' 57.356" E
B30	53° 50' 58.492" N	1° 40' 12.842" E
C01	53° 50' 42.749" N	2° 13' 11.280" E
C03	53° 50' 44.945" N	2° 10' 30.295" E

WTG ID	WGS84	
	Latitude	Longitude
C05	53° 50' 50.038" N	2° 08' 08.696" E
C07	53° 50' 49.261" N	2° 05' 41.602" E
C10	53° 51' 09.122" N	2° 02' 49.679" E
C13	53° 51' 13.312" N	2° 00' 15.913" E
C16	53° 51' 23.712" N	1° 57' 35.260" E
C18	53° 51' 28.777" N	1° 55' 00.387" E
C20	53° 51' 28.596" N	1° 52' 31.220" E
C21	53° 51' 29.321" N	1° 50' 27.756" E
C23	53° 51' 30.170" N	1° 47' 42.830" E
C25	53° 51' 16.144" N	1° 45' 17.179" E
C30	53° 51' 44.759" N	1° 39' 21.566" E
D01	53° 51' 19.036" N	2° 12' 31.748" E
D03	53° 51' 27.125" N	2° 09' 57.215" E
D05	53° 51' 33.204" N	2° 07' 21.543" E
D07	53° 51' 26.092" N	2° 05' 00.231" E
D25	53° 51' 49.986" N	1° 44' 39.770" E
D27	53° 52' 05.499" N	1° 42' 34.723" E
D28	53° 51' 59.883" N	1° 40' 49.047" E
E01	53° 51' 53.062" N	2° 11' 54.701" E
E02	53° 51' 53.838" N	2° 10' 28.350" E
E03	53° 52' 05.000" N	2° 09' 15.872" E
E05	53° 52' 09.257" N	2° 06' 42.135" E
E07	53° 52' 03.296" N	2° 04' 19.517" E
E10	53° 51' 51.400" N	2° 02' 03.364" E
E13	53° 51' 52.670" N	1° 59' 32.740" E
E16	53° 52' 04.770" N	1° 56' 50.156" E
E18	53° 52' 10.657" N	1° 54' 14.317" E
E20	53° 52' 11.164" N	1° 51' 44.332" E
E21	53° 52' 10.815" N	1° 49' 42.004" E
E22	53° 52' 17.258" N	1° 48' 31.781" E
E23	53° 52' 11.044" N	1° 46' 57.697" E
E24	53° 52' 19.198" N	1° 45' 28.085" E
E25	53° 52' 23.825" N	1° 44' 02.344" E
F01	53° 52' 48.086" N	2° 10' 54.639" E
F03	53° 52' 43.967" N	2° 08' 33.310" E
F07	53° 52' 42.594" N	2° 03' 36.484" E
F10	53° 52' 33.673" N	2° 01' 17.023" E
F13	53° 52' 32.023" N	1° 58' 49.544" E
F16	53° 52' 45.823" N	1° 56' 05.028" E
F18	53° 53' 09.705" N	1° 53' 09.308" E
F20	53° 52' 53.727" N	1° 50' 57.418" E
F21	53° 52' 57.834" N	1° 48' 50.122" E
F23	53° 52' 51.913" N	1° 46' 12.540" E
F25	53° 52' 57.661" N	1° 43' 24.901" E
F27	53° 53' 10.480" N	1° 41' 22.750" E
F28	53° 53' 06.724" N	1° 39' 35.969" E
G01	53° 53' 18.707" N	2° 10' 21.214" E
G02	53° 53' 29.078" N	2° 08' 44.887" E
G03	53° 53' 22.930" N	2° 07' 50.725" E

WTG ID	WGS84	
	Latitude	Longitude
G05	53° 53' 08.418" N	2° 05' 37.418" E
G07	53° 53' 17.692" N	2° 02' 58.029" E
G10	53° 53' 15.940" N	2° 00' 30.655" E
G13	53° 53' 11.371" N	1° 58' 06.326" E
G16	53° 53' 26.870" N	1° 55' 19.875" E
G20	53° 53' 36.285" N	1° 50' 10.477" E
G21	53° 53' 32.086" N	1° 48' 12.302" E
G22	53° 53' 37.322" N	1° 47' 03.356" E
G23	53° 53' 32.777" N	1° 45' 27.359" E
G24	53° 53' 43.034" N	1° 43' 56.495" E
G25	53° 53' 56.193" N	1° 42' 20.081" E
H01	53° 53' 58.413" N	2° 09' 37.848" E
H03	53° 54' 01.889" N	2° 07' 08.119" E
H05	53° 53' 49.595" N	2° 04' 52.339" E
H07	53° 53' 58.250" N	2° 02' 13.562" E
H10	53° 53' 58.203" N	1° 59' 44.261" E
H13	53° 53' 50.715" N	1° 57' 23.085" E
H16	53° 54' 07.913" N	1° 54' 34.697" E
H18	53° 53' 54.332" N	1° 52' 18.349" E
H20	53° 54' 32.240" N	1° 49' 08.214" E
H21	53° 54' 15.717" N	1° 47' 23.896" E
H23	53° 54' 13.636" N	1° 44' 42.152" E
H25	53° 54' 27.208" N	1° 41' 45.708" E
H27	53° 54' 33.076" N	1° 39' 51.158" E
J01	53° 54' 38.756" N	2° 08' 53.756" E
J03	53° 54' 40.844" N	2° 06' 25.490" E
J05	53° 54' 25.489" N	2° 04' 13.018" E
J07	53° 54' 32.071" N	2° 01' 36.460" E
J10	53° 54' 40.460" N	1° 58' 57.842" E
J13	53° 54' 30.055" N	1° 56' 39.821" E
J16	53° 54' 48.951" N	1° 53' 49.494" E
J18	53° 54' 36.702" N	1° 51' 33.414" E
J20	53° 55' 07.841" N	1° 48' 29.133" E
J21	53° 54' 57.164" N	1° 46' 38.273" E
J22	53° 55' 01.037" N	1° 45' 30.774" E
J23	53° 54' 54.490" N	1° 43' 56.922" E
J24	53° 54' 59.363" N	1° 42' 32.793" E
J25	53° 54' 58.220" N	1° 41' 11.321" E
K01	53° 55' 20.531" N	2° 08' 08.070" E
K02	53° 55' 09.158" N	2° 06' 54.890" E
K03	53° 55' 19.794" N	2° 05' 42.840" E

WTG ID	WGS84	
	Latitude	Longitude
K05	53° 55' 07.572" N	2° 03' 26.888" E
K07	53° 55' 08.764" N	2° 00' 56.185" E
K10	53° 55' 22.065" N	1° 58' 12.108" E
K13	53° 55' 08.466" N	1° 55' 57.552" E
K16	53° 55' 29.495" N	1° 53' 04.806" E
K18	53° 55' 17.753" N	1° 50' 48.118" E
K20	53° 55' 47.974" N	1° 47' 39.416" E
K21	53° 55' 39.082" N	1° 45' 51.896" E
K23	53° 55' 35.340" N	1° 43' 11.666" E
K25	53° 55' 34.661" N	1° 40' 30.893" E
L01	53° 56' 03.134" N	2° 07' 21.448" E
L03	53° 55' 58.740" N	2° 05' 00.167" E
L05	53° 55' 47.400" N	2° 02' 43.201" E
L18	53° 56' 02.272" N	1° 49' 58.961" E
L20	53° 56' 26.853" N	1° 46' 56.064" E
L21	53° 56' 21.088" N	1° 45' 05.390" E
L22	53° 56' 31.415" N	1° 43' 50.684" E
L23	53° 56' 14.047" N	1° 42' 28.756" E
L24	53° 56' 03.076" N	1° 41' 20.144" E
M02	53° 56' 28.418" N	2° 05' 28.078" E
M03	53° 56' 37.189" N	2° 04' 18.012" E
M05	53° 56' 19.915" N	2° 02' 07.514" E
M20	53° 57' 02.945" N	1° 46' 15.897" E
M21	53° 57' 01.186" N	1° 44' 20.968" E
M22	53° 57' 11.249" N	1° 43' 06.483" E
N01	53° 56' 48.110" N	2° 06' 32.147" E
N02	53° 57' 07.493" N	2° 04' 45.238" E
N20	53° 57' 37.337" N	1° 45' 37.518" E
N21	53° 57' 42.938" N	1° 43' 34.681" E
N22	53° 57' 43.069" N	1° 42' 31.534" E
P01	53° 57' 16.754" N	2° 06' 00.804" E
P20	53° 58' 09.550" N	1° 45' 01.601" E
P21	53° 58' 24.599" N	1° 42' 55.249" E
P22	53° 58' 15.790" N	1° 41' 55.576" E
Q20	53° 58' 38.484" N	1° 44' 29.435" E
Substation ID	Latitude	Longitude
HA-Z01	53° 37,655' N	0° 56,163' E
HA-Z11	53° 53' 26.979" N	1° 42' 51.851" E
HA-Z12	53° 52' 40.210" N	1° 53' 42.938" E
HA-Z13	53° 52' 38.856" N	2° 6' 9.807" E