Decommissioning Programme for Hywind Scotland Pilot Park

C178-HYS-Z-GA-00002

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1 Introduction

Statoil has through Hywind (Scotland) Limited (HYSL) received full planning permission for onshore works and marine licence for offshore works for the “Hywind Scotland Pilot Park Project” (HYS) in 2015. Hywind (Scotland) Limited is currently owned by Statoil (75 %) and Masdar (25 %). Statoil will act as the Operator of HYS for both the construction and operation phase of the project.

The wind farm consists of 5 floating turbines moored to the seabed by three anchors each, four infield cables and one export cable connecting the wind farm to Peterhead Grange substation (Figure 1-1).

This document presents the Decommissioning Programme for the offshore elements of HYS and has been prepared according to the requirements under Section 105 of the Energy Act 2004. This Decommissioning Programme is applicable to all offshore components of the wind farm including the wind turbines, substation, foundations, export and inter-array cables, scour protection and cable protection, if required.

HYS has a technical design lifetime of 20 years and it is assumed that the timing, methods and costs associated with decommissioning will have developed significantly in this time. This document, therefore, aims to establish and describe the feasibility of decommissioning. The actual methods, durations and costs remain uncertain at this stage in the process. The programme will, hence, be reviewed towards the end of the lifetime of the project to reflect best practice at the time and the results of any surveys undertaken at the site. The decommissioning procedure will also be subject to the award of a new Marine Licence by the Marine Scotland assuming the current process is still in place at the time of decommissioning.

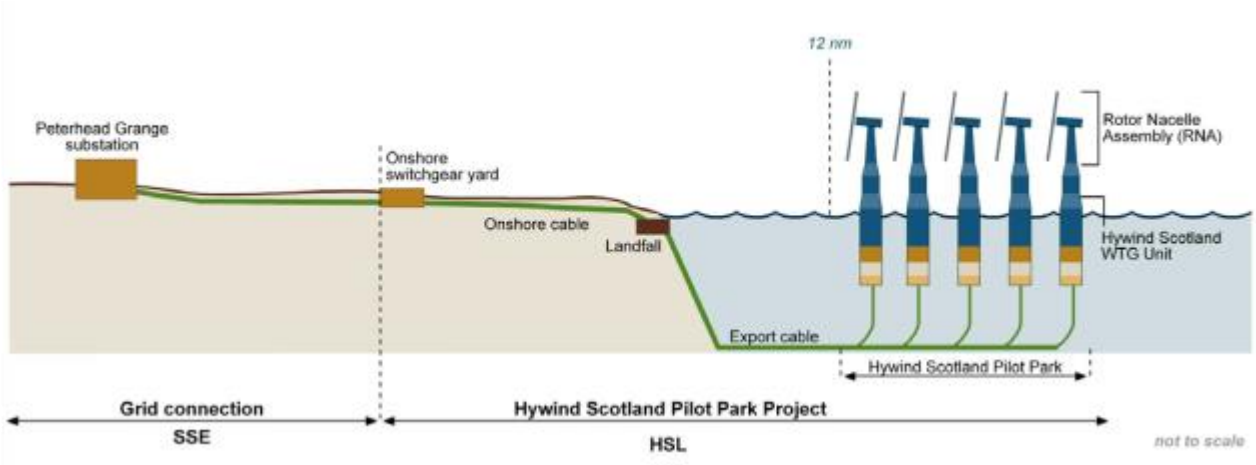


Figure 1-1: Illustration of the key components of the Hywind Scotland Pilot Park Project

2 Executive Summary

The Energy Act 2004 requires preparation and implementation of a decommissioning programme for Hywind Scotland Pilot Park (HYS). This document constitutes the preliminary decommissioning programme for the offshore components of the project, which will be updated and further developed before the actual decommissioning will take place.

The programme is informed and supported by the Environmental Impact Assessment (EIA) carried out for HYS. The resulting Environmental Statement (ES) provide detailed analysis of the baseline physical, biological and human environment. The assessment of the impact of the project on receptors and stakeholders takes into account decommissioning activities which are consistent with those presented in this document.

The decommissioning programme for HYS will follow regulations and best practice with a principle of minimising the impact on the marine environment caused by the work and any items left in place. Since HYS is a floating wind farm the units can easily be towed to shore, mooring lines disconnected and brought to shore. The buried parts of the cables and the anchors will be considered left in place, but this will be evaluated based on available technology, regulations and best practice at the time. If left in situ, protruding items will we protected by rock dumping.

The wind farm is expected to be in full operation late Q3 or early Q4 2017 and has a design life of 20 years. The decommissioning is therefore scheduled for Q2/Q3 2037 and operations at site are expected to be done within a window of five months.

3 Background information

HYS is located at Buchan Deep, about 25 km off the shore of Peterhead in Aberdeenshire, Scotland. The wind farm will consist of five wind turbines on floating foundations with a total capacity of 30 MW. The project has a technical design lifetime of 20 years.

This preliminary decommissioning programme is informed and supported by the Environmental Impact Assessment (EIA) carried out for HYS. The resulting Environmental Statement (ES) (link)[1] provides detailed analysis of the baseline physical, biological and human environment. The assessment of the impact of the project on receptors and stakeholders takes into account decommissioning activities which are consistent with those presented in this document.

3.1 Site layout

The site layout will be as shown in Figure 3-1 and Figure 3-2.

[1] http://marine.gov.scot/datafiles/lot/hywind/Environmental_Statement/Environmental_Statement.pdf

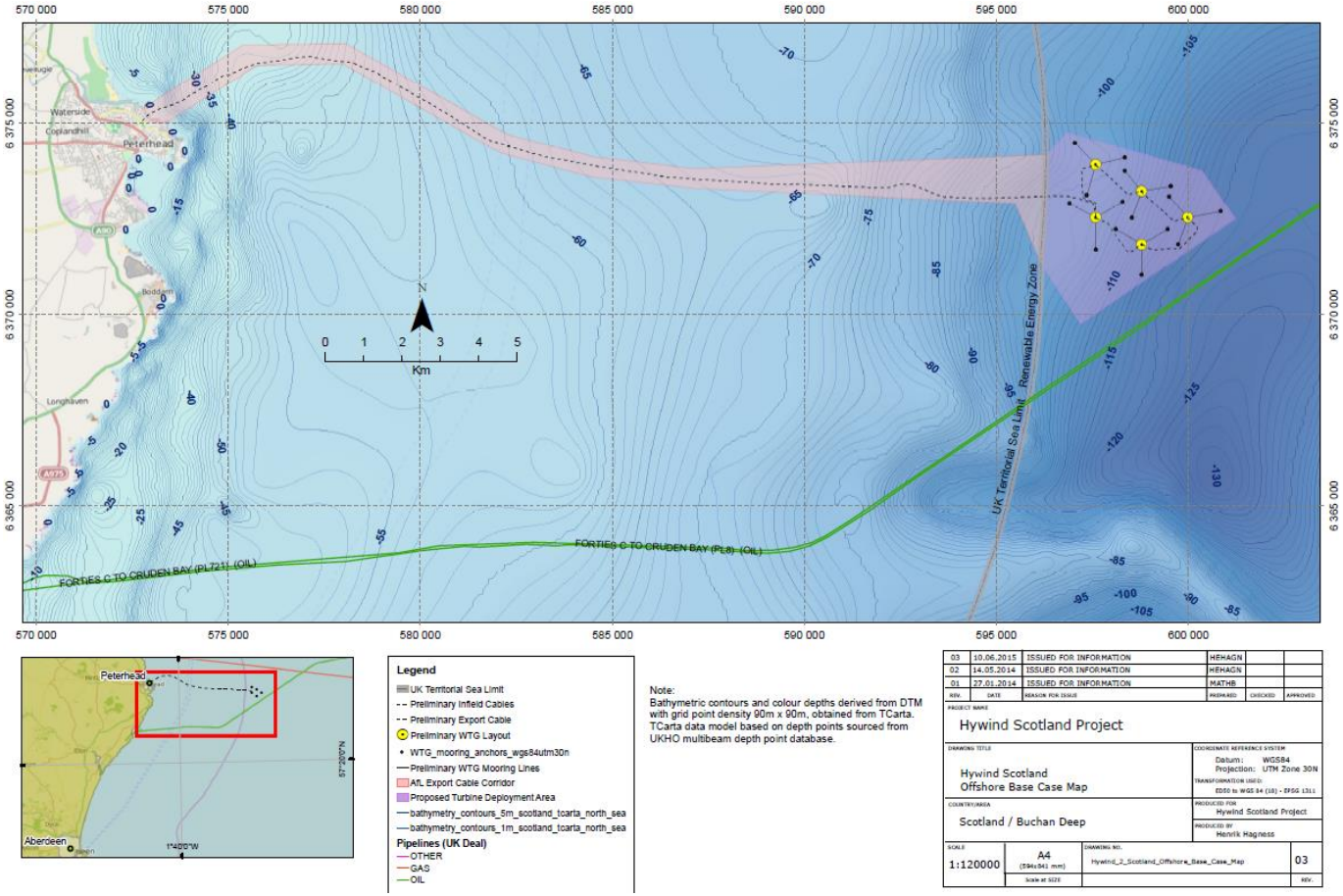


Figure 3-1 Site layout of Hywind Scotland Pilot Park

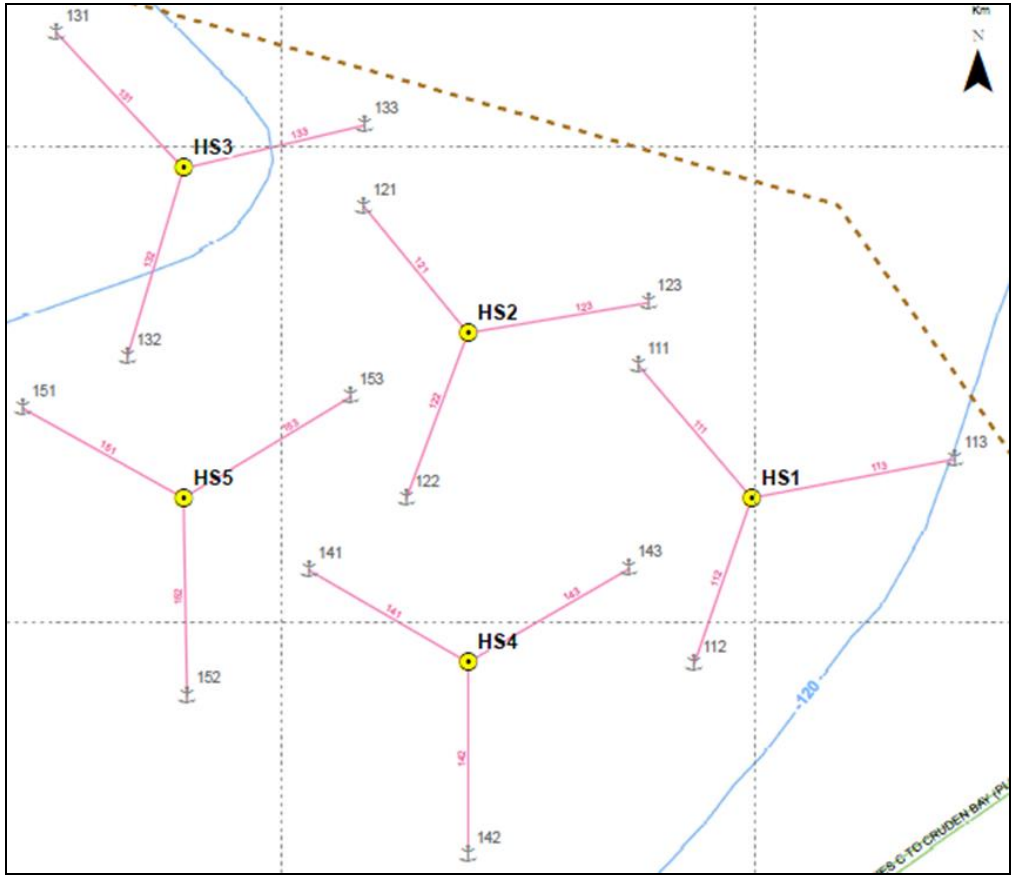


Figure 3-2: Positions of turbines and anchors

WTG name	Easting	Northing	LAT	LON
HS1	599 985	6 372 522	57° 29.056' N	1° 19.937' W
HS2	598 785	6 373 215	57° 29.445' N	1° 21.120' W
HS3	597 584	6 373 908	57° 29.834' N	1° 22.305' W
HS4	598 785	6 371 829	57° 28.699' N	1° 21.154' W
HS5	597 584	6 372 522	57° 29.088' N	1° 22.338' W

Anchor ID	WTG	Easting	Northing	LAT	LON	Depth (m)
111	HS1	599 506	6 373 077	57° 29.362' N	1° 20.402' W	112
112		599 741	6 371 823	57° 28.683' N	1° 20.198' W	114
113		600 845	6 372 685	57° 29.133' N	1° 19.072' W	117
121	HS2	598 346	6 373 748	57° 29.738' N	1° 21.547' W	106
122		598 525	6 372 519	57° 29.074' N	1° 21.397' W	108
123		599 549	6 373 343	57° 29.504' N	1° 20.353' W	111
131	HS3	597 047	6 374 478	57° 30.148' N	1° 22.829' W	100
132		598 350	6 373 118	57° 29.412' N	1° 22.561' W	104
133		598 115	6 374 089	57° 29.922' N	1° 21.534' W	106
141	HS4	598 115	6 372 216	57° 28.916' N	1° 21.815' W	106
142		598 785	6 371 020	57° 28.263' N	1° 21.174' W	111
143		599 467	6 372 223	57° 28.902' N	1° 20.462' W	113
151	HS5	596 905	6 372 899	57° 29.299' N	1° 23.009' W	102
152		597 599	6 371 690	57° 28.639' N	1° 22.343' W	105
153		598 290	6 372 946	57° 29.307' N	1° 21.622' W	107

3.2 Current adjacent facilities

The BP Forties crude oil pipeline system passes the area 1 km to the south of the turbine deployment area. There are several existing cables in the vicinity of the turbine deployment area and export cable corridor, including one cable along the export cable route for which it has not been possible to identify the owner. Two active and one inactive at sea disposal sites are located adjacent to the export cable corridor close to shore. All current adjacent facilities are shown in Figure 3-3.

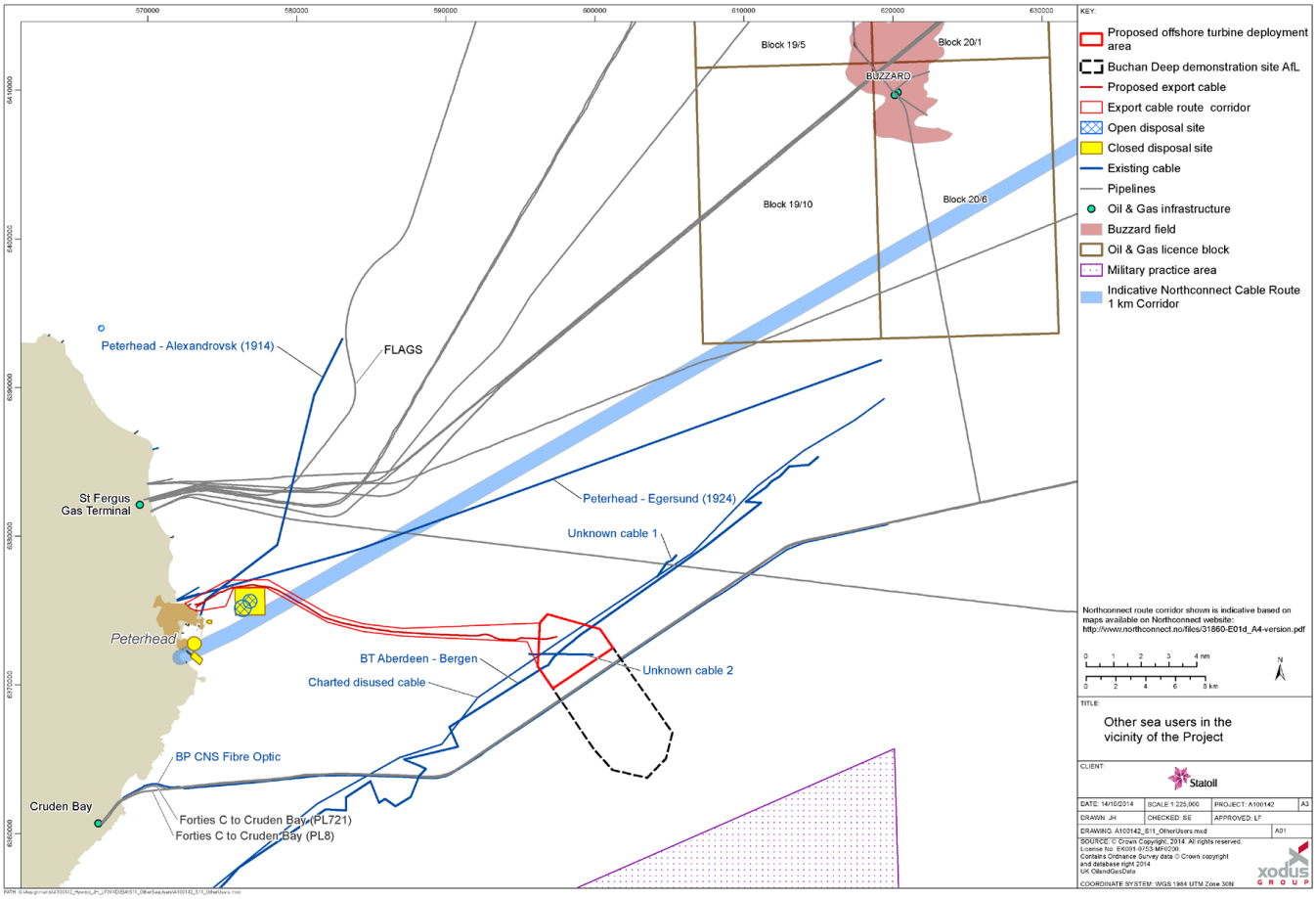


Figure 3.3: Current adjacent facilities to the Hywind Scotland Pilot Park Project.

3.3 Site characteristics

3.3.1 Metocean characteristics

The metocean characteristic for HYS has been set out in Table 3-1.

Table 3-1: Metocean characteristics at the site of HYS

Estimated average wind speed	10.1m/s
Estimated average significant wave height (Hs)	1.8 m
Water depth range	100-120 m
Current speed, surface	≈ 0-150 cm/s
Current speed, -55 m	≈ 0-135 cm/s
Current speed, 3 m above sea bed	≈ 0-87 cm/s

3.3.2 Bathymetry

Water depths along the cable export corridor range between approximately 100 m at the turbine deployment area to 14 m at landfall where the export cable is connected to the onshore cable (HDD exit point). The seabed slopes gradually from the turbine deployment area to a depth of 20 m at less than 1 km from the landfall. Further towards shore the seabed gradient becomes steeper. The general inclination of the sea floor along the cable route ranges between 0 and 3º. Near the cable landfall, the slope increases and reaches a maximum of just above 15º. In general, an inclination above 8º is only observed very close to the landing point.

3.3.3 Sea-bed conditions

In the wind farm area the seabed surface is covered by a relatively thin siltly sand layer (Holocene deposit). Below the surface sand a layer of very soft to firm clay is present (Witch Ground Fm). This layer extends to approximately 15-25m below seabed. Below the Witch Ground formation Stiff to hard clay is present (Wee Bankie Fm).

The surficial sediment along the export cable route predominantly comprises sand and gravel. The sand layer is thicker at some sections along the cable route (pockets). Below the upper sand clay or till is generally present and at a small section close to shore bedrock are believed to outcrop the seabed.

Mega ripples and sand waves are present in the wind farm area, and mega ripples are also locally present along the cable route.

3.4 Shipping and navigation

Section 15 of the HYS ES provides a detailed overview of current shipping and navigation activities in the vicinity of HYS. A summary of this is presented below.

The HYS area and the immediate surrounding area are used by transiting merchant vessels, with approximately two-thirds associated with the oil and gas industry. The majority of these vessels are using the onshore bases at Peterhead Port and Aberdeen Harbour. There is also some fishing vessel activity in Buchan Deep, both from vessels steaming on passage and vessels engaged in fishing with the vast majority of activity being from Scottish vessels. There is limited recreational vessel activity in the vicinity of the Project due to its offshore location; however, there are occasional transits by yachts crossing the North Sea which pass in the vicinity of HYS, for example en route to and from Peterhead marina.

3.5 Commercial fisheries

Section 14 of the HYS ES provides a detailed overview of current commercial fisheries activity in the vicinity of HYS. A summary of this is presented below.

Low level demersal fisheries targeting haddock, Norway lobster and squid are dominant in the turbine deployment area. There is also a low level of pelagic fisheries in the turbine deployment area. Scallop dredging is the fishery of highest economic value in the export cable corridor. Creels targeting crab and lobster and hand lining for mackerel also take place in the export cable corridor and fishing intensity increases closer to the shore. Vessels fishing the inshore area operate out of local ports.

3.6 Protected sites

There are currently no Special Areas of Conservation (SACs) designated under the EU Habitats Directive within 150 km of the Project, and there are no Marine Protected Areas (MPAs) designated under the Marine (Scotland) Act 2010 in the close vicinity of the Project area. The nearest is the Turbot Bank MPA, located approximately 18 km to the east of the turbine deployment area and is designated for the protection of sandeels.

The Southern Trench area, a 25 km-wide area off the southern coast of the outer Moray Firth between Cullen and almost as far south as Peterhead, is proposed as a potential Marine Protected Area (MPA). This is located adjacent to the turbine area (Figure 3-4). The proposed cable route passes through the southern extremities of this proposed nature conservation MPA, however, there are no MPA specific benthic features of interest present in this section.

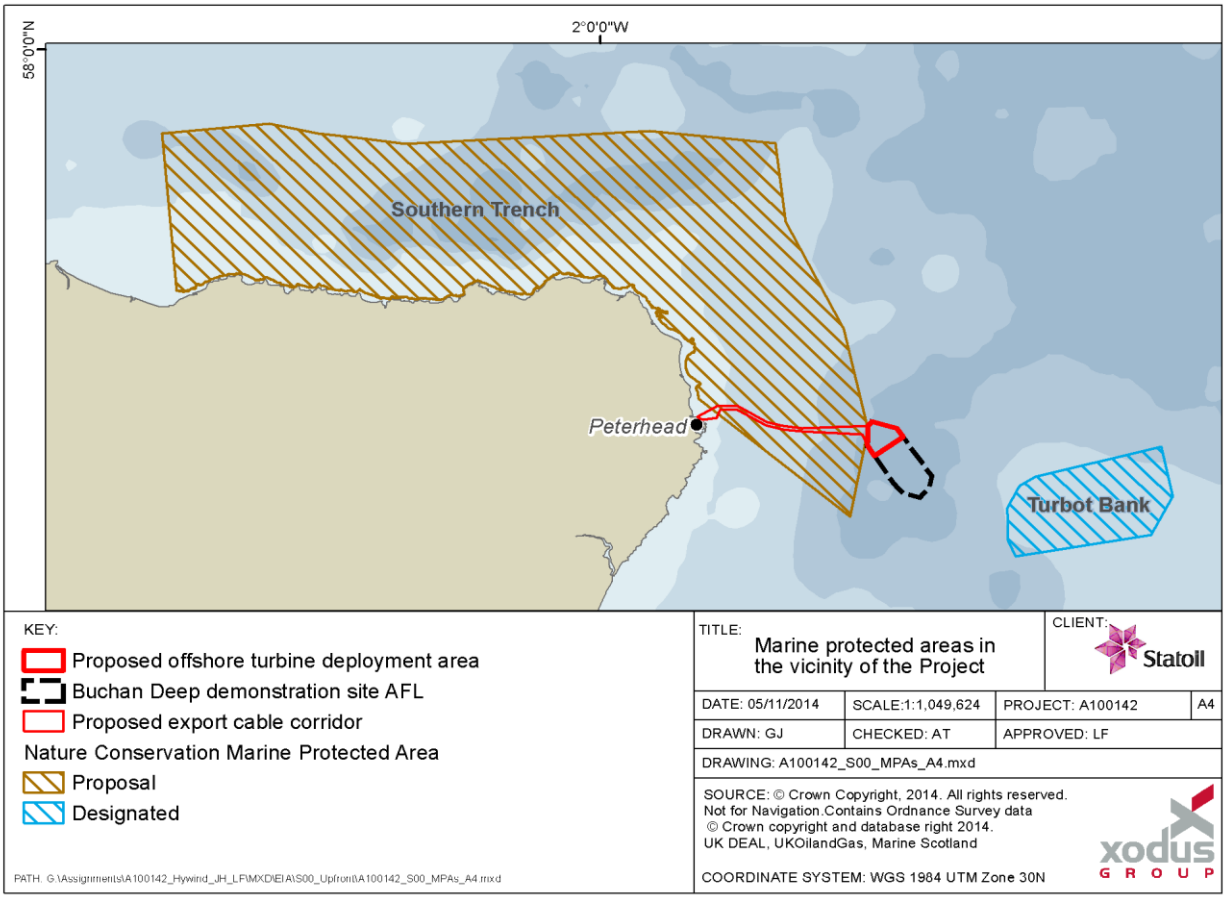


Figure 3-4: Marine Protected Areas in the vicinity of Hywind Scotland Pilot Park Project.

4 Description of items to be decommissioned

Hywind Scotland Pilot Park consists of:

- 5 floating Hywind units that consist of a 6 MW turbine on a floating spar buoy
- 15 mooring lines and 15 anchors (three per turbine)
- 4 infield cables
- 1 export cable (consisting of a static cable with a short dynamic cable between the static end and one of the turbines (HS5)

4.1 Hywind units

The Hywind units are floating structures consisting of standard wind turbine on a spar buoy type substructure. The substructure is 91 meter high and will have a draft of approximately 78 meters. The substructure is made of steel and will be partly filled with ballast water and solid ballast.

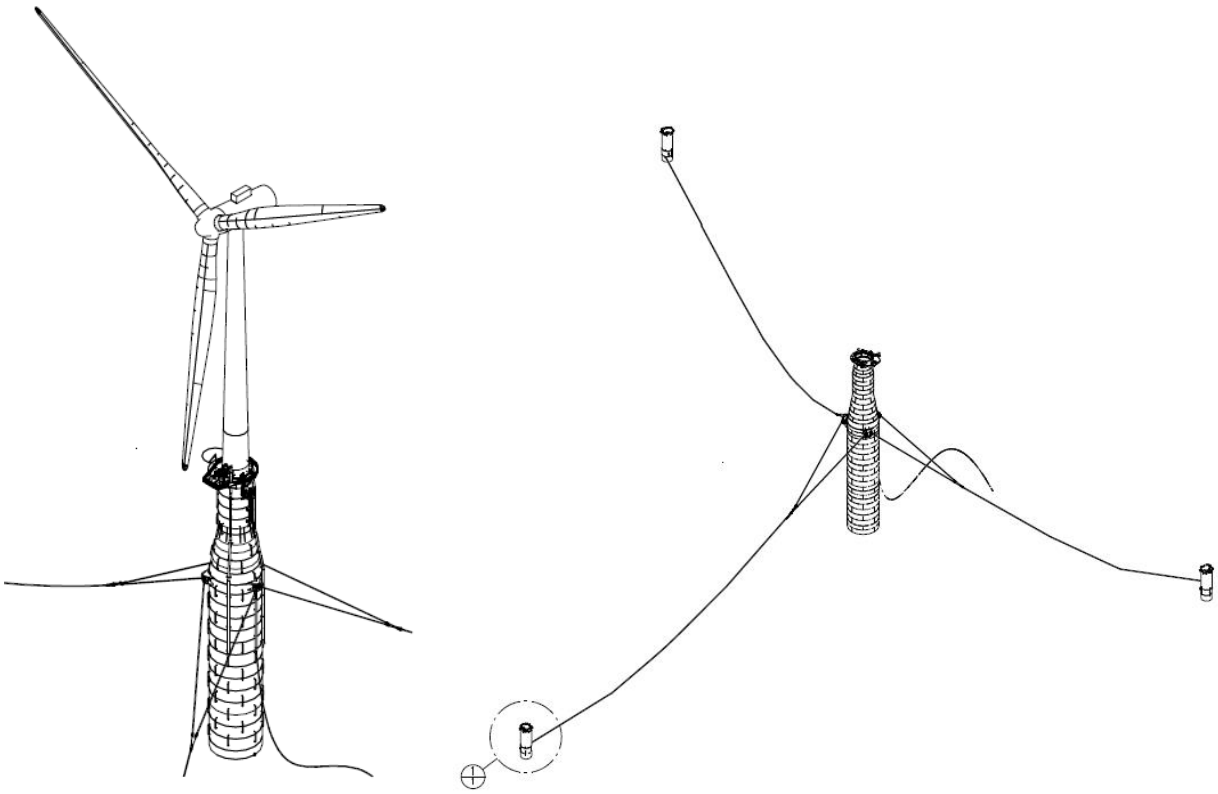


Figure 4-1: Hywind unit and mooring system

4.2 Mooring lines

There are three mooring lines per Hywind unit, leading to a total of 15 mooring lines (Figure 4-1). The mooring line lengths are ranging from 700 to 900 meters each and consisting of offshore grade studless mooring chains. Dimensions are between 132 and 148 mm in diameter.

4.3 Anchors

There are three anchors per Hywind unit, leading to a total of 15 anchors. The anchors are suction bucket anchors, 5m in diameter and 16m in height (Figure 4-2). They are made of steel and have a total weight of about 100 tonnes per anchor. After installation, the top of the anchors will protrude 1.5 m above the seabed. Installation aids on top of the anchors will add a height of 1.7 m to the structures.

Removal of the anchors is assumed to be technically feasible, but could be challenging. Leaving the anchors in place could therefore be an option if the environmental impact is found to be less than from a removal operation.

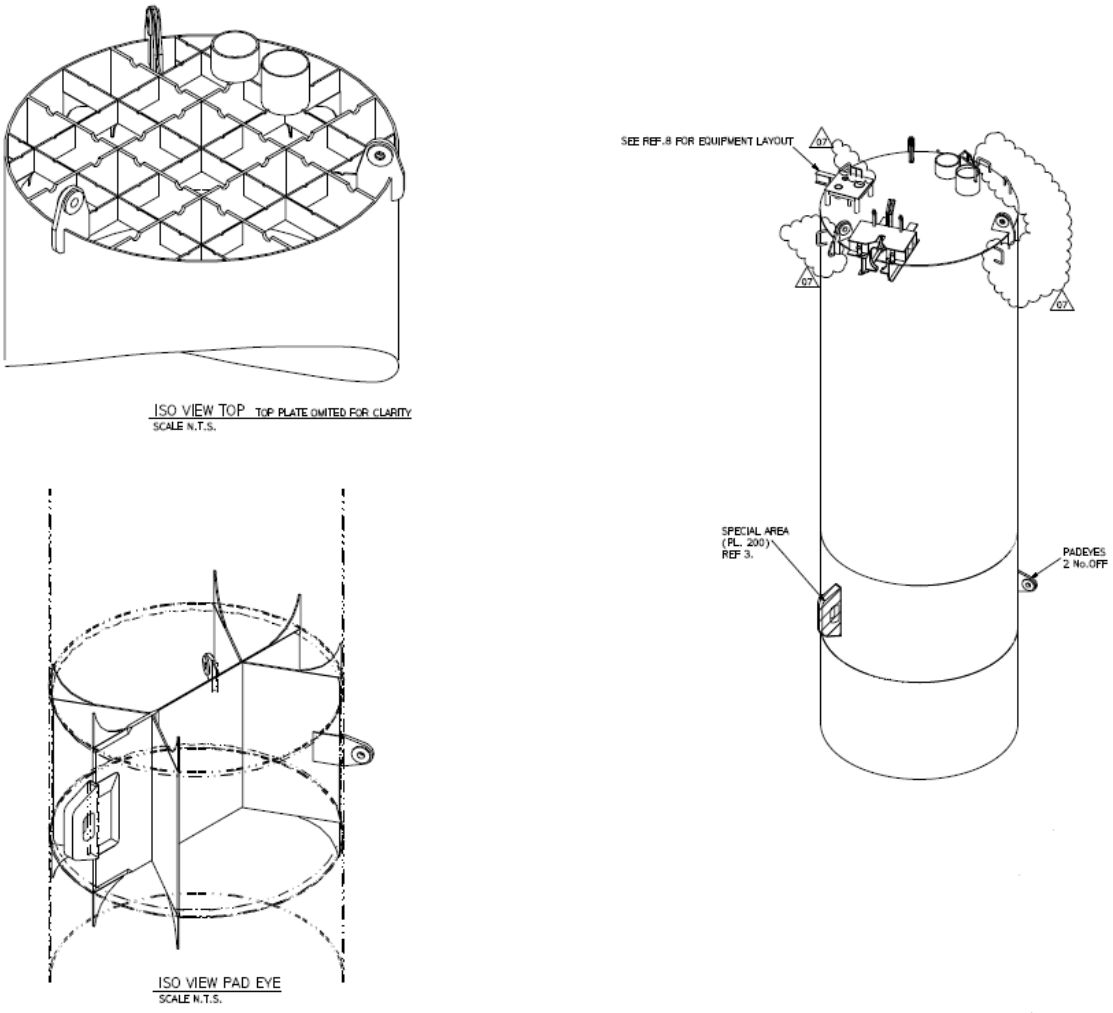


Figure 4-2: ISO view of suction anchors, including stiffeners

4.4 Infield cables

There are a total of four infield cables connecting the turbines. The total length of the 4 infield cables is approximately 8,500 m and the diameter is 169 mm. The sections on the seabed, totalling approximately 5,500m are anticipated to be trenched or rock dumped depending upon final design. The parts of the infield cables that are in the water column or exposed on the seabed, and the vertical hold back anchors will be removed, while the buried sections of the cables will be considered left in situ. The final decision will be based on an assessment of available technology at the time and the environmental impact of the two alternatives.

Figure 4-3 below shows a typical configuration for an infield cable. Lazy waves in both ends account for the floating motions of the Hywind units. The section of the cables considered left in situ are indicated with the red

arrow, the sections envisaged to be removed during the decommissioning are indicated by the green arrows. Figure 4-4 shows a cross section of the infield cable.

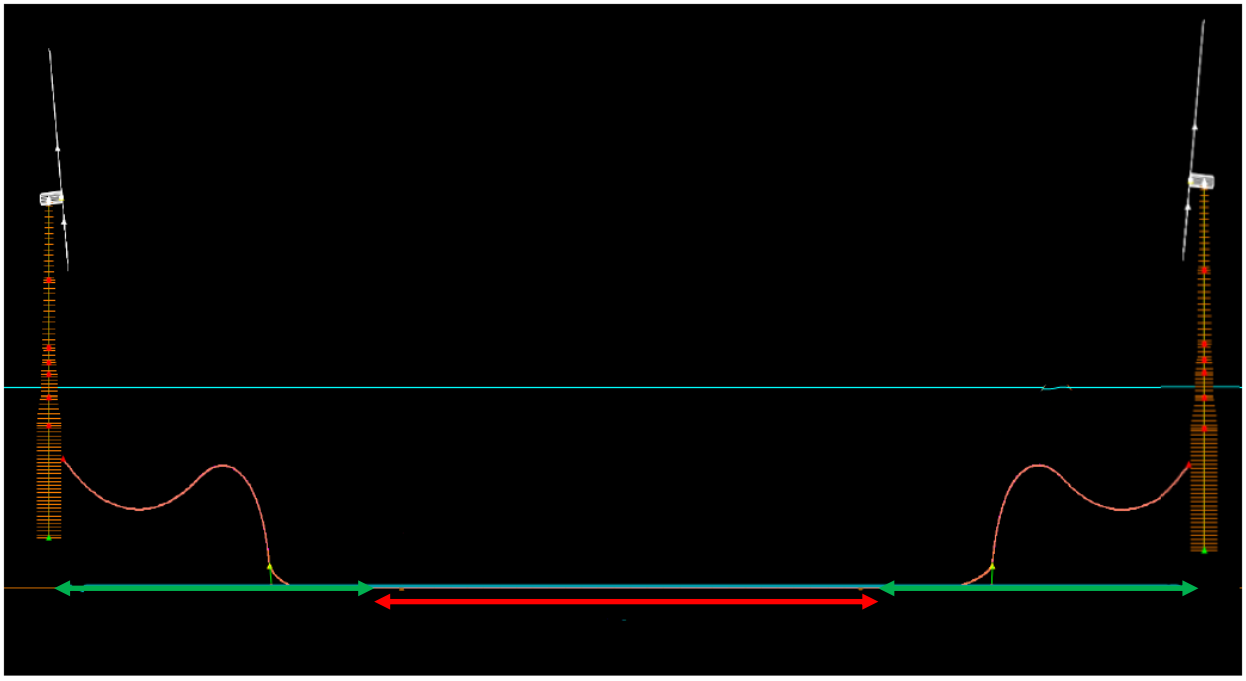
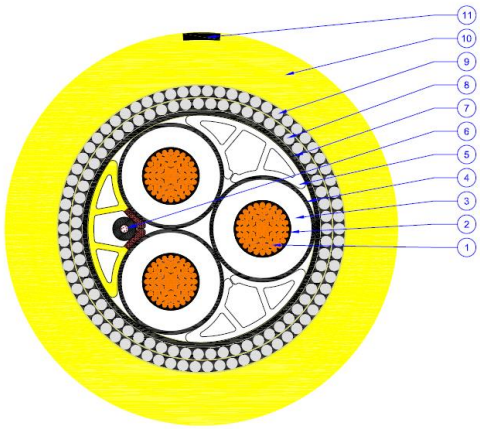


Figure 4-3: Infield cables between two turbines.

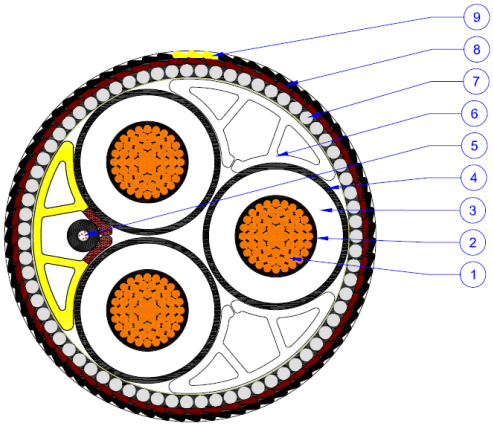


POS.	QTY.	DESCRIPTION	NOM. THICKNESS, mm	NOM. DIAMETER, mm
11		BLACK STRIPE, APPROX. 13 mm WIDTH	-	-
10	2	OUTHER SHEATH (YELLOW), HE 6063	22	169
9	70	ARMOUR WIRE ROUND (WITH BITUMEN)	5	-
8	63	ARMOUR WIRE ROUND (WITH BITUMEN)	5	-
7		INNER SHEATH	2.2	103
6		FO CABLE 48 SM FIBRES	-	10
5	3	PROFILED PE FILLER	-	-
4		INSULATION SCREEN, SEMICONDUCTIVE, LE 0592	-	45.5
3		INSULATION, LS 4201 S	8.0	-
2		CONDUCTOR SCREEN, SEMICONDUCTIVE, LE 0592	-	-
1	3	CONDUCTOR 400mm² CU	-	23.5

Figure 4-4: Cross section of the infield cables

4.5 Export cable

The total length of the export cable is approximately 27.5km including an approximately 500m dynamic section towards HS5. The diameter of the static part of the cable is 115mm and the diameter of the dynamic section of the export cable is 169mm, the same as the infield cables. The cross section of the infield cables is provided in the Figure 4-5 below.



POS.	QTY.	DESCRIPTION	NOM. THICKNESS, mm	NOM. DIAMETER, mm
9		ORANGE STRIPE, 3500 TEX	-	-
8	2	PP YARN, 3500 TEX	2	115
7	71	ARMOUR WIRE ROUND (WITH BITUMEN)	4.2	-
6	3	PROFILED PE FILLER	-	-
5		FO CABLE 48 SM FIBRES	-	10
4		INSULATION SCREEN, SEMICONDUCTIVE, LE 0592	-	45.5
3		INSULATION, LS 4201 S	8.0	-
2		CONDUCTOR SCREEN, SEMICONDUCTIVE, LE 0592	-	-
1	3	CONDUCTOR 400mm² CU	-	23.5

Figure 4-5: Cross section of the export cable

The static part of the export cable will be trenched and or rock dumped along its total entire length except from the dynamic riser section towards HS5. The buried sections of the export cable will be considered left in situ upon completion of field lifetime. The unprotected part of the dynamic section and the vertical hold back anchor will be removed.

5 Description of decommissioning measures

The decommissioning of HYS is planned to be done as one campaign during the summer of 2037. All items not buried will be removed, while buried items will be considered left in place.

When determining the most appropriate method for decommissioning, HYS will consider the “Best Practicable Environmental Option”, international standards, other sea users, along with due consideration of commercial and technical viability and HSE risks.

The decommissioning method will most likely be to reverse the installation. The current base case follows the process described in Table 5-1 below. The Hywind units will be disconnected from the mooring lines and anchors, and towed to a sheltered deep water location for dismantling. Mooring lines will be detached from anchors, and the infield cables and the dynamic part of the export cables, cut and brought to shore. The possibility for reuse will be considered for all items. Items that cannot be reused will be recycled as far as possible. Waste handling will in general be done according to prevailing rules and regulations.

Table 5-1: Indicative decommissioning process

#	Step	Vessels
1	Cut, disconnect and retrieve the infield cables and the dynamic part of the export cable Bring to shore for recycling (possibility for reuse will be considered)	Cable laying vessel / Supply vessel with ROV
2	Disconnect the mooring lines and tow Hywind units to shore for decommissioning at a certified yard.	Anchor handling tug supply vessel (AHTS) and tug boats
3	Disconnect mooring lines from anchors and bring on board vessel. Bring to shore for recycling (possibility for reuse will be considered)	AHTS vessel
4	Rock dumping: - the end section of the cables - any anchors that might protrude over the seabed	Rock dumping vessel

All items will be delivered to certified waste handling facilities for reuse or recycling. The Hywind units will be towed to an approved decommissioning yard for further dis-assembly, before the materials are sent for reuse or recycling. If reuse or recycling is not possible, incineration with energy recovery will be considered, whereas disposal will be the last option. Statoil is committed to ensuring that all waste is handled in a proper manner and according to best practice at the given time.

The following items will be considered left in place:

- The anchors
- The buried part of the export cable
- Buried sections of the infield cables

Removal of these items may not be commercially and technically viable, will involve high costs as well as HSE risks. An assessment will therefore be made to conclude on whether to leave the buried items in place or to remove them. If left in situ, protruding items visible at the sea bed will be protected by rock dumping. When making a decision on the decommissioning option, this will be based on tests set out by international conventions (IMO standards) and involve at least one of the five situations:

- the installation or structure will serve a new use
- entire removal would involve extreme cost
- entire removal would involve an unacceptable risk to personnel
- entire removal would involve an unacceptable risk to the marine environment
- the installation or structure weighs more than 4000 tonnes in air or is standing in more than 100m of water and could be left wholly or partially in place without causing unjustifiable interference with other uses of the sea

Abandonment of these items is not considered having a negative impact on fisheries since, any exposed items will be protected. Burial depth of cables will be minimum 0.5 meters. The likelihood that the buried items will be exposed in the long run is therefore considered to be low. HYS will have a survey program for anchors and cables during the entire lifetime and in that way gain knowledge on the risk of erosion and exposure. This will in turn create a good basis for a sound decision and rock dumping.

A more detailed assessment of the alternatives will be presented and the strategy for decommissioning of buried items agreed with relevant stakeholders when the project nears decommissioning phase.

6 Emergency Response

In general, any emergency situations during the decommissioning phase will be handled similarly as during the installation activities or operational phase.

The procedure for decommissioning of the Hywind Scotland infrastructure will be very similar to the installation activities, in most cases just performed in reverse. Similar safety measures as during installation will be introduced in order to reduce the risks, e.g. for loss of the WTG during de-tensioning of the anchor lines and during tow. Below is an overview of some of these mitigating measures:

- The Marine contracts for de-hookup of the offshore mooring system and towing the Floating Wind Turbines (FWT) to shore will be based on the DNV-GL offshore standards
- A Marine Warranty Surveyor (MWS) will be appointed and all operational documentation developed by the marine contractor will have to be accepted by MWS and Certificates of Approval will be issued by Marine Warranty Surveyor before any marine operation will start
- Additional 3rd party verification tasks may be identified by Statoil
- A de-commissioning operation is not time critical for the project and all marine operations will take place during summer season with calm weather.

In case of an incident, the vessel captain(s) will have the primary responsibility to report an incident both to the Coastguard Operations Centre, and to Statoil's 2nd line emergency preparedness organisation.

Statoil's 2nd line Emergency preparedness organisation in Great Yarmoth will perform the necessary reporting to the Marine Accident Investigation Branch (MAIB) and to the Health and Safety Executive (HSE) – ref. RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013).

The above notification routines may change in the years up to the decommissioning phase starts, if so the necessary emergency plans will be updated accordingly.

7 Environmental Impact Assessment

Hywind Scotland's Environmental Statement considered the potential impacts of decommissioning. No significant impacts were identified.

Impacts of potential rock dumping during decommissioning will be synonymous with those during construction and installation phase of the project. For the parts of the infrastructure which are buried and considered left in situ, the impacts will be synonymous with those during the operational phase of the project. No additional impact mechanisms have been identified.

When the project nears the decommissioning phase and once more detail is available on the specific activities associated with decommissioning, more detailed assessment of environmental impacts will be undertaken as part of the Decommissioning Programme.

8 Consultations with interested parties

Statoil regards consultation with stakeholders as an essential element to the successful development of HYS. Through the development of the project, from the initial Environmental Assessment, to the Supplementary Environmental Information as well as during post-consent, the principle of open consultation and transparency of information has been followed. Statoil intends to continue with this approach for the lifetime of the project including the decommissioning phase.

Consultation on the draft decommissioning programme has been undertaken, with all relevant stakeholders invited to comment including:

- Aberdeenshire Council
- Chamber of Shipping
- Civil Aviation Authority
- CHC Scotia Helicopter Services
- Department for Business, Energy and Industrial Strategy
- Joint Nature Conservation Committee
- Historic Environment Scotland
- Marine Scotland - Compliance
- Marine Scotland – Science
- Marine Scotland – Licensing Operations Team
- Maritime and Coastguard Agency
- Northern Lighthouse Board
- National Air Traffic Services (EnRoute)
- Royal Yacht Association (Scotland)
- Relevant Harbour Authority
- Scottish Environment Protection Agency
- Scottish Fisherman's Federation
- Scottish Natural Heritage
- Scottish Wildlife Trust
- The Crown Estate
- Transport Scotland
- UK Hydrographic Office

The Decommissioning Programme is available on Statoil's website (LINK)[2]. Comments received from stakeholders have been incorporated in to this document, where relevant, and noted for future reference. The consultation responses have been summarised and included in Annex 2 Stakeholder Consultation.

[2] https://www.statoil.com/en/how-and-why/impact-assessments.html#

HYS will continue to seek the opinions of stakeholders with further consultation undertaken in the years preceding decommissioning on both the programme and any environmental assessment undertaken, in order to minimise the impact on the environment and stakeholders.

9 Costs and Financial security

All required financial information has been provided in Annex 1 CONFIDENTIAL Hywind Scotland Pilot Park Financial Security Information. Please see this document for the relevant information.

10 Schedule

A full decommissioning schedule will be provided in due course. At this moment in time only a course and indicative decommissioning schedule is available.

The wind farm is expected to be in operation late Q3 or early Q4 2017 and has a design life of 20 years. The decommissioning is planned to be undertaken during Q2/Q3 2037. Activities at site are assumed to be done within a window of five months. An indicative schedule for decommissioning is given in Figure 10-1. Decommissioning of the WTG, tower and substructure will continue after this at the decommissioning facility. Recycling activities will also extend beyond this schedule.

Indicative schedule for decommissioning		2037				
#	Step	May	June	July	August	September
1	Cut, disconnect and retrieve infield cables and dynamic part of the export cable. Bring to shore for recycling (possibility for reuse will be considered)					
2	Disconnect mooring lines and tow Hywind units to shore for decommissioning at a certified yard.					
3	Disconnect mooring lines from anchors and bring on board vessel. Bring to shore for recycling (possibility for reuse will be considered)					
4	Potential rock dumping					

Figure 10-1: Indicative schedule for decommissioning.

11 Project management and verification

This section will be further elaborated towards the final stages of the project, when an updated Decommissioning Programme is provided and consulted on based on the final decommissioning options.

11.1 Review process

Statoil propose to undertake formal reviews of the Decommissioning Programme in consultation with the regulatory authority at the following times:

- Latest 1 years prior to the start of the provision of the financial security (end of operational year 9)

- The mid-point of the period of the financial security (5 years prior to decommissioning)
- Latest 1 years prior to decommissioning commencing

12 Sea-bed clearance

In line with the details provided above, Statoil is committed to covering the costs required to decommission HYS (in line with the Polluter Pays Principle) and ensuring the seabed has been cleared. Upon completion of decommissioning, a survey will be undertaken to ensure that all debris related to the development of the offshore wind farm has been removed, where required. The survey will enable identification and recovery of any debris located on the seabed which may have arisen from activities related to HYS and which may pose a risk to navigation.

The required survey area will be determined during the decommissioning phase of the project, taking into account best practice at the time and the views of stakeholders. Statoil is aware of the guidance for oil and gas installation which specifies a 500 m radius around any installation, however, due to the smaller scale of the installations Statoil proposes a smaller radius could be used e.g. 100m around the Hywind units and at the different locations of the anchors or rock dumping has taken place. The export cable will be inspected over the lifetime and results from those inspections should be considered when planning the surveys.

Discussions will also occur on the requirement for independent, third party involvement in the surveys to provide evidence that the site had been cleared. It is likely that an independent party would conduct the surveys and provide an independent report on the findings.

13 Restoration of the site

The wind farm site will be restored, as far as practical, to its pre-construction state. Further details on how the site will be restored will be provided in the updated Decommissioning Programme towards the end of the project's life.

14 Post-decommissioning monitoring, maintenance and management of the site

If it is concluded that some of the installations are to be left in place, some post decommissioning activities may be required to identify and mitigate any unexpected risks related to the remaining installations. This could be due to the foundations or cables becoming exposed through natural sediment movement. The level of post decommissioning activities will be determined based on the scale of the remaining infrastructure, the risk of exposure, the risk to marine users and any surveys undertaken.

The survey program during the operational phase will bring significant knowledge to the design of such a monitoring programme.

The requirement for and details of the post-decommissioning monitoring, maintenance and management will be discussed and agreed with stakeholders during decommissioning. Any outcomes from the results of monitoring and maintenance work will be provided to Marine Scotland and relevant stakeholders once available.

Annex 1 CONFIDENTIAL Hywind Scotland Pilot Park Financial Security Information

Annex 2 Stakeholder Consultation

Consultation comments have been received from a number of parties. Summarised comments have been set out in the table below including what actions were taken to address the comments.

Stakeholder	Date received	Comment	Response
Aberdeenshire Council	16 August 2016	There is nothing of particular concern to Aberdeenshire Council in relation to the activities proposed as part of decommissioning of the Hywind Project.	N/A
Chamber of Shipping	11 August 2016	The UK Chamber of Shipping has no comment to make on the Hywind Scotland Pilot Park decommissioning programme	N/A
Civil Aviation Authority	11 August 2016	The Defence Geographic Centre should be informed (mail to dvof@mod.uk) of the locations, heights, lighting status of the turbines and the estimated and actual dates of decommissioning to allow for the appropriate amendments to Aviation Charts to take place, for safety purposes.	Noted
		Any structure the height of which is 60m or more above the level of the sea at the highest astronomical tide which is situated in waters within or adjacent to the United Kingdom up to the seaward limits of the territorial sea should be lit in accordance with the Air Navigation Order and should be appropriately marked; this will include any lifting equipment.	Noted. Marking and lighting will be according to navigational and aviation lighting requirements and is described in the Hywind Scotland's Lighting and Marking Plan (ref. Plan for Construction Activities 2017).
		The CAA should be notified of the proposed route and timings at least one month prior to commencement of the first turbine being towed back to shore to ensure that aviation stakeholders can be appropriately notified. It is likely that the CAA would require aviation lighting to be fitted to the turbines during the tow but the CAA would be happy to discuss this requirement with the developers should consent be granted.	Noted. CAA will be informed in due time before the floating wind turbines are being towed to shore for decommissioning. Aviation lighting requirements will be agreed with CAA prior to towing.
CHC Scotia Helicopter Services	29 August 2016	No comments at the present time, the plan overview as far as it effects our operations seems sensible.	N/A
Department for Business, Energy and Industrial Strategy	13 January 2013	The arguments for leaving infrastructure in place should be in line with the tests set out under international conventions – e.g. which of the tests as set out at page 57 of BEIS' decommissioning guidance applies, and why.	Noted. The document has been amended to reflect this (Chapter 5).

JNCC & SNH	15 July 2016	JNCC & SNH welcome a more detailed assessment of environmental impacts as part of the decommissioning programme. The information required should be discussed and agreed based on the outputs from surveying and monitoring during wind farm construction and operation.	Noted
		The DECC guidelines (2011) do not account for the enactment of the Marine (Scotland) Act 2010, therefore guidance and/or arrangements for decommissioning may change prior to the commencement of decommissioning at the Hywind site. JNCC & SNH request consultation on the final decommissioning programme by the appropriate body (DECC, MS-LOT or other) at a suitable point prior to commencement of decommissioning.	Noted
Historic Environment Scotland	8 July 2016	HES is content that the decommissioning programme will be reviewed prior to decommissioning activities taking place and that changes to the baseline including historic environment interests will inform the decision as to whether a new or updated EIA is required. Significant impacts on their interests is considered unlikely.	Noted
Marine Scotland - Compliance	11 August 2016	No comments	N/A
Marine Scotland - Science	10 August 2016	A full decommissioning plan should be reappraised by Marine Scotland Science closer to the end of the lifespan of the project. Particular threats to marine mammals from the decommissioning process as described, is not foreseen. This may change in the light of new evidence, and it is worth considering the implications of new conservation legislation, for example the Southern Trench proposed Marine Protected Area, proposed for the protection of minke whales, and the possibility of other protected sites that may arise in time. All cetaceans in UK waters are protected as European Protected Species, and activities with the potential to cause disturbance may require licensing.	Noted
		Developers must ensure that items left in situ pose no risk to other marine users (e.g. commercial fisheries). This can be achieved either by removing all items having the potential to be exposed over time or applying to appropriately mark these areas.	Statoil's ambition is to reduce the environmental impact as much as reasonably possible. Based on current assessments it is not

			evident that removal of all items has the lowest impact. This will therefore have to be further assessed and the final decision will be based on updated knowledge at the time. If items are to be left in situ they will be protected, marked and communicated appropriately.
Marine Scotland – Licensing Operations Team	11 January 2017	The decommissioning programme needs to incorporate a review dates.	Noted. This has been included in Chapter 11.1.
Maritime and Coastguard Agency	24 June 2016	No comments	N/A
Northern Lighthouse Board	11 July 2016	Any items remaining in the marine environment must be communicated to the fishing industry through the appropriate bulletins and publications in order that they are informed of any possible subsea hazard, and to the UKHO in order that chart BA1409 can be correctly updated.	Noted
		NLB would require an opportunity to comment on the marking and lighting of the site prior to the decommissioning commencing and the extinguishing of any navigational lighting.	Noted
National Air Traffic Services (EnRoute)	27 June 2016	No comments	N/A
Royal Yacht Association (Scotland)	10 August 2016	No comments	N/A
Relevant Harbour Authority	11 August 2016	No comments nor objections	N/A
Scottish Environment Protection Agency	12 July 2016	SEPA has no objection to this application provided the devices and as much of the support infrastructure is removed and all waste materials are removed and reused, recycled or disposed of at a licensed onshore site. The seabed and/or shoreline should be restored to as	Noted

		near its former natural condition as possible on completion of the works.	
		The following should be considered: 1) The decommissioning plan should take account of the need for the safe removal and disposal of all oils/liquids present on the site before they are shipped onshore for appropriate disposal. 2) Consideration needs to be given as to removal of marine growth. If this comes back onshore with the decommissioned items of plant then its removal and disposal may require a special waste licence.	1) Noted. The only oils and fluids will be in the turbine – these will be disposed of in a safe manner. 2) Noted. Considerations will be made when updating the programme. The final approach will be done based on updated knowledge.
		Advice in regard to requirements for a special waste licence can be obtained from the local operations team in our Fraserburgh office on: Shaw House, Mid Street, Fraserburgh, AB43 9JN, Tel: 01346 510502.	Noted
Scottish Fishermen's Federation	5 October 2016	SFF expects restoration of the site and cable to pre-development status	Statoil's ambition is to reduce the environmental impact as much as reasonably possible. Based on current assessments it is not evident that removal of all items has the lowest impact. This will therefore have to be further assessed and the final decision will be based on updated knowledge at the time.
Scottish Wildlife Trust	18 July 2016	Complete removal of all infrastructure should be the proposed plan.	Statoil's ambition is to reduce the environmental impact as much as reasonably possible. Based on current assessments it is not evident that removal of all items has the lowest impact. This will therefore have to be further assessed and the final decision will be based on updated knowledge at the time.
		The following points require more information: 1) The 15 anchors stand 1.3 m above the seafloor. If left in place, how would they be treated to ensure that they are not a potential hazard for other marine users?	1) See Chapter 5: "If left in situ, protruding items visible at the sea bed will be protected by rock dumping."

		2) Buried cables can become a snagging hazard for fishermen if they become exposed – especially for scallop dredging, which is one of the main fishing industries in the area. How can Statoil ensure that these cables will not become a hazard in the future if they are not completely removed? 3) There is little information on post decommissioning monitoring of the site. If some infrastructure is left in place, for how long, and how often, will the site be monitored to ensure the remaining infrastructure does not become a future hazard for other marine users? 4) In the final decommissioning plan, the Trust would like to see a detailed comparative assessment of the different options available for decommissioning. 5) Prior to moving the turbines to shallow water for dismantling, the Trust would like to see a survey of all organisms growing on the structure carried out and for any non-native species to be removed.	2) See Chapter 5: "If left in situ, protruding items visible at the sea bed will be protected by rock dumping." 3) See Chapter 14. This will be decided based on 20 years of experience of monitoring the seabed. 4) Noted 5) Noted. Mapping of organisms growing on the structures will be carried out as part of the environmental monitoring programme and appropriate biosecurity measures implemented, ref. Hywind Scotland's Project Environmental Monitoring Programme (PEMP).
The Crown Estate	13 January 2017	Like UK Government represented by BEIS, The Crown Estate has adopted a general presumption that the whole of all disused infrastructure associated with offshore renewable installations should be removed, including foundations (pin piles/anchors) and cables, this being in accordance with decommissioning obligations. Statoil has explained that they could remove the suction buckets and the decommissioning report is based on the current scenario that the seabed will be returned to the pre-construction condition i.e. with everything removed. Statoil recognise that the environmental review for the final decommissioning plan may recommend the suction buckets staying in situ. This is in line with the Energy Act possible exceptions for future iterations but as they are not suggesting this as the position today I would not expect to see the evidence of that. Only in a future iteration of the decommissioning plan, when the advised position is to leave the suction buckets in place would I expect to see the evidence that supports the exception. The Crown Estate reserve their position until the final decommissioning programme (before decommissioning commences) is produced, as to whether complete removal would be appropriate based on the latest technological advances in decommissioning, environmental	Noted

		circumstances and other relevant parameters. If the final agreed decommissioning programme provides for less than the complete removal of any installed equipment we will wish to be provided with some form of indemnity, or insurance, underwritten by a suitable and approved entity for the residual risk the landowner may inherit.	
Transport Scotland	15 July 2016	The level of trip generation and potential impact any vehicles may have on the Trunk Road network should be described in the final decommissioning programme.	The current base case is that this will be done at a decommissioning site at the shore and that transport will happen at sea. Statoil acknowledge the fact that plans might change and that transportation by road may be a part of the logistical solution. It is considered too early to estimate the potential volume of such a solution, but it is noted that this should be evaluated when the final decommissioning programme is developed.
UK Hydrographic Office		NIL response	N/A