



Marine Management Organisation Marine Licence

1 Introduction

This is a licence granted by the Marine Management Organisation on behalf of the Secretary of State to authorise the licence holder to carry on activities for which a licence is required under Part 4 of the Marine and Coastal Access Act 2009.

1.1 Licence number

The licence number for this licence is L/2011/00153/15

1.2 Licence holder

The licence holder is the person or organisation set out below:

Name / company name	SCIRA OFFSHORE ENERGY LTD
Company registration number (if applicable)	5119310
Address	STATOIL UK LTD ONE KINGDOM STREET LONDON W2 6BD
Contact within company	Russell Hill
Position within company (if applicable). State if company officer or director	Company Officer

1.3 Licence date

Version	16
Licence start date	08 October 2014
Licence end date	30 April 2034
Date of original issue	07 August 2008
Date of variation issue	08 October 2014

1.4 Licence validity

This version of this licence is valid from the licence start date to the licence end date.

This version of this licence supersedes any earlier version of this licence. Any activity commenced under a previous version of this licence and which is also a licensed activity authorised by section 4 of this version of this licence may continue in accordance with the licence conditions in section 5 of this version of this licence.

Mr Andrew Souter
+44 (0)191 376 2789
andrew.souter@marinemanagement.org.uk

2 General

2.1 Interpretation

In this licence, terms are as defined in section 115 of the Marine and Coastal Access Act and the Interpretation Act 1978 unless otherwise stated.

- "licensed activity" means any activity set out in section 4 of this licence.
- "licence holder" means the person(s) or organisation(s) named in section 1 above to whom this licence is granted.
- "MMO" means the Marine Management Organisation.
- "mean high water springs" means the average of high water heights occurring at the time of spring tides.
- "sea bed" or "seabed" means the ground under the sea.
- "the 2009 Act" means the Marine and Coastal Access Act 2009.
- All times shall be taken to be the time on any given day.
- All geographical co-ordinates contained within this licence are in WGS84 format (latitude and longitude degrees and minutes to three decimal places) unless stated otherwise.

2.2 Contacts

Except where otherwise indicated, the main point of contact with the MMO and the address for email and postal returns and correspondence shall be:

Marine Management Organisation

Lancaster House

Hampshire Court

Newcastle upon Tyne

NE4 7YH

Tel:0300 123 1032

Fax:0191 376 2681

Email:marine.consents@marinemanagement.org.uk

Any references to any local MMO officer shall be the relevant officer in the area(s) located at:

Marine Management Organisation

Pakefield Road

Lowestoft

Suffolk

NR33 0HT

Tel: 01502 573149

Fax: 01502 514854

Email: lowestoft@marinemanagement.org.uk

Sector/Purpose of Works - Construction of an Offshore Wind Farm

Energy generation - Wind Power

Energy/communication structures - Cable, Turbine (wind)

3 Project overview

3.1 Project title

Sheringham Shoal Offshore Wind Farm

3.2 Project description

The wind farm will be located approximately 17 to 23km offshore from the north Norfolk coastal town of Sheringham and approximately 5km north of the offshore sand bank known as Sheringham Shoal. The wind farm will comprise between 45 and 108 turbines depending on size to achieve a total combined capacity of up to 315 MW located in water depths of approximately 15m to 22m at lowest astronomical tide (LAT). The wind turbine size will, be up to 7 MW. The minimum distance between turbines will be no less than 481 metres and the turbine height from the sea (MHWS) to blade tip when vertical will be no higher than 172 metres. The turbine rotor diameter shall not exceed 150 metres and the distance between the sea level (MHWS) and the blade tip at its lowest point will be no less than 22 metres. The array will also consist of 2 offshore substations and 1 meteorological mast. The array will be connected via inter array undersea cables between the offshore wind turbines and the 2 substations with 2 export undersea cables from the substation to shore at Weybourne Hope, North Norfolk.

3.3 Related marine licences

N/A

4 Licensed activities

This section sets out the licensed activities. The licensed activities are authorised to be carried on only in accordance with the activity details below and with the licence conditions as set out in section 5 of this licence.

Site 1 - Sheringham Shoal Export Cable Corridor	
Site location	52 56.9600'N 01 07.6300'E
	52 56.8600'N 01 09.1300'E
	52 57.2400'N 01 08.6800'E
	52 57.4600'N 01 08.4700'E
	52 57.6500'N 01 08.3300'E
	52 58.5000'N 01 08.2100'E
	53 00.7200'N 01 09.1700'E
	53 02.5000'N 01 09.0000'E
	53 03.0600'N 01 09.0600'E
	53 04.0600'N 01 08.9700'E
	53 06.1400'N 01 11.5400'E
	53 07.0800'N 01 07.6000'E
	53 04.0400'N 01 08.2100'E
	53 03.0700'N 01 08.3000'E
	53 02.4900'N 01 08.2400'E
	53 00.7600'N 01 08.4000'E
	52 58.5700'N 01 07.4500'E
	52 57.6900'N 01 07.4000'E
	52 57.5200'N 01 07.4300'E
	52 56.9600'N 01 07.6300'E

Site 2 - Sheringham Shoal Offshore Wind Farm	
Site location	53 10.4788'N 01 04.6665'E 53 07.2916'N 01 06.7490'E 53 05.7867'N 01 13.0286'E 53 08.9810'N 01 10.9461'E 53 10.4788'N 01 04.6665'E
Activity 2.1 - Methodology	
Activity type	Construction of new works
Activity location	Approximately 17km to 23km offshore from the north Norfolk coastal town of Sheringham and approximately 5km north of the offshore sand bank known as Sheringham Shoal.
Description	Construction of Sheringham Shoal Offshore Wind Farm
Methodology	<p>The works will be carried out using the following methodology:</p> <p>The foundations of the wind turbines will either be monopile, multipile, gravity base, suction caisson or a combination of these types.</p> <p>The monopile foundation will be either driven or driven and drilled. A steel transition piece will be fitted to the top of the foundation and grouted into place. The monopile will be transported to the site by either barge or being sealed and floated. In areas of potentially heavy scour, crushed stone may be placed on the sea bed prior to installation. The monopile will then be lifted into position and secured to the seabed using a suitable installation vessel.</p> <p>Multipile foundations:-</p> <p>Prior to the installation of the tripod foundation it is anticipated that the seabed may require levelling. Once on site, the tripod steel structure will be lifted and placed on the prepared seabed, where the structure would be temporarily supported by mudmats to prevent sinking into the seabed prior to installation. The mudmats could be made from aluminium or steel. The tripod would be secured to the seabed by driving piles through the tripod feet. The piles would be typically driven by conventional surface/underwater hammer however, where there is a particularly hard stratum to penetrate, drilling could be required. As for monopile installation drilling would be achieved by utilising a drive-drill-drive approach. The</p>

	<p>structure could be connected to the piles with conventional grouted tubular pile sleeve connections. As with the monopile foundation, scour protection may be considered for the tripod foundation.</p> <p>Gravity based foundations may require preparation of the seabed by levelling or placement of a layer of crushed rock. The gravity base may be either pre-constructed and towed to site or constructed on the flat deck of a barge and transported to site. Once at the site the ballast compartments would be flooded to allow a controlled descent. Once in position the ballast compartments would be filled with heavy stones or hematite.</p> <p>Suction Caisons may be used as an alternative to driven or drilled piles and may be used with monopole or multipile foundations. The seabed may require levelling and the caisson may be pre-constructed as an integral part of the foundation unit.</p> <p>Up to 2 substations may be installed using any of the above foundation types or a purpose designed steel framed foundation.</p> <p>A meteorological mast will be installed as part of the development in order to measure ambient wind speed.</p> <p>The inter-turbine cables may be buried either by ploughing or trenching/jetting with a target depth of 1-3 metres. The 2 export cables will be approximately 100 metres apart for the majority of the route and buried to a depth of between 0.5 meters and 3 meters, depending on ground conditions.</p>
Programme of works	7 August 2008 to 30 April 2034

5 Licence conditions

5.1 General conditions

5.1.1 Notification of commencement

The licence holder must notify the MMO prior to the commencement of the first instance of any licensed activity. This notice must be received by the MMO no less than five working days before the commencement of that licensed activity.

5.1.2 Licence conditions binding other parties

Where provisions under section 71(5) of the 2009 Act apply, all conditions attached to this licence apply to any person who for the time being owns, occupies or enjoys any use of the licensed activities for which this licence has been granted.

5.1.3 Agents / contractors / sub-contractors

The licence holder must notify the MMO in writing of any agents, contractors or sub-contractors that will carry on any licensed activity listed in section 4 of this licence on behalf of the licence holder. Such notification must be received by the MMO no less than 24 hours before the commencement of the licensed activity.

The licence holder must ensure that a copy of this licence and any subsequent revisions or amendments has been provided to, read and understood by any agents, contractors or sub-contractors that will carry on any licensed activity listed in section 4 of this licence on behalf of the licence holder.

5.1.4 Vessels

The licence holder must notify the MMO in writing of any vessel being used to carry on any licensed activity listed in section 4 of this licence on behalf of the licence holder. Such notification must be received by the MMO no less than 24 hours before the commencement of the licensed activity. Notification must include the master's name, vessel type, vessel IMO number and vessel owner or operating company.

The licence holder must ensure that a copy of this licence and any subsequent revisions or amendments has been read and understood by the masters of any vessel being used to carry on any licensed activity listed in section 4 of this licence, and that a copy of this licence is held on board any such vessel.

5.1.5 Changes to this licence

Should the licence holder become aware that any of the information on which the granting of this licence was based has changed or is likely to change, they must notify the MMO at the earliest opportunity. Failure to do so may render this licence invalid and may lead to enforcement action.

5.2 Project specific conditions

This section sets out project specific conditions relating to the licensed activities as set out in section 4 of this licence.

Prior to the Commencement of the Works	
5.2.1	<p>The Licence Holder must submit and agree a detailed schedule of planned construction and monitoring with the Licensing Authority at least four months prior to the commencement of any construction works. This schedule should contain timings for mobilisation of plant, delivery of materials and all installation works and timings for preparing and submitting survey specifications, data collection, analysis, report writing and dates that monitoring reports will be submitted to the Licensing Authority. Variations of the timetable and schedule must be confirmed immediately, in writing, with the Licensing Authority and include an assessment of the potential impact on the Monitoring Programme detailed in this licence and its Annexes.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.2	<p>The Licence Holder must submit a Method Statement to the Licensing Authority at least four months prior to the commencement of any construction works. This Method Statement must describe the construction works in detail confirming the final choice of foundation type, installation techniques, cable type and specification (including any additional shielding to mitigate potential impacts of EMF), cable burial depths, cable laying technique, contractors and vessels. Construction cannot commence until the Licensing Authority has given its written acceptance of the method statement. If the methods described differ significantly from those discussed in the Environmental Statement the Licensing Authority reserves the right to vary this Licence to ensure that appropriate conditions are in place. The method statement must be consistent with the details submitted in the schedule referred to in condition 5.2.1.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.3	<p>The Licence Holder must produce a Marine Pollution Contingency Plan (MPCP) for spills and collision incidents during construction and operation, and this must be adhered to and be included in the Project Environmental Management Plan (PEMP) referred to in condition 5.2.8. The Contingency Plan must take into account existing plans for all operations, including offshore installations, that may have an influence on the MPCP. Practices used to refuel vessels at</p>

	<p>sea must conform to industry standards. The Contingency Plan must outline plans, including methods and procedures, to deal with any potential oil leaks within the turbine nacelle immediately so as to ensure no such material comes into contact with the marine environment.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.4	<p>The Licence Holder must ensure that a Notice to Mariners is issued at least 10 days prior to works commencing warning of the start date for the construction of the wind farm and the expected supply/construction vessel routes from the local service ports to the array. A second Notice to Mariners must be issued warning of the timing and route of laying the submarine cable. These Notices to Mariners must be updated and reissued at appropriate intervals and supplemented by VHF radio broadcasts as deemed appropriate and agreed with the Maritime and Coastguard Organisation. Dates for these notices should be included in the agreed schedule required under condition 5.2.1.</p> <p>Reason: To ensure safety of navigation.</p>
5.2.5	<p>The Licence Holder must ensure that a suitably qualified and experienced liaison officer or officers are appointed for fisheries liaison and the Licensing Authority notified of their identity and credentials before any construction work commences by including details as part of the PEMP referred to in condition 5.2.8. Liaison officers must establish and maintain effective communications between the Licence Holder, contractors, fishermen, conservation groups and other users of the sea during the project.</p> <p>Reason: To minimise disruption to local fishing activity.</p>
5.2.6	<p>The Licence Holder must ensure that a suitably qualified and experienced liaison officer or officers are appointed for environmental liaison and the Licensing Authority notified of their identity and credentials before any construction work commences by including details as part of the PEMP referred to in condition 5.2.8. Liaison officers must establish and maintain effective communications between the Licence Holder, contractors, fishermen, conservation groups and other users of the sea during the project.</p> <p>Reason:</p>

	To minimise the environmental impacts of the works.
5.2.7	<p>The Licence Holder must ensure that these liaison officer's environmental remits include:</p> <p>Monitoring compliance with the commitments made in the Environmental Statement and the PEMP (see condition 5.2.8).</p> <ul style="list-style-type: none"> -Providing a central point of contact for the Monitoring Programme. -Establishing and maintaining effective communications between the Licence Holder, contractors, fishermen, conservation groups and other users of the sea concerning the overall project and any amendments to the method statement and site environmental procedures. -Inducting site personnel on site / works environmental policy and procedures. -Ensuring the safety of any persons engaged in fishing operations on the site of the wind farm in addition to any Safety Zone or Health and Safety Executive requirements during the conduct of any fisheries survey. -Ensuring that information is made available and circulated in a timely manner to minimise interference with fishing operations and other users of the sea. <p>Delivering the functions and duties specified in the Archaeological Protocol for construction monitoring.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.8	<p>The Licence Holder must submit a copy of a Project Environmental Management Plan (PEMP) for the approval of the Licensing Authority, in consultation with Cefas, Natural England and English Heritage at least four months prior to the proposed commencement of construction work.</p> <p>Construction must not commence until such time as the Project Environmental Management Plan has been agreed in writing by the Licensing Authority.</p> <p>Reason:</p>

	To minimise the environmental impacts of the works.
5.2.9	<p>The Licence Holder must submit a copy of a Scour Protection Management Plan for the approval of the Licensing Authority, in consultation with Cefas and Natural England at least four months prior to the proposed commencement of construction work. The plan must detail the need, type, sources, quantity and installation methods for scour protection.</p> <p>Construction must not commence until such time as the Scour Protection Management Plan has been agreed in writing by the Licensing Authority.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.10	<p>The Licence Holder must ensure that no construction activities commence until the Licence Holder has agreed in writing with the Licensing Authority, in consultation with Natural England, a Marine Mammal Mitigation Programme (MMMP) for the mitigation of potential impacts on marine mammals. The MMMP must be submitted to the Licensing Authority in the schedule referred to in condition 5.2.1.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.11	<p>The Licence Holder must ensure that suitably qualified and experienced Marine Mammal Observers (MMO) are appointed and the Licensing Authority and Natural England notified of their identity and credentials, within the MMMP referred to in condition 5.2.10, before any construction work commences. The MMO must maintain a record of any sightings of marine mammals, basking sharks and turtles within the Marine Mammal Monitoring Zone and action taken to avoid any disturbance being caused to them.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.12	<p>The Licence Holder will prepare a Written Scheme of Investigation in conjunction with the advice of English Heritage and Norfolk County Council to detail the archaeological assessment and mitigation works offshore and within the intertidal area necessary to inform the detailed delivery of the project (inclusive of turbine area and export cable route).</p> <p>The Written Scheme of Investigation will be prepared and agreed with the Licensing Authority, English Heritage and</p>

	<p>Norfolk County Council four months in advance of any further survey work commissioned to aid delivery of the construction works. The Written Scheme of Investigation must include:</p> <ul style="list-style-type: none"> -objectives; -responsibilities of developer, archaeological consultant, contractor, curators (national and local); -methodology for further site investigation including survey planning including specifications for geophysical, geotechnical and diver/ROV investigations; -archaeological analysis and reporting of survey data and diver/ROV investigation to licensing authority and curators; -delivery of mitigation including use of archaeological construction exclusion zones in agreement with curators; -monitoring during construction through to decommissioning; and conservation, publication and archiving duties for archaeological material; -an Archaeological Protocol for the prompt reporting and recording of archaeological remains encountered, or suspected, during all phases of construction, operation and decommissioning. <p>Reason: To ensure the integrity of marine archaeological features of the area is not compromised.</p>
5.2.13	<p>The Licence Holder must report any material within the legal definition of "wreck" recovered during pre-construction investigations, and during construction activities, to the Receiver of Wreck as required by law under the Merchant Shipping Act 1995.</p> <p>Reason: To ensure the integrity of marine archaeological features of the area is not compromised.</p>
5.2.14	<p>The Licence Holder shall carry out environmental monitoring in accordance with conditions 5.2.15 to 5.2.22, 5.2.42 , 5.2.43 and 5.2.53.</p>

	<p>Such monitoring shall include pre-construction monitoring for a minimum of one year prior to the commencement of construction, to provide a baseline for subsequent monitoring of the effects of the wind farm, construction and post-construction monitoring programme following the completion of the works. Further monitoring requirements may be imposed by the Licensing Authority in the light of the results.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.15	<p>The Licence Holder must ensure that a proposal for the specification of the pre-construction (baseline) monitoring is submitted to the Licensing Authority, for agreement in consultation with Cefas and Natural England, two months prior to the commencement of the monitoring works.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.16	<p>The Licence Holder must ensure that the pre-construction (baseline) monitoring report is submitted to the Licensing Authority, for agreement with Cefas and Natural England one month prior to the commencement of construction works.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.17	<p>The Licence Holder shall not commence construction until such time as a programme ("the Monitoring Programme") of sedimentary, benthic and other monitoring, as outlined in Annex 1 and Annex 2 attached to this Schedule, has been agreed in writing by the Licensing Authority. The full specification for the Monitoring Programme will be subject to separate written agreement with the Licensing Authority following consultation with Cefas, and Natural England at least four months prior to the proposed commencement of the construction works. The Monitoring Programme shall include a timetable for construction and post construction monitoring and an annual and interim reporting mechanism. Monitoring must be carried out at the same time each year for comparative purposes.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.18	<p>The Licence Holder must carry out a pre-construction survey to determine the location and abundance of an Annex 1</p>

	<p>habitat in the vicinity of the array and cable route. Should an Annex 1 habitat be identified in the area of the proposed array the licence holder is required to undertake an assessment of the need to micro-site individual turbine structures, intra array cable or the export cable. If micro siting is required the Licence holder must inform the Licensing Authority immediately. The results of the survey and assessment shall be submitted to the Licensing Authority and Natural England within one month of the completion of the survey and no construction is to commence without the written agreement of the Licensing Authority.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.19	<p>The Licence Holder must provide the Licensing Authority with the technical specifications for the cables including a desk-based assessment of the attenuation of electro-magnetic field strengths, shielding and cable burial depth (see Annex 1, 4), to be submitted to the Licensing authority with the cable laying plan referred to in condition 5.2.23.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.20	<p>The Licence Holder shall carry out ornithological monitoring as outlined in Annex 2 attached to this Schedule. The Licence Holder must submit the Ornithological Monitoring Programme (OMP) at least four months prior to the commencement of pre-construction monitoring. The Licence Holder shall not commence construction until the full specification for the OMP has been agreed with the Licensing Authority following consultation with Natural England. The Ornithological Monitoring Programme shall include a timetable for an annual and interim reporting mechanism.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.21	<p>The Licence Holder shall submit the reports required under the Ornithological Monitoring Programme to the Licensing Authority and Natural England at the appropriate time in accordance with the agreed timetable. Each report must be forwarded to the Licensing Authority and Natural England by the date specified in the Ornithological Monitoring Programme.</p> <p>Reason: To minimise the environmental impacts of the works.</p>

5.2.22	<p>The Licence Holder must undertake two (one winter and one summer) high resolution swath-bathymetric surveys per annum (including a pre-construction baseline) of the wind farm intra-array and export cable route to assess the extent of any changes to bedform morphology. Should additional cable protection be required (e.g. rock armour) a separate application must be made for a Marine Licence under the Marine and Coastal Access Act 2009.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.23	<p>A detailed export and intra-array cable laying plan, including cable landfall works, should be presented to the Licensing Authority for approval, at least four months prior to the proposed commencement of construction works, as indicated in the schedule required under condition 5.2.1 . The plan should use detailed geotechnical data to ascertain optimal cable burial depth along the length of the export cable (including works in the inter-tidal zone). This should be presented in conjunction with work undertaken to identify scour protection / armouring works required to protect the cable. The plan should detail the methods to be used for laying the cable, minimising where possible the use of jetting techniques. Cable laying in the vicinity of Annex 1 habitats e.g. <i>Sabillaria spinulosa</i>) shall not take place until such time as the Licensing Authority, in consultation with Cefas, Natural England and English Heritage, has approved the cable laying plan required under this condition.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.24	<p>All the above conditions are also applicable to the meteorological masts and offshore substations (as appropriate), which must be considered as an integral part of the development.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.25	<p>If any foundation type, other than monopiles, are to be used in the construction of the Sheringham Shoal offshore wind farm (e.g. gravity base, multipile etc) the Licence Holder must ensure that detailed plans of the materials, installation requirements, methods and techniques and an assessment of the associated physical and biological environmental effects is submitted to the licensing authority at least 6 months prior to the commencement of any construction works. Construction work will not be permitted to commence until the Licensing Authority provided written confirmation that it is content with the supporting evidence on environmental effects.</p>

	Reason: To minimise the environmental impacts of the works.
5.2.26	The Licence Holder must ensure that beach profiles are undertaken pre-construction over summer and winter (with additional surveys undertake as required after significant storms) to establish the natural variations in elevation to ensure that the cable is protected. The specifications for these studies should be agreed with the Licensing Authority and the Environment Agency and the results supplied to the Environment Agency archive. Reason: To minimise the environmental impacts of the works.
5.2.27	The Licence Holder must ensure that prior to and during the inshore cable laying operation, the contractor must liaise with the local Harbour Master at Wisbech to ensure that any local navigation issues, within his jurisdiction, arising as a result of the works, are addressed and local Notices to Mariners are issued as necessary. Reason: To ensure safety of navigation.
5.2.28	The Licence Holder must ensure that details of the works are published prior to commencement, in the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry of the vessel routes, timings and locations They can be contacted at:- Kingfisher, Sea Fish Industry Authority, Seafish House, St Andrew's Dock, Hull. HU3 4QE. Email: kingfisher@seafish.co.uk, Website: www.seafish.org. Tel: 01482 327837 Fax 01482 223310. Reason: To ensure safety of navigation.
During The Works	
5.2.29	The licence holder must create, maintain and submit to the Licensing Authority a detailed transportation audit sheet prior to sailing, for all aspects of the wind farm construction. The audit sheet should include loading facility, vessels, equipment, shipment routes, schedules and all materials (e.g. piles, cables, blades, nacelles, chemicals etc). Any changes to the components of this audit sheet should be notified to the Licensing Authority immediately. If the Licensing Authority suspects the audit sheet has been tampered with or any materials associated with the construction works have

	<p>been lost and investigation followed by the appropriate enforcement action will be initiated.</p> <p>The Licence Holder must also undertake a side scan sonar survey in grid lines (within operational safety constraints), across the area of development (includes turbine array, cable route, and any vessel access routes from UK local service port(s) to the construction site. Such surveys should be undertaken pre and post construction. Local fishermen must be invited to send a representative to be present during the survey. All obstructions found on the seabed must be plotted. If the Licensing Authority suspects any of these new obstructions are associated with the construction works they must be removed at the developers expense.</p> <p>Reason: To ensure any objects lost at sea can be identified.</p>
5.2.30	<p>The Licence Holder must ensure that all chemicals utilised in the construction operations must be selected from the List of Notified Chemicals assessed for use by the offshore oil and gas industry under the Offshore Chemicals Regulations 2002 (this list can be viewed/downloaded at www.cefas.co.uk). Should any system other than water-based mud be considered for use in the drilling operation, written approval and guidance of disposal of any arisings must be sought from the Licensing Authority.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.31	<p>The Licence Holder must ensure that any chemical agents placed within the void of the monopile, e.g. biocides, corrosion inhibitors, are selected from the List of Notified Chemicals (see condition 5.2.30). The use of any chemical not contained on this list will require prior consent from the Licensing Authority following a comparable ecotoxicological hazard/risk assessment undertaken at the Licence Holders own expense.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.32	<p>The Licence Holder must ensure that all protective coatings and paints used are suitable for use in the marine environment and, where necessary, are approved by the Health and Safety Executive. Such coatings should be utilised in accordance with best environmental practice.</p>

	Reason: To minimise the environmental impacts of the works.
5.2.33	The Licence Holder must ensure that storage, handling and transport of fuels, lubricants, chemicals during construction on vessels and equipment should prevent releases to the marine environment, i.e. bunding should be 10% greater than the total volume of all reservoirs, containers of such substances. Reason: To minimise the environmental impacts of the works.
5.2.34	The Licence Holder must ensure that all reasonable care is taken to prevent the accidental release of chemicals (including cements, and grouts) into the marine environment. To facilitate this a risk assessment of all chemical usage should be undertaken four months prior to construction and submitted to the Licensing Authority for approval. This risk assessment should include how and when the chemicals are used, stored and transported; best practice guidelines for the equipment/techniques used; the integrity of the equipment and the risk of spills and must be included in the MPCP. Reason: To minimise the environmental impacts of the works.
5.2.35	The Licence holder must ensure that piling activities do not commence until half an hour has elapsed during which marine mammals have not been detected in or around the site. The detection should be undertaken both visually (by MMO) and acoustically using appropriate Passive Acoustic Monitoring (PAM) equipment. Both the observers and equipment must be deployed at a reasonable time (to be identified in the MMMP) before piling is due to commence. Reason: To minimise the environmental impacts of the works.
5.2.36	The Licence Holder must ensure that at times of poor visibility e.g night-time, foggy conditions and sea state greater than that associated with force 4 winds, enhanced acoustic monitoring of the zone is carried out prior to commencement of relevant construction activity. Reason: To minimise the environmental impacts of the works.

5.2.37	<p>The Licence Holder must ensure that piling commences using an agreed soft start procedure. The duration and nature of this procedure must be discussed and agreed in writing with the Licensing Authority and Natural England prior to commencement of operations and submitted in the MMMP referred to condition 5.2.10.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.38	<p>The Licence Holder must ensure that a reporting methodology is included in the MMMP to enable efficient communication between the MMOs and the skipper of the piling vessel.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.39	<p>The Licence Holder must adhere to the provisions in the Joint Nautical Archaeological Policy Committee Code of Practice for Seabed Development (2006) and COWRIE Historic Environment Guidance for the Offshore Renewable Energy Sector (2007).</p> <p>Reason: To ensure the integrity of marine archaeological features of the area is not compromised.</p>
5.2.40	<p>The Licence Holder must inform the Licensing Authority immediately, if archaeological construction exclusion zones are necessary. The results of any relevant surveys, as referred to in condition 5.2.1 the Written Scheme of Investigation, and archaeological assessments shall be submitted to the Licensing Authority, English Heritage and Norfolk County Council within six months of survey completion and no construction is to commence within the archaeological construction exclusion zone without the written agreement of the Licensing Authority.</p> <p>Reason: To ensure the integrity of marine archaeological features of the area is not compromised.</p>
5.2.41	<p>The Licence Holder must undertake measurements of the noise generated by the installation of the foundation pieces. Measurements will need to be taken at various distances for the first few foundation pieces (minimum of four) including during the 'soft start' procedure. The specification for these measurements should be agreed with the Licensing Authority, in consultation with Cefas and Natural England at least four months before the construction work commences. The results of these initial measurements should be processed and the report submitted to the Licensing Authority</p>

	<p>within six weeks of the installation of the first foundation piece. Assessment of this report by the Licensing Authority will determine whether or not any further noise monitoring is required. Should noise levels be significantly in excess of those predicted during the Environmental Impact Assessment process then further pile installation will not occur without the consent of the Licensing Authority.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.42	<p>The Licence Holder must develop plans for subsea noise and vibration from the turbines to be assessed and monitored during the operational phase of the wind farm. Before completion of the construction phase the Licence Holder must supply specification to the Licensing Authority of how it proposes to measure subsea noise and vibration. This date must be included in the schedule referred to in condition 5.2.1. These measurements must be taken at various frequencies across the sound spectrum at a selection of locations immediately adjacent to, and between turbines, within the array and outside the array at varying distances.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.43	<p>The Licence Holder must make every effort to ensure that the export cable in the inter tidal zone is buried either by trenching or ploughing. If jetting is to be considered the written authorisation of the Licensing Authority should be sought four months prior to works commencing. In requesting that jetting be permitted the Licence Holder must submit details of e.g. predicted re-suspended sediment plumes, sensitive habitats and species and area affected so that the Licensing Authority in consultation with Cefas and Natural England can make an informed decision.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.44	<p>If the use of jetting the export cable in the inter tidal zone is agreed, the Licence Holder will be required to carry out monitoring of suspended sediment concentrations within the area of jetting, and at a suitable control point outside the area. These monitoring reports must be forwarded to the Licensing Authority, Cefas, and Natural England within one month of the completion of the jetting.</p> <p>Reason:</p>

	To minimise the environmental impacts of the works.
5.2.45	<p>The Licence Holder must ensure that if the export cable across the inter tidal zone is buried using trenching, the excavation and subsequent backfilling should be carried out in such a way as to maintain the sediment profile (i.e. surface sediments should be replaced at the surface and not mixed with those excavated from the bottom of the cable trench).</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.46	<p>The Licence Holder must ensure that no work associated with the cable installation, including the positioning of anchor points of any attendance vessels, is carried out in construction exclusion zones.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.47	<p>The Licence Holder must ensure that if any jack up barges/ vessels are utilised during the works, when jacked up they should exhibit signals in accordance with the UK Standard Marking Schedule for Offshore Installations.</p> <p>Reason: To ensure safety of navigation.</p>
5.2.48	<p>The Licence Holder must ensure that, given the importance of the inshore areas as a crab and lobster fishery, open dialogue must be initiated and maintained with all local fishermen on the nature and scale of the cable laying operations, including the likelihood and spatial and temporal extent of any suspended sediment plumes and the potential effects on the biota from these activities. To validate the predictions made in the Environment Statement of minor environmental effects to crabs and lobsters the Licence Holder should undertake suspended sediment monitoring to provide reassurances, the specification for which should be agreed with the Licensing Authority at least four months prior to the commencement of any construction works.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.49	The Licence Holder must ensure no works associated with the cable installation within the beach zone will be carried

	<p>out during the ringed plover breeding season from 15th April to 1st August in any year, unless protected areas are put in place. The location and physical nature of such protected areas must be discussed and approved in writing by the Licensing Authority in consultation with Natural England prior to any installation thereof.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.50	<p>The Licence Holder must undertake herring spawning surveys (the specifications and submission dates for which should be agreed with the Licensing Authority and Cefas) to overlap with the 1st October to 15th November 2010 spawning season. If these surveys are concurrent with pile driving activity then a complete log of foundation locations, pile depth, pile driving duration and a series of noise monitoring transects should be undertaken and these data interpreted alongside the herring spawning survey results.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.51	<p>The Licence Holder must ensure a dedicated guard ship (with a crew experienced in such operations) shall be deployed to keep other vessels clear of operations during export cable installation.</p> <p>Reason: To ensure safety of navigation.</p>
Upon Completion Of The Works	
5.2.52	<p>The Licence Holder must ensure that any debris or temporary works placed below MHWS are removed on completion of the works authorised by this Licence. (NB Drill cuttings, if drilled with water-based muds, can be left on the seabed within the boundaries of the turbine array).</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.53	<p>The Licence Holder shall submit environmental monitoring reports to the Licensing Authority, Cefas and Natural England at the date specified in accordance with the Monitoring Programme and the schedule in accordance with condition 5.2.1 in order to allow the Licensing Authority to consider if any action may be required to mitigate or correct</p>

	<p>any adverse environmental effects which may be identified.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.54	<p>The Licence Holder must undertake a 100% coverage swath bathymetric survey around a sample of adjacent turbines to a distance of 3 turbine spacings within three months of completion of the construction of the wind farm to assess scour within the array. The number of turbines and the area of seabed surveyed must be agreed with the Licensing Authority in consultation with Cefas, Natural England and English Heritage based on the outputs of the computer models used to inform the Environmental Statement. The survey must be undertaken immediately after construction is complete and repeated at annual intervals for a period of 2 years. This shall specifically address the need for (additional) scour protection around the turbine pylons. The Licence Holder must submit the data in the form of a report to the Licensing Authority, including proposals for scour protection measures by the date specified in the schedule required under condition 5.2.1. Any proposal to install scour protection measures should show consideration of other methods, if rock dumping is proposed.</p> <p>Reason: To ensure the structural integrity of the turbines.</p>
5.2.55	<p>The Licence Holder must ensure that if the monitoring results carried out under condition 5.2.54 indicate that scour protection is not required, or if the Licence Holder's plans for scour protection differs substantively from the measures detailed in the Environmental Statement and supplementary information, the Licence Holder must seek approval from the Licensing Authority for the change in the works previously notified to the Licensing Authority and if necessary provide an amended version of the scour protection management plan for approval by the Licensing Authority. The use of rock dumping should be minimised.</p> <p>Reason: To minimise the environmental impacts of the works.</p>
5.2.56	<p>The Licence Holder must carry out similar surveys as in condition 5.2.54 in the event of any major storm events likely to result in significant sediment movements (i.e. greater than a 1 in 10 year wave event at this site in terms of wave height). Wave data is currently available free from http://www.cefas.co.uk/wavenet/default.htm.</p>

	<p>Reason: To ensure the structural integrity of the turbines.</p>
5.2.57	<p>This Licence does not authorise the deposit of materials for scour protection or cable armouring (including the remediation of cable spans or exposed cables) other than as detailed in the Environmental Statement.</p> <p>Reason: To minimise the environmental impacts of the works.</p>

6 Compliance and enforcement

This licence and its terms and conditions are issued under the Marine and Coastal Access Act 2009.

Any breach of the licence terms and conditions may lead to enforcement action being taken. This can include variation, revocation or suspension of the licence, the issuing of an enforcement notice, or criminal proceedings, which may carry a maximum penalty of an unlimited fine and / or a term of imprisonment of up to two years.

Your attention is drawn to Part 4 of the Marine and Coastal Access Act 2009, in particular sections 65, 85 and 89 which set out offences, and also to sections 86, 87 and 109 which concern defences. The MMO's Compliance and Enforcement Strategy can be found on our website (<https://www.gov.uk/government/publications/compliance-and-enforcement-strategy>).