FOOD AND ENVIRONMENT PROTECTION ACT 1985 : PART II (AS AMENDED) - DEPOSITS IN THE SEA IN CONNECTION WITH MARINE CONSTRUCTION WORKS

Licence 33119/07/0

The Secretary of State for Environment, Food and Rural Affairs (hereinafter referred to as "the Licensing Authority") hereby authorises:

Thanet Offshore Wind Limited
Wellesbourne House
Wellesbourne
Warwickshire
CV35 9JB

Company Registration No: **4512200**

(hereinafter referred to as "the Licence Holder") to deposit in the sea the substances or articles the particulars of which are set out at paragraph 1.1 of the attached Schedule. The Licence is subject to the conditions of use set out, or referred to, in the said Schedule.

This licence shall be valid from the beginning of the day of **18 April 2007**, (hereinafter referred to as the start date of this licence) to the end of the day of **28 February 2010**, (hereinafter referred to as the end or expiry date of this licence).

For the purposes of this licence and attached schedule and unless indicated otherwise:-

(i) all times shall be taken to be Greenwich Mean Time (GMT), and,
(ii) all co-ordinates shall be taken to be latitude and longitude degrees and minutes to two decimal places.

Signed:

Marine Consents and Environment Unit

for and on behalf of the Licensing Authority

Date of issue: 18 April 2007

The Licence Holder is urged to read carefully all the conditions and requirements of this Licence which are set out in the Schedule. You should acknowledge receipt of this licence and confirm that you have understood its term by signing and returning Form FEP 14 within 28 days of the date of issue of this licence

1. Particulars of the deposit

1.1 The type of works for which the deposit of the substances or articles as specified in paragraph 1.4 of this Schedule are :

Wind Farm

1.2 Details of the works requiring the deposit of the substances or articles as specified at paragraph 1.1 of this Schedule are:-

The wind farm will be located approximately 11.3km offshore from Foreness Point, the eastern most part of the Kent coastline. The site takes up an area of 35km2, in water depths of 18-25m. The wind farm would consist of up to 100 wind turbines giving a maximum output of up to 300MW. The turbines will be in the range of 3MW to 5MW units The maximum height of the turbines will be up to 150m from mean sea level to the blade tip in the vertical position and the minimum clearance will be 22m from mean high water springs level to the blade tip in the vertically down position. The spacing between turbines will be a minimum of 450m between turbines in rows and minimum of 675m between turbines in columns. In addition to the turbines there will be an offshore substation, an anemometry mast, interarray cables and 2 export cables from the offshore sub station to shore. The export cables would make landfall just north of the disused hoverport facility in Pegwell Bay.

1.3. Such works are as detailed in the drawing(s) and sectional plan(s) detailed below which were submitted in support of your application to the Licensing Authority of 07 November 2005

Thanet Offshore Wind Farm Environmental Statement - November 2005.
Thanet Offshore Wind Farm - Stage 1 Borehole Assessment.
Thanet Offshore Wind Farm - Archaeological Assessment of Marine Geophysical Data - Ref 60070.05 June 2006.
Thanet Offshore Wind Farm - Environment Statement Addendum Report: Section 8, Ornithology - June 2006.
Underwater Noise Impact Modelling in support of the London Array, Greater Gabbard and Thanet Offshore Wind Farm Developments - Subacoustech - Report 710R0517 - June 2006.
Underwater Noise Impact Assessment on Marine Mammals and Fish during Pile Driving of proposed Round 2 Offshore Wind Farms in the Thames Estuary - Core Ltd - Report EOR0523 - July 2006.

1.4 The substances or articles authorised for deposit at sea are:

Iron / Steel
Concrete
Sand
Stone / Rock
Gravel
Plastic / Synthetic
Matresses

1.5. The Licence Holder and any Agent and Contractor acting on their behalf is permitted to deposit the substances or articles specified at paragraph 1.4 of this Schedule, at the following location(s):

THANET WIND FARM

51 26.580 N 01 34.170 E
51 27.650 N 01 36.070 E

51 27.650 N 01 38.120 E
51 25.460 N 01 41.270 E
51 24.050 N 01 41.270 E
51 24.160 N 01 37.660 E

1.6. The works shall be carried out in accordance with the works schedule and method statement as detailed in the following:

The foundations for the wind turbines will be of a monopile design and will comprise of a single steel foundation with a diameter between 4.5m and 5.1m, which will be driven into the seabed from a jack-up barge/drilling rig using a hydraulic hammer. To assist piling operations drilling may be applied where ground conditions make driving impossible or difficult. The grouting is applied to the annulus between the outer surface of the pile and the socket, which is pre-drilled to the full depth of the pile, using a structural cementitious grout, securing the monopile in place

A transition piece will connect the foundation unit to the tower supporting the wind turbine. It will be made of a steel tubular section, which has a larger internal diameter then the outside central tubular diameter of the foundation, allowing the transition piece to be installed over the central tubular pile with an annular gap between the two. The transition piece is then lifted into position over the monopile foundation by the installation vessel then connected to the central tubular by means of a structural grouted connection. A flange is provided at the top of the transition piece to enable the tower section to be bolted into place.

The turbine tower will connect the transition piece to the turbine nacelle. It will consist of up to three tapering steel tubular sections which will be lifted in to place and bolted together. The nacelle and rotor would be installed using a heavy lift vessel or jack-up barge.

Installation of the blades will take place using either the 'bunny ears' method or the turbines blades will be installed individually. The 'bunny-ears' method involves two of the three turbine blades being connected to the nacelle hub in the construction laydown yard. The nacelle, complete with two turbine blades, is then loaded out onto a cargo barge or installation vessel. The third turbine blade is loaded separately. On arrival at the site, the nacelle complete with two blades is lifted into place and bolted into position. The third turbine blade is then lifted into position pointing vertically downwards, and connected to the nacelle's hub. The individual blade installation method involves the nacelle and the three turbine blades loaded out as four different components on to a cargo barge or installation vessel. On arrival at site the nacelle is lifted into place and bolted into position. The three turbine blades are then individually lifted into position and connected to the nacelle's hub.

An offshore substation will be located towards the centre of the array. The substation will comprise of a jacket structure secured to the seabed with four monopile foundations each with a diameter of up to 2.2m. Two export cables will then carry the power from the substation to the landfall location.

An anemometry mast may be located either along the south west side of the wind farm or on the offshore substation. If a separate installation located at the south west side of the site is required, the mast will consist of a lattice tower up to 100m above mean sea level, supported by a foundation, similar to a turbine foundation but on a smaller scale with a diameter up to 2m. Foundation weights, sizes, spoil and scour protection quantities are likely to be up to 75% of those for a turbine foundation. The mast would be lifted into place using a crane on an installation vessel, and secured to the foundation using a bolted connection.

Scour protection, in the form of rock, slate or mattresses, may be used for any of the monopile foundations. This material will be deposited by using a side tipping system or placed using a grab and drop device. The material will then be surveyed at the base to confirm that the required coverage and rock profile has been achieved. Thanet Offshore Wind Ltd will seek the approval of the Licensing Authority if plans for scour protection differs substantively from the those measures detailed in the Environmental Statement and supplementary information.

The interturbine cables will have a voltage of 33kV and will be mobilised to the Thanet site on a cable barge or specialist cable installation vessel. A cable end is then floated off from the cable reel on the vessel/barge towards the turbine structure and connected to a pre-installed messenger line in the J-tube. The cable is then pulled up the J-tube when its reaches the cable termination point , the pulling operation ceases and the cable joint is then made. The cable is then laid away from the J-tube towards the J-tube on the second turbine structure where the cable installation vessel/barge will redeploy. The cables will be buried to a depth of between 1m and 3m depending on localised seabed conditions.

The export cables from the array to shore will be rated for a 132kV which will be taken to the Thanet site on a cable installation vessel. The cable end is floated from the vessel towards the offshore substation. The cable is then pulled up the J-tube up to the cable termination point once there a stain restraint is connected to the cable end. The sub-sea cable plough is then launched from the cable installation vessel and the simultaneous lay and burial of the export cable commences with the vessel moving away from the wind farm and the cable being buried to a target depth of a minimum 1m. The cable installation vessel stops as close to the shoreline as possible for the end of the export cable to be pulled up the beach. The free end of the cable is then passed from the cable vessel and floated to shore where it is attached to an onshore winch which pulls the cable up the shore. The subsea plough is then pulled up the beach using the onshore winch, burying the cable in the process. Further burial of the cable , which is required on the beach or shore section, is then completed by land based excavation equipment.

An alternative method of installing the export cable would be installation from shore to the offshore substation. This method involves a cable installation vessel deploying at the shore landing point approaching the shore at high water. The cable end is passed from the vessel and connected to a tow wire on an onshore winch. The cable end is then floated off from the vessel and towed towards the shore. Once the cable end reaches the beach it will be pulled up to the cable onshore jointing chamber and is then secured at the joint transition pit. The subsea cable plough is then deployed to the seabed using the launch and recovery system on the cable vessel. The cable vessel slowly moves away from the shore launching the subsea cable plough which enables the simultaneous lay and burial of the cable, to a target depth of a minimum 1m, with the vessel moving away from shore towards the offshore substation. Once the vessel is approx 70m near the substation the vessel recovers the subsea cable plough to the deck, the cable it then released from cable plough and floated off from the vessel towards the substation. At the substation it will be connected to the end of the messenger line exiting the J-tube's bellmouth. The cable in then pulled up the J-tube until it reached the termination point, the pulling operation ceases and a strain restraint is connected to the cable end.

A number of telecommunication cables to the south of the array will require crossing by the export cables. For operating cables concrete mattresses will be laid across the telecommunications cable/s by a bespoke vessel. The

export cables will then be laid over the mattresses, which will be followed by the top protection mattresses. These mattresses will be laid along the line of the cable for at least a length of 50m.

Where the export cables crosses the navigation approach channel into the Port of Ramsgate the installed export cables will have a reference elevation of -11m CD, in order to be protected from any future dredging operations along the approach to this channel.

2. Persons Responsible for the Deposit of the Substances or Articles

2.1. The Agents and Contractors permitted to engage in activities subject to the terms and conditions of this licence are:-

Name of Agent or Contractor	Function
Royal Haskoning	**Agent**
Vestas Offshore A/S	**Construction Agent**
SLP Energy Ltd	**Construction Agent**
Siemens Power Transmission and Distribution Ltd	**Construction Agent**
Subocean Ltd	**Construction Agent**

2.2 The following operators and vessel(s) or vehicle(s) are permitted to engage in activities subject to the terms and conditions of this licence are:

Name of Vessel or Vehicle Registration	Operator	Type

THE LICENCE HOLDER IS NOT PERMITTED TO COMMENCE THE DEPOSIT OPERATION SPECIFIED BY THIS LICENCE 33119/06/0 UNTIL THE LICENSING AUTHORITY HAS IN WRITING VARIED THE LICENCE TO INCLUDE DETAILS OF ALL VEHICLE(S), VESSEL(S) ETC. TO BE EMPLOYED IN THE OPERATION.

2.3 All vessels employed to perform the deposit operation permitted by this Licence **33119/07/0** shall be so constructed and equipped as to be capable of the proper performance of these operations in compliance with the conditions set out in the Schedule to this licence **33119/07/0** . Details of the vessels that may operate under this Licence **33119/07/0** are set out in sub-paragraph 2.2, and the standard equipment to be on all vessels operating under this Licence **33119/07/0** are set out in paragraph 10.

3. Distribution of copies of this Licence 33119/07/0

3.1 The Licence Holder is required to ensure that a copy of this licence **33119/07/0** and attached Schedule, any special conditions and any subsequent revisions or amendments thereto is given to:

3.1.1. All Agent(s) and Contractor(s) as detailed at paragraph 2.1; and

3.1.2 The Masters of all vessels and transport managers responsible for the vehicles employed in the pursuance of this Licence **33119/07/0** and detailed at paragraph 2.2.

3.2 Copies of this Licence **33119/07/0** shall also be available at the following locations :

3.2.1 at the address of the Licence Holder;

3.2.2 at any site office, located at or adjacent to the site of the works, used by the Licence Holder, agent(s) or contractors(s) responsible for the loading

transportation or deposit of those substances or articles detailed at paragraph 1.2.1 of this Schedule; and,

3.2.3 on board each vessel or at the office of any transport manager with responsibility for vehicles from which licensed deposits are to be made.

4. Inspection of the Operation

4.1 The documents referred to in paragraph 3 shall be available at all reasonable times for inspection by an authorised Enforcement Officer at the locations stated in that paragraph.

4.2 The Licence Holder must advise the Licensing Authority and District Inspector of Fisheries (being a designated officer responsible for enforcement of this Licence) 5 working days before the licensed operation, or an individual phase of the operation is expected to commence.

5. Returns to be made to the Licensing Authority

5.1 The Licence Holder is required to acknowledge receipt of this licence **33119/07/0** and confirm that you have understood its term by signing and returning Form FEP 14 within 28 days of the date of issue of this Licence. No operations permitted under the terms of this licence **33119/07/0** shall commence until the FEP 14 form has been signed and returned to the Licensing Authority.

5.2 All persons referred to at paragraph 2.1 and 2.2 of this Schedule shall provide an acknowledgement, using Form FEP 13, of their receipt of this licence **33119/07/0** and their understanding of all the conditions specified therein to the Licensing Authority within 28 working days of the start date of this Licence **33119/07/0** or prior to engaging in any activity to which this Licence relates, whichever is the sooner.

5.3 Only those Agent(s) or Contractor(s) whose names appear at paragraph 2.1 and the vessel(s) and operator(s) whose names appear at paragraph 2.2 may operate under the terms of this Licence **33119/07/0** . Any changes must be notified to and be approved by the Licensing Authority in writing prior to operating under this Licence **33119/07/0** .

6. Contacts

6.1 Except where otherwise indicated, the primary point of contact with the Licensing Authority and the address for returns and correspondence shall be:-

Marine and Fisheries Agency
Marine Environment Unit
Area 6B
3 - 8 Whitehall Place,
London SW1A 2HH

Tel: 020 7270 8696/1983/8683

6.2 For the purposes of this Licence **33119/07/0** any references to the Local District Inspector of Fisheries shall mean the relevant District Inspector in the area(s) located at:-

Marine and Fisheries Agency
Fish Market Buildings
Rock-a-Nore Road
Hastings
East Sussex
TN34 424109

Tel: 01424 424109

6.3 For the purposes of this Licence **33119/07/0** any references to the Centre for Environment, Fisheries, and Aquaculture Science (CEFAS) shall mean:-

Centre for the Environment, Fisheries, and Aquaculture Science (CEFAS),
The Laboratory
Remembrance Avenue
Burnham-on-Crouch
Essex CM0 8HA

Tel: 01621 787200

6.4 For the purposes of this Licence **33119/07/0** any references to Natural England shall mean:-

Natural England
Coldharbour Farm
Wye
Kent
TN25 5DB

Tel: 01233 812525

7. Force Majeure

7.1 If, by reason of "force majeure" the substances or articles specified at sub-paragraph 1.4 of this Schedule, are deposited otherwise than in the area authorised by this licence at paragraph 1.5, full details of the circumstances shall be notified to the Licensing Authority within 48 hours of the incident occurring.

"force majeure" may be deemed to apply when, due to stress of weather or any other cause, the master of a vessel determines that it is necessary to deposit the substances or articles because the safety of human life and/or of the vessel is threatened.

8. Changes to this licence

8.1 In the event of the Licence Holder becoming aware that any of the information on which the granting of this licence **33119/07/0** was based has changed or is likely to change, he/she shall notify the Licensing Authority at the earliest opportunity of the details.

8.2 Similarly in the event that the Licence Holder wishes any of the particulars set down in the Schedule to be altered he/she shall inform the Licensing Authority at the earliest opportunity. The terms and conditions of this Licence apply until such time as they may be varied by the Licensing Authority.

9. Supplementary Conditions

General Issues

The Licence Holder must submit the reports of monitoring activities set out in the following Supplementary conditions to the Licensing Authority at the appropriate time in order to allow the Licensing Authority to consider if any action may be required to mitigate or correct any adverse effects which may be identified.

The Licensing Authority reserves the right to vary or attach additional conditions to this Licence in the event that:

- The results of monitoring studies required under the terms of the Schedule to this Licence, or
- Any other observed effects considered to be directly associated with the works permitted by this Licence suggest a risk of significant adverse environmental impact.

9.1 Pre-construction monitoring must be carried out within the 12 month period prior to the commencement of construction to provide an updated baseline for subsequent monitoring of the effects of the wind farm, this survey should be cross-referenced to the Environmental Statement dated November 2005 and all subsequent correspondence with the Licensing Authority during the consenting process. A construction monitoring programme will also be required. A post-construction monitoring programme must be carried out at the same time of year to follow the completion of the works. Similar monitoring must be carried out at the same time each year for comparative purposes in the years following completion of construction to allow any operational impacts to be determined. All phases of monitoring are to be developed in consultation with the Licensing Authority. Further monitoring requirements may be imposed by the Licensing Authority in the light of the results of each phase of the monitoring programme and any outputs from Research projects that may inform the Licensing Authority.

9.2 The Licence Holder must provide the Licensing Authority with a detailed schedule of planned construction works four months prior to commencement of works so that the Licensing Authority can agree, in writing, a definite timetable for the construction and monitoring licence conditions. 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. Subsequent to the agreement of this timetable, should unavoidable problems occur in meeting this schedule, the Licence Holder must notify the Licensing Authority and seek instruction on the monitoring schedule.

9.3 The Licence Holder must forward the monitoring reports to the Licensing Authority and Natural England on an annual basis, unless specified otherwise in this Licence. Additional interim reports should be submitted if the results trigger further monitoring work. Each report must be forwarded to the Licensing Authority by the date specified in the schedule required under condition 9.2 (expected to be within three to six months of the completion of the survey). The Licence Holder should advise the Licensing Authority, in writing, if circumstances suggest that there will be a delay in the submission of reports.

The reports should include assessment, conclusions and an executive summary and the data within all reports should consist of its processed and unprocessed forms.

The various components of the monitoring programme and resultant reports, as described in conditions 9.4 to 9.12 inclusive of this Licence, should be integrated so as to compare related environmental parameters e.g. the bird monitoring should address the conclusions of the benthic studies which should similarly draw on the

sedimentary studies, etc.

Environmental Monitoring

9.4 The Licence Holder must carry out a programme of sedimentary, hydrological, benthic, ornithological and other monitoring, as outlined in Annex 1 and 2 attached to this Schedule. 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 monitoring work.

9.5 The licence holder must carry out a pre-construction survey to determine the location and abundance of *Sabellaria spinulosa* in the vicinity of the array and cable route. Should *Sabellaria spinulosa* reef or reef-like structures 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, inter 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 and no construction is to commence without the written agreement of the Licensing Authority.

9.6 The Licence Holder must provide the Licensing Authority with an assessment of the degree of attenuation, to be achieved by means of shielding and burial depth, of electro-magnetic field strengths associated with cables (see Annex 1).

9.7 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 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 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.

9.8 The Licence Holder must make provision during the construction phase of the wind farm to install facilities to enable 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 a specification to the Licensing Authority of how it proposes to measure subsea noise and vibration - 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 - in order to fulfil the monitoring requirement outlined in Annex 1 attached to this Licence.

Fish Monitoring

9.9 The Licence Holder must within six months of the date of this licence produce proposals for a post-construction survey of fish populations in the area of the wind farm. The Licence Holder shall, in drawing up such proposals, canvas the views of local fishermen. The proposals must be submitted to the Licensing Authority by the date specified in the schedule required under condition 9.2. The Licence Holder must undertake these surveys as detailed in the agreed specification and report by the date specified in the schedule required under condition 9.2.

9.10 The Fisheries Liaison Officer (see condition 9.20) shall pay due regard during the conduct of any fisheries survey to the need to safeguard the safety of any persons engaged in fishing operations on the site of the wind farm.

Ornithological Monitoring

9.11 Ornithological monitoring must be carried out as outlined in Annex 2 attached to this Schedule. The full specification for the monitoring programme will be subject to separate written agreement with the Licensing Authority following consultation with Natural England prior to the proposed commencement of the monitoring work.

9.12 Post-construction monitoring during the operational phase of the wind farm must be undertaken annually for three years. The level of any subsequent ornithological monitoring, during the lifetime of the wind farm's operation, will be determined, in consultation with Natural England, having regard to the magnitude of any change in bird populations observed during the initial monitoring period.

Timing

9.13 The Licence Holder must ensure that seismic surveys and pile driving operations are not conducted between mid February and the end of April so as to avoid the main spawning period for Thames herring. All pile driving operations must use a 'soft start' procedure.

9.14 The Licence Holder must ensure that no works associated with cable installation within the inter tidal zone are carried out during the period 1st October to 15th April in any year.

9.15 The Licence Holder must obtain the written approval of the Licensing Authority if any works in the inter tidal zone are likely to be carried out during the period specified in licence condition 9.14. Any approval would include, but not limited to, the following restrictions:

- Between 1st October to 31st January - 2 hour stoppage of all works starting 1½ hours before and ending ½ hour after each high tide;
- 1st February to 15th April - 3 hour stoppage of all works starting 2 hours before and ending 1 hour after each high tide.

Interference

9.16 The Licence Holder must ensure that a Notice to Mariners is issued at least ten 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 Notice to Mariners must similarly 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 Agency. Dates for these notices should be included in the agreed specification required under condition 9.2.

9.17 The Licence Holder must ensure that details of the works are promulgated 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.

9.18 The Licence Holder must ensure that a suitably qualified and experienced liaison officer or officers are appointed (for fisheries and environmental liaison) and the Licensing Authority notified of their identity and credentials before any construction work commences, to establish and maintain effective communications between the Licence Holder, contractors, fishermen, conservation groups and other users of the sea during the project.

9.19 The Licence Holder must ensure that information is made available and circulated in a timely manner through the liaison officer(s) to minimise interference with fishing operations and other users of the sea.

9.20 The Licence Holder must stipulate that the liaison officer's environmental remit includes:-

a. Monitoring compliance with the commitments made in the Environmental Statement and the Environmental Management Plan.
b. Providing a central point of contact for the monitoring programme described in Annexes 1 and 2.
c. Liaison with fishermen, conservation groups and other users of the sea concerning any amendments to the method statement and site environmental procedures.
d. Inducting site personnel on site / works environmental policy and procedures.

9.21 The Licence Holder must submit a copy of a Project Environmental Management Plan for the approval of the Licensing Authority, in consultation with CEFAS and Natural England, by the date specified in the schedule required under condition 9.2 (at least four months prior to the proposed commencement of construction work) to ensure that satisfactory arrangements are in place for liaison on environmental issues (as such the plan should provide names and contact details for the environment liaison officer(s)).

Marine Mammals

9.22 The Licence Holder must ensure that no construction activities commence until the Licence Holder has agreed in writing with the Licensing Authority and Natural England a programme for the mitigation of potential impacts on marine mammals. The programme must be submitted to the Licensing Authority by the date specified in the schedule required under condition 9.2. At the least the mitigation proposal is required to address conditions 9.23 to 9.27 below.

9.23 The Licence Holder must ensure that a suitably qualified and experienced Marine Mammal Observer or Observers (MMO) are appointed and Natural England notified of their identity and credentials before any construction work commences. The MMO must maintain a record of any sightings of marine mammals within the mammal monitoring zone and action taken to avoid any disturbance being caused to them.

9.24 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 monitoring should be undertaken both visually (by the MMO) and acoustically using appropriate Passive Acoustic Monitoring (PAM) equipment. Both the observers and equipment must be deployed at a reasonable time before piling is due to commence.

9.25 The Licence Holder must ensure that once the half hour non detection period has past, piling may only commence using the soft start procedure. The duration and

nature of this procedure must be discussed and agreed with Natural England prior to commencement of operations.

9.26 The Licence Holder must ensure that at times of poor visibility (e.g night-time, foggy conditions, sea state greater than that associated with force 4 winds) enhanced acoustic monitoring of the zone for marine mammals is carried out prior to commencement of relevent construction activity.

9.27 The Licence Holder must make provision for a reporting methodology to be in place before works commence to enable efficient communication between the MMO and the skipper of the monitoring piling vessel.

Seabed Morphology and Scour

9.28 The Licence Holder must undertake a swath bathymetric survey around a sample of adjacent turbines (minimum of four) and at cable crossings to assess scour within the array and at the crossings. The number of turbines and the area of seabed and at the crossings surveyed should be determined in consultation with the Licensing Authority based on the outputs of the computer models used to inform the Environmental Statement. The precise location and timing of this survey should be agreed with the Licensing Authority (in consultation with CEFAS and Natural England) once the construction programme has been agreed. At the latest it should be undertaken immediately after construction is complete and repeated at six monthly intervals for a period of three years. This shall specifically address the need for (additional) scour protection around the turbine foundations and at the crossings. 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 9.2. Any proposal to install scour protection measures should, where practicable, avoid the use of rock dumping. The Licence holder is required to cross-reference the occurrence of any *Sabellaria spinulosa* reef with any detected scour pits and consult Natural England before any scour protection is deposited at the site.

9.29 The licence holder must carry out similar surveys as in condition 9.28 in the event of any major storm events likely to result in significant sediment movements (e.g. greater than a one in ten wave event at this site in terms of wave height). Wave data is available free from www.cefas.co.uk/wavenet/default.htm.

9.30 If the monitoring results carried out under condition 9.28 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.

9.31 The Licence Holder must undertake two (winter and summer) high resolution swath-bathymetric surveys (including a pre-construction baseline) of the wind farm array and cable route to assess the extent of any bedform morphology. Should additional cable protection be required (e.g. rock armour) a separate application must be made for Food and Environment Protection Act/Coast Protection Act consents.

9.32 The Licence Holder must submit a detailed export cable-laying plan to the Licensing Authority for approval, in advance of cable laying operations by the date specified in the schedule required under condition 9.2, but should be a minimum four months in advance of cable laying operations commencing. The plan should use detailed geotechnical data to ascertain optimal cable burial depth along the length of the export cable. This should be presented in conjunction with work undertaken to identify

scour protection / armouring works required to protect the cable and cross-referenced with the benthic surveys and any detected occurrences of *Sabellaria spinulosa* reef or reef-like structures.

9.33 The Licence Holder must ensure that the export cable is buried by trenching or ploughing to a depth of not less than one metre across the inter tidal zone.

9.34 The Licence Holder must make all practicable efforts to minimise the use of jetting techniques. These should only be considered in exceptional circumstances and in such circumstances, the Licence Holder must seek the written authorisation of the Licensing Authority at least two weeks prior to works commencing. Jetting for the sixty-four interarray cables that are located in the Thanet / Woolwich beds is permitted.

9.35 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 (e.g. surface sediments should be replaced at the surface and not mixed with those excavated from the bottom of the cable trench).

9.36 If the use of jetting the export cable in the inter tidal zone is agreed, the Licence Holder will be required to carry out additional 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 and Natural England within one month of the completion of the jetting.

Marine Archaeology

9.37 The Licence Holder must conform to the recommended procedures for consultation and cooperation between seabed developers and archaeologists as set out in the Joint Nautical Archaeology Policy Committee's (JNAPC) Code of Practice for Seabed Developers. Having particular reference to:-

I. A written Scheme of Investigation is prepared in conjunction with English Heritage and Kent County Council to detail archaeological mitigation works offshore, within the inter tidal zone and onshore.
II. Continued active dialog with English Heritage and Kent County Council to ensure that the historic environment is considered in the course of all pre-construction investigations and post-construction monitoring.
III. The provisions in the JNAPC guidance for the prompt reporting and recording of archaeological remains encountered, or suspected, during all phases of construction.

9.38 The Licence Holder must report any wreck material recovered during pre-construction investigations and during construction activities to the Receiver of Wrecks.

Method Statement

9.39 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, how these fit with the schedule to be provided under condition 9.2, and shall include a confirmation of the final choice of foundation type, installation techniques, cable type, cable laying technique, contractors, vessels. The works shall fall within the range of options described in the Environmental Statement. No works to construct the wind farm may commence until the Licensing Authority has given its written acceptance of the Method Statement relating to those works. Should the methods described differ significantly from those discussed in the Environmental Statement the Licensing Authority reserves the right to seek a new application.

Seabed Surveys and Removal of Debris

9.40 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. (Any drill cuttings, arising and associated with the use of water-based muds, are permitted to be left on the seabed within the boundaries of the turbine array).

9.41 The Licence Holder must undertake a pre-construction bottom and side scan sonar survey in grid transect to cover the intended area of development (turbine array, cable route, and any vessel access routes from local service port(s) to the construction site). Local fishermen must be invited to send a representative to be present during the survey. All obstructions found on the seabed must be plotted. A post construction survey must be undertaken along the same grid lines (within operational and safety constraints), as soon as reasonably practicable and submitted to the Licensing Authority. All reasonable efforts must be made at the developer's expense to remove any debris and/or obstructions located which were not previously recorded during the pre-construction survey.

Use of Chemicals and Coatings

9.42 All chemicals utilised in the drilling operation 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 then a water-based mud be considered for use in the drilling operation written approval and guidance of disposal of any arisings will be required from the Licensing Authority.

9.43 The Licence Holder must ensure that any chemical agents placed within the void of any of the turbine bases, including. biocides, corrosion inhibitors etc, are selected from the List of Notified Chemicals (see condition 9.42). 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.

9.44 The Licence Holder must ensure that all protective coatings; 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.

9.45 The Licence Holder must ensure that storage, handling and transport of fuels, lubricants, chemicals etc during construction on vessels and equipment should prevent releases to the marine environment, e.g. bunding should be 10% greater than the total volume of all reservoirs, containers.

9.46 The Licence Holder must produce a Marine Pollution Contingency Plan for spills, collision incidents during construction and operation, and this must be adhered to. The plan should be submitted to the Licensing Authority for agreement (in consultation with CEFAS and Natural England) by the date specified in the schedule required under condition 9.2. The Contingency Plan must have regard to plans for navigation routes & offshore installations. Practices used to refuel vessels at sea must conform to industry standards. The Contingency Plan must also outline plans to deal with any potential oil leaks within the turbine nacelle to be dealt with immediately so as to ensure no such material comes into contact with the marine environment.

Miscellaneous Matters

9.47 The Licence Holder must ensure that all reasonable care is taken to prevent the accidental release of wet cement/grout into the marine environment.

9.48 The Licence Holder must provide access, and if necessary appropriate transportation at reasonable notice, to the offshore construction site (or any other associated works/vessels) to facilitate any inspection that the Licensing Authority considers maybe necessary subject to meeting any mandatory health and safety obligations.

9.49 All the conditions of this Licence and the Schedule attached thereto also apply to the offshore substation and any meteorological mast associated with this wind farm, which must be considered as an integral part of the development.

9.50 In addition to the initial licence charge paid with the application (or application for extension) relating to this licence, the Licence Holder shall pay a further annual instalment of the licence charge in respect of the second and subsequent period of twelve months of the licence (equivalent to the extension charge in force based on the cost of the project at the due date). Payment of the annual instalment shall be due and be made to the Licensing Authority twenty-eight days prior to the anniversary of the original start date of this licence.

9.51 This licence shall be deemed to become invalid and shall be liable to be revoked in the event that the Licence Holder fails to make full payment of each annual instalment of the licence charge within a period of twenty-eight days following the respective due date for payment.

9.52 The Licensing Authority reserves the right to seek a further variation charge in the event that the Licence Holder requests any significant change to the work or the working methods to which this licence applies, or to its terms and conditions. Should the Licence Holder seek to make changes to the terms and conditions of this licence or to the work to which it relates which in the opinion of the Licensing Authority will require it to be substantially re-assessed, the Licensing Authority may seek to revoke this licence and request a revised application.

10. Conditions relating to the Construction, Equipment and Operation of the Vessels engaged upon Deposit Operations

10.1. All motor powered vessels engaged in operations to which this licence **33119/07/0** relates must be fitted with the following equipment:

10.1.1 Electronic positioning aid to provide navigational data e.g. GPS, etc.

10.1.2 Radar

10.1.3 Echo sounder

10.1.4 Multi-channel VHF

10.2. All vessels' names or identification shall be clearly marked on the hull or superstructure.

10.3. All communication on VHF working frequencies shall be in the English Language.

10.4. Under no circumstances shall a vessel engage in the deposit operations until all equipment specified in this paragraph is fully operational.

EXPLANATORY NOTES

This page does not form part of this licence **33119/07/0**
or its associated schedule but the licence holder is recommended
to read the following guidance notes.

1. The granting of this licence **33119/07/0** does not absolve the Licence Holder from obtaining such other authorisations, consents and approvals which may be required under any other legislation, controls or regulations.

2. Under Section 8 of the Food and Environment Protection Act 1985, the Licensing Authority may vary or revoke this Licence **33119/07/0** if it appears to the Authority that the Licence Holder is in breach of any conditions in it or for any other reason that appears to the Authority to be relevant.

3. A person who makes a deposit, or causes a deposit to be made, at sea in contravention of the conditions specified in this licence 33119/07/0 may be found guilty of an offence under Section 9(1) of the Food and Environment Protection Act. It is a defence under Section 9(3) of the Act for a person charged with such an offence to prove that the operation was carried out for the purpose of securing the safety of the vessel or of saving life ("force majeure") and that he/she took steps within 48 hours following the incident to send full details of the incident including those relating to the operation, the locality and the circumstances in which it took place and the substances or articles concerned, to the Licensing Authority (see paragraph 6 of the schedule).

4. If the works authorised by this Licence **33119/07/0** are unlikely to be completed by the expiry date of this licence, the Licence Holder should apply for a replacement licence at least 10 weeks prior to the expiry date of this Licence

Annex 1

THIS IS AN ANNEX TO THE SCHEDULE OF LICENCE 33119/06/0

MONITORING REQUIREMENTS

This Annex summarises the minimum physical and biological (excluding birds) monitoring requirements that must be undertaken to comply with the conditions of licence 33119/06/0. Full details of the proposed survey specifications to meet these requirements are to be set out in a separate report to be agreed by the Licensing Authority, in consultation with CEFAS and Natural England, prior to the commencement of any survey works by the date specified in the schedule required under condition 9.2.

All monitoring surveys should be based on a clear and reported rationale and robust hypotheses should be established for each survey. The interpretation and reporting of the monitoring required in this annex must be undertaken so as to ensure that all inter-relationships are appropriately assessed.

The purpose of the monitoring required under this licence is to test the predictions on environmental impacts made in the Thanet Offshore Wind Farm Environmental Statement dated November 2005 and the subsequent additional information provided during the official consultation period of the Food & Environment Protection Act 1985 licence application.

1. Suspended Sediment Concentrations (SSC)

A coastal and sediment monitoring plan and suspended sediment plume monitoring plan should be developed prior to the onset of works. This monitoring should include the use of fixed sediment meters over a period of at least four weeks during the pre- construction, construction and post-construction phases at suitable locations to measure near field, far field and neutral (control) effects of sediment release. In particular this monitoring should target the spatial and temporal extent of any chalk plumes arising from the construction works and relate these back to the modelling work submitted in support of the Food & Environment Act 1985 licence application.

2. Seabed Morphology and Scour

(See licence conditions 9.28 to 9.36).

3. Benthic Organisms

Sample locations for ongoing monitoring must be determined by factors such as precise monopile locations, location of cables etc. Sample locations must also take full account factors such as coastal process modelling outputs (for sediment transport / deposition information) and geophysical surveys (to ensure adequate coverage of sea bed habitats).

Sampling should involve a minimum of three replicates at each station and the number and location of stations should be determined making use of the data used to characterize the site as part of the Environmental Statement. This monitoring should include a suitable baseline data set and make adequate use of control sites.

Colonisation of monopiles and scour protection must be determined by video observations and analysis with some accompanying sample collection for verification and identification.

A pre-construction survey to determine the location and abundance of *Sabellaria spinulosa* should be undertaken in the proposed turbine array area and along the export cable route, and the report submitted to the Licensing Authority at least four months prior to the commencement of construction works.

4. Marine Fish

(See licence conditions 9.9).

A number of elasmobranchs (lesser spotted dogfish, thornback rays, starry smoothhounds) are common to the general area surrounding the proposed wind farm site. Survey work is therefore required to determine the general status (numbers and distribution) of this and other elasmobranch species in the vicinity of the Thanet offshore wind farm. The results should be presented and discussed in combination with the EMF studies described in the following section (6.Electromagnetic Fields).

5. Electromagnetic Fields

The Licence Holder must provide the Licensing Authority with information on attenuation of field strengths associated with the cables, shielding and burial described in the Method Statement and relate these to any outputs from the COWRIE sponsored studies in the UK. This is to provide reassurance that the cable shielding and burial depth(s), given the sediment type, at the site is sufficient to ensure that the electromagnetic field generated is negligible. Should this study show that the field strengths associated with the cables are sufficient to have a potentially detrimental effect on electrosensitive species, further biological monitoring will be required to further investigate the effect and mitigation measures developed.

6. Marine Mammals

As a number of cetaceans and pinnipeds are found in the general area there is a requirement to conduct monitoring through the construction phase (see licence conditions 9.22 to 9.27). The need for additional marine mammal monitoring, over an initial three year period and on-going during the lifetime of the wind farm's operation, will be determined, in consultation with Natural England and the Licensing Authority and reviewed at agreed periods.

7. Noise and Vibration

(See licence conditions 9.7 and 9.8).

Detailed data must be collected on the frequencies and magnitudes of underwater noise produced by this offshore wind farm both during construction and once operational. This is required for a variety of purposes, including:-

a. In combination with the biological aspects of the monitoring programme proposed in Annexes 1 and 2, the data would help to elucidate any interactions between noise generation and the provision of new habitat and fish aggregation effects of the turbine support structures.
b. Determining the effects of distance, depth, seabed topography and background sources on noise propagation.
c. Any potential marine mammal disturbance.

8. Decommissioning

A further survey is recommended prior to decommissioning in order to inform the decision relating to the decommissioning process. The process should be undertaken in line with DTI's Decommissioning Programme.

---------- This is the end of this Annex ----------

Annex 2

THIS IS AN ANNEX TO THE SCHEDULE OF LICENCE 33119/06/0

ORNITHOLOGICAL MONITORING:

Monitoring will comprise a Before and After Control Impact (BACI) design and will be undertaken at the survey areas consisting of the windfarm site, a 1km and 2-4km buffer zone surrounding the windfarm and the selected reference site. The monitoring programme will be implemented in advance of construction and continue through the construction phase. There is also a requirement to conduct post-construction monitoring to provide a minimum of three years data from the operating phase. These data will need to be empirically comparative with baseline data provided within the project's Environmental Statement. The detailed specification for the monitoring programme, including the location and extent of the reference site, will be subject to separate written agreement with the Licensing Authority following consultation with Natural England prior to the proposed commencement of the monitoring work (see licence condition 9.11).

The need for additional ornithological monitoring, on-going during the lifetime of the wind farm's operation, will be determined, in consultation with Natural England and Defra and reviewed at agreed periods. This will have regard to the magnitude of any change in bird populations observed during the initial three years operational monitoring period (as per licence condition 9.12).

The ornithological monitoring programme may have to be adapted and amended as new technologies and research findings become available, as determined by Natural England and the Licensing Authority.

Ornithological monitoring reports will be provided to Natural England on a quarterly basis as a draft report update and as a final annual report. This may be more frequent where the results of the data may trigger further, more intensive monitoring work. Monitoring of the agreed reference site will also continue parallel to the windfarm site and the 1km and 2-4km buffer zones surrounding the windfarm.

Monitoring will need to fulfil the following objectives:-

1. Determine whether there is change in bird use and passage, measured by species (with particular reference to Red-Throated Diver), abundance and behaviour, of the windfarm site, 1km and 2-4 km buffer zones and the reference site.
2. Determine whether there is a barrier effect to movement of birds through the windfarm site and the 1km and 2-4 km buffer zones.
3. Continue to determine the distribution of wildfowl and divers in the Greater Thames estuary, covering the Thanet windfarm site, 1km and 2-4 km buffer zones and the reference site.
4. If objectives 1 or 2 reveal significant change of use of the wind farm site and 1km and 2-4 km buffer zones by populations of conservation concern, at heights that could incur collision, a programme of collision monitoring will be implemented.

---------- This is the end of this Annex ----------