

**2013 No. 1734**

**INFRASTRUCTURE PLANNING**

**The Triton Knoll Offshore Wind Farm Order 2013**

*Made* - - - - *11th July 2013*

*Coming into force* - - *12th July 2013*

An application has been made to the Infrastructure Planning Commission in accordance with the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009(a) for an Order under sections 37, 114, 115, 120 and 149A of the Planning Act 2008 (“the 2008 Act”)(b);

The application was examined by a Panel appointed as an Examining authority by the Secretary of State(c) pursuant to Chapter 4 of Part 6 of the 2008 Act and the Infrastructure Planning (Examination Procedure) Rules 2010(d);

The Examining authority having considered the application together with the documents that accompanied it, and the representations made and not withdrawn, has, in accordance with section 74 of the 2008 Act, made a report and recommendation to the Secretary of State;

The Secretary of State, having considered the report and recommendation of the Panel, and decided the application, has determined to make an Order giving effect to the proposals comprised in the application with modifications;

The Secretary of State in exercise of the powers conferred by sections 114, 115, 120 and 149A of the 2008 Act makes the following Order:

**Citation and commencement**

1. This Order may be cited as the Triton Knoll Offshore Wind Farm Order 2013 and shall come into force on 12th July 2013.

**Interpretation**

2.—(1) Except for Schedule 2 (Deemed Licence under the Marine and Coastal Access Act 2009), which is subject to the definitions in that Schedule, in this Order—

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(a) S.I. 2009/2264, amended by S.I. 2010/602, 2012/635, 2012/2732.  
(b) 2008 c. 29. Parts 1 to 7 were amended by Part 6 of Chapter 6 of, and Schedule 13 to, the Localism Act 2011 (c. 20). Section 149A was inserted by paragraph 4 in Part 1 of Schedule 8 to the Marine and Coastal Access Act 2009 (c. 23).  
(c) The application was accepted for examination by the Infrastructure Planning Commission on 23 February 2012 and following its abolition on 1st April 2012 the functions of the Infrastructure Planning Commission were transferred to the Examining Authority appointed by the Secretary of State.  
(d) S.I. 2010/103, amended by S.I. 2012/635.

“the 1990 Act” means the Town and Country Planning Act 1990(a);

“the 2004 Act” means the Energy Act 2004(b);

“the 2008 Act” means the Planning Act 2008;

“the 2009 Act” means the Marine and Coastal Access Act 2009(c);

“ancillary works” means the ancillary works described in Part 2 of Schedule 1 and which are not development within the meaning of section 32 of the 2008 Act;

“authorised development” means the development and associated development described in Part 1 of Schedule 1, which is development within the meaning of section 32 of the 2008 Act;

“authorised project” means the authorised development and the ancillary works authorised by this Order;

“collector substation” means a platform (either singly or as part of a combined substation) with one or more decks or housing or incorporating high voltage alternating current electrical switchgear and/or electrical transformers and other equipment to enable power from multiple WTGs to be collected and electrically converted for transmission including permanent accommodation for operations and maintenance staff, helicopter landing facilities, craneage, access equipment, J-tubes, marking and lighting, and other associated equipment and facilities;

“combined substation” means a single platform comprising a collector substation combined with either an HVDC substation or with a large HVDC substation;

“concrete monopile foundation” means a concrete or steel reinforced concrete pile, typically cylindrical, drilled into the seabed, and associated equipment including scour protection, J-tube, corrosion protection systems and access platforms and equipment;

“the deemed marine licence” means the licence set out in Schedule 2 and deemed by article 8 to have been granted under Part 4 of the 2009 Act, by virtue of section 149A of the 2008 Act;

“environmental statement” means the document (Reference 05/01) certified as the environmental statement by the Secretary of State for the purposes of this Order and submitted with the application on 31 January 2012;

“gravity base foundation” means a structure principally of steel, concrete or steel and concrete which rests on the seabed either due to its own weight with or without added ballast or additional steel skirts and associated equipment including scour protection, J-tube, corrosion protection systems and access platforms and equipment;

“HVDC substation” means a platform (either singly or as part of a combined substation or linked by bridge to a collector substation) with one or more decks housing or incorporating high voltage direct current electrical switchgear and/or electrical transformers and other equipment to enable HVDC transmission to be used to convey the power output of the multiple WTGs to shore including permanent accommodation for operations and maintenance staff, helicopter landing facilities, craneage, access equipment, J-tubes, marking and lighting and other associated equipment and facilities;

“jacket foundation” means a metal jacket/lattice type structure constructed of steel or reinforced concrete which is fixed to the seabed at two or more points with driven or pre-installed piles or with suction cans and associated equipment including scour protection, J-tube, corrosion protection systems with access platforms and equipment;

“the land plan” means the plan submitted with the application (02/02/v2 dated 6 September 2012) and certified as the land plan by the Secretary of State for the purposes of the Order;

“large HVDC substation” means an HVDC substation (either singly or as part of a combined substation) whose maximum dimensions exceed those of an HVDC substation as set out in paragraph 5(3) in Part 3 of Schedule 1;

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(a) 1990 c. 8. There are amendments to the 1990 Act which are not relevant to this Order.  
(b) 2004 c. 20.  
(c) 2009 c. 23.

“maintain” includes inspect, repair, adjust and alter, and further includes remove, reconstruct and replace any of the ancillary works and any component part of any wind turbine generator, collector substation, meteorological station or HVDC substation described in Part 1 of Schedule 1 (including replacement of defective subsea cables to the extent assessed in the environmental statement but not including the alteration removal or replacement of foundations) and “maintenance” shall be construed accordingly;

“MCA” means the Maritime and Coastguard Agency;

“meteorological station” means a lattice tower housing or incorporating equipment to measure wind speed and other wind characteristics, including a service platform housing electrical switchgear and communication equipment and associated equipment, oceanographic equipment and connecting cable to be sited within 300 metres of the mast, and marking and lighting;

“MMO” means the Marine Management Organisation;

“monopile foundation” means a concrete monopile foundation or a steel monopile foundation;

“the Order limits” means the limits shown on the Works plan as the limits within which the authorised development may be carried out, whose grid coordinates are set out in Part 1 of Schedule 1 (authorised development) of this Order;

“offshore substation” means either a collector substation or HVDC substation;

“Renewable Energy Zone” means the areas of the sea designated under the Renewable Energy Zone (Designation of Area) Order 2004(a);

“the Requirements” means the requirements set out in Part 3 of Schedule 1 (Requirements) to this Order;

“scheduled works” means the works numbered 1 and 2 specified in Part 1 of Schedule 1 to this Order, or any part of them;

“scour protection” means measures to prevent loss of seabed sediment around foundation bases by use of protective aprons, mattresses, flow energy dissipation (frond) devices or rock and gravel dumping;

“steel monopile foundation” means a steel pile, typically cylindrical, driven and/or drilled into the seabed and associated equipment including scour protection, bracing J-tube, corrosion protection systems and access platforms and equipment;

“suction bucket monopod foundation” means a tubular metal structure which partially penetrates the seabed and remains in place using its own weight and a hydrostatic pressure differential and associated equipment, including scour protection, bracing, J-tube, corrosion protection systems and access platforms and equipment;

“suction can” means a large diameter steel cylinder which is fixed to the base of the foundation and partially penetrates the seabed and remains in place using its own weight and hydrostatic pressure differential;

“Trinity House” means the Corporation of Trinity House of Deptford Strond;

“tripod foundation” means a metal jacket/lattice type structure consisting of three main legs linked by cross-braces supporting a single central support for the transition piece and turbine, constructed of steel or reinforced concrete which is fixed to the seabed with driven or pre-installed piles or suction cans, and associated equipment including scour protection, J-tube, corrosion protection systems and access platforms and equipment;

“undertaker” means Triton Knoll Offshore Wind Farm Limited;

“vessel” means every description of vessel, however propelled or moved, and includes a non-displacement craft, a personal watercraft, a seaplane on the surface of the water, a hydrofoil vessel, a hovercraft or any other amphibious vehicle and any other thing constructed or adapted for movement through, in, on or over water and which is at the time in, on or over water;

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(a) S.I. 2004/2668.

“wind turbine generator” or “WTG” means a structure comprising a tower, rotor with three blades connected at the hub, nacelle and ancillary electrical and other equipment which may include J-tubes, transition piece, access and rest platforms, access ladders, boat access systems, corrosion protection systems, fenders and maintenance equipment, helicopter landing facilities and other associated equipment, fixed to a foundation;

“the Works plan” means the plan submitted with the application (02/03/v3 dated 11 December 2012) and certified as the Works plan by the Secretary of State for the purposes of this Order.

(2) All distances, directions and lengths referred to in this Order are approximate and distances between points on a work comprised in the authorised development shall be taken to be measured along that work.

(3) Any reference in this Order to a work identified by the number of the work, or by a combination of letters and numbers (for example, “Work No. 1”), is to be construed as a reference to the work of that number authorised by this Order.

(4) References in this Order to numbered Requirements are to the Requirements with those numbers in Part 3 of Schedule 1.

(5) References in this Order to rights over land include references to rights to do or to place and maintain anything in, on or under land or in the air-space above its surface.

### **Development consent etc granted by the Order**

3. Subject to the provisions of Part 3 of Schedule 1 (Requirements), Schedule 2 (deemed marine licence) and the other provisions of this Order, the undertaker is granted—

- (a) development consent for the authorised development; and
- (b) consent for the ancillary works,

to be carried out within the Order limits.

### **Maintenance of authorised project**

4. The undertaker may at any time maintain the authorised project, except to the extent that this Order or an agreement made under this Order provides otherwise.

### **Operation of electricity generating station**

5.—(1) The undertaker is authorised to operate the generating station comprised in the authorised development.

(2) This article does not relieve the undertaker of any requirement to obtain any permit or licence under any other legislation that may be required from time to time to authorise the operation of an electricity generating station.

### **Benefit of the Order**

6.—(1) Subject to paragraphs (2) and (3) the undertaker may with the written consent of the Secretary of State—

- (a) transfer to another person (“the transferee”) any or all of the benefit of the provisions of this Order and such related statutory rights as may be agreed between the undertaker and the transferee; or
- (b) grant to another person (“the lessee”) for a period agreed between the undertaker and the lessee any or all of the benefit of the provisions of this Order and such related statutory rights as may be so agreed.

(2) The Secretary of State shall consult the MMO before giving consent to the transfer to another person of any or all of the benefit of the provisions of the deemed Marine Licence.

(3) Where an agreement has been made in accordance with paragraph (1) references in this Order to the undertaker, except in paragraph (4), shall include references to the transferee or lessee.

(4) The exercise by a person of any benefits or rights conferred in accordance with any transfer or grant under paragraph (1) shall be subject to the same restrictions, liabilities and obligations as would apply under this Order if those benefits or rights were exercised by the undertaker.

#### **Abatement of works abandoned or decayed**

7. Where Work Nos. 1 and 2 or any part of it or any part of the ancillary works is abandoned or allowed to fall into decay the Secretary of State may, following consultation with the undertaker, issue a written notice requiring the undertaker at its own expense to repair and restore or remove any part of Work Nos. 1 and 2 or the ancillary works, without prejudice to any notice served under section 105(2) of the 2004 Act. The notice may also require the restoration of the site of the relevant parts of Work Nos. 1 and 2 to a safe and proper condition within an area and to such an extent as may be specified in the notice.

#### **Deemed licence under the Marine and Coastal Access Act 2009**

8. The undertaker is granted a deemed licence under Part 4 Chapter 1 of the 2009 Act to carry out the works and make the deposits specified in Part 1 of Schedule 2, subject to the licence conditions set out in Part 2 of that Schedule.

#### **Saving for Trinity House**

9. Nothing in this Order prejudices or derogates from any of the rights, duties or privileges of Trinity House.

#### **Crown rights**

10.—(1) Nothing in this Order shall—

- (a) prejudicially affect any estate, right, power, privilege, authority or exemption of the Crown; or
- (b) authorise the undertaker to take, use, enter upon or in any manner interfere with any land, hereditaments or rights of whatever description (including any part of the shore or bed of the sea or any river, channel, creek, bay or estuary) belonging to—
  - (i) Her Majesty in right of the Crown and under the management of the Crown Estate Commissioners without the consent in writing of those Commissioners; or
  - (ii) a government department or held in trust for Her Majesty for the purposes of a government department without the consent in writing of that government department.

(2) A consent under paragraph (1)(b) may be given unconditionally or may be subject to such conditions or upon such terms as may be considered necessary or appropriate.

#### **Certification of plans etc**

11.—(1) The undertaker shall, as soon as practicable after the making of this Order, submit to the Secretary of State copies of—

- (a) the Works plan (document reference 02/03/v3 dated 11 December 2012);
- (b) the land plan (document reference 02/02/v2 dated 6 September 2012); and
- (c) the environmental statement (document reference 05/01),

for certification that they are true copies of the documents referred to in this Order.

(2) A plan or document so certified shall be admissible in any proceedings as evidence of the contents of the document of which it is a copy.

## Arbitration

12. Any difference under any provision of this Order, unless otherwise provided for, shall be referred to and settled by a single arbitrator to be agreed between the parties, or failing agreement, to be appointed on the application of either party (after giving notice in writing to the other) by the Secretary of State.

Signed by authority of the Secretary of State for Energy and Climate Change

*Giles Scott*

Head of National Infrastructure Consents  
Department of Energy and Climate Change

11th July 2013

## SCHEDULE 1 Authorised Project

Article 2

### PART 1

#### Authorised Development

A nationally significant infrastructure project as defined in sections 14 and 15 of the 2008 Act on the bed of the North Sea approximately 33 kilometres off the coast of Lincolnshire and 46 kilometres off the coast of North Norfolk within the Renewable Energy Zone, comprising—

*Work No. 1* — an offshore wind turbine generating station with a gross electrical output capacity of up to 1200 MW comprising up to 288 wind turbine generators each fixed to the seabed by one of five foundation types (namely, monopile, jacket, tripod, suction bucket monopod or gravity base foundation), fitted with rotating blades and situated within the coordinates for the Order limits shown on the Works plan and specified below, and including the further works comprising (a) to (c) below;

#### Coordinates for the Order limits (Datum: WGS 84)

<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>	<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>
1	53° 29' 12.732" N	0° 41' 28.839" E	2	53° 31' 42.626" N	0° 42' 58.367" E
3	53° 32' 16.234" N	0° 51' 40.692" E	4	53° 24' 31.248" N	0° 59' 39.385" E
5	53° 24' 31.234" N	0° 56' 1.766" E			

- (a) up to 4 collector substations fixed to the seabed by jacket or monopile foundations within the Order limits;
- (b) up to 4 meteorological stations fixed to the seabed by monopile, jacket, tripod, suction bucket monopod or gravity base foundations within the Order limits;
- (c) a network of cables laid underground within the Order limits between the wind turbine generators, the meteorological stations, any collector substation and Work No. 2, for the transmission of electricity and electronic communications between these different structures, including one or more cable crossings;

and associated development within the meaning of section 115(2) of the 2008 Act comprising—

*Work No. 2* — up to 4 HVDC substations or up to 2 large HVDC substations fixed to the seabed by gravity, jacket or monopile foundations, within the Order limits;

and in connection with such Work Nos. 1 and 2, and to the extent that they do not otherwise form part of any such work, further associated development within the Order limits comprising such other works as may be necessary or expedient for the purposes of or in connection with the relevant part of the authorised project and which fall within the scope of the work assessed by the environmental statement.

## PART 2

### Ancillary Works

Works within the Order limits which have been subject to an environmental impact assessment recorded in the environmental statement comprising—

- (a) temporary landing places, or other means of accommodating vessels in the construction and/or maintenance of the authorised development; and
- (b) buoys, beacons, fenders and other navigational warning or ship impact protection works.

## PART 3

### Requirements

#### Interpretation

1. In this Part of this Schedule—

“the CAA” means the Civil Aviation Authority constituted by the Civil Aviation Act 1982(a);

“commence” means beginning to carry out any material operation (as defined in section 155 of the Planning Act 2008) forming part of the authorised project other than operations consisting of site clearance, archaeological investigations, environmental surveys, investigations for the purpose of assessing ground conditions, remedial work in respect of any contamination or other adverse ground conditions and “commencement” shall be construed accordingly;

“HAT” means highest astronomical tide;

“LAT” means lowest astronomical tide;

“mean high water springs level” or “MHWS” means the highest level which spring tides reach on average over a period of time;

“notice to mariners” includes any notice to mariners which may be issued by the Admiralty, Trinity House, Queen’s harbourmasters, government departments and harbour and pilotage authorities;

“the UK Hydrographic Office” means the UK Hydrographic Office of Admiralty Way, Taunton, Somerset, TA1 2DN or any replacement body or successor to its functions.

#### Time limits

2. The authorised development shall commence no later than the expiration of seven years beginning with the date this Order comes into force or such longer period as the Secretary of State may hereafter direct in writing.

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(a) 1982 c. 16.

### Detailed design parameters

- 3.—(1) No wind turbine generator forming part of the authorised development shall—
- (a) exceed a height of 220 metres when measured from LAT to the tip of the vertical blade;
  - (b) exceed a height of 140 metres when measured from LAT to the height of the centreline of the generator shaft forming part of the hub;
  - (c) exceed a rotor diameter of 180 metres;
  - (d) be less than a multiple of 4 times the rotor diameter from the nearest WTG in either direction perpendicular to the approximate prevailing wind direction (cross-wind) or be less than a multiple of 7 times the rotor diameter from the nearest WTG in either direction which is in line with the approximate prevailing wind direction (downwind);
  - (e) have a distance of less than 22 metres between the lowest point of the rotating blade of the wind turbine and MHWS or less than 27.4 metres between the lowest point of the rotating blade of the wind turbine and LAT.
- (2) In sub-paragraph (1), references to the location of a wind turbine generator are references to the centre point of that turbine.

### Further offshore design requirements

4. No wind turbine generator, HVDC substation, large HVDC substation, collector substation, combined substation or meteorological station forming part of the authorised development shall be erected within the areas hatched black on the Works plan, whose coordinates are specified below—

<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>	<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>
1	53° 26' 33.465" N	0° 49' 43.804" E	2	53° 26' 50.747" N	0° 48' 50.232" E
3	53° 29' 53.970" N	0° 54' 07.524" E	4	53° 29' 24.316" N	0° 54' 38.088" E

- 5.—(1) The total number of offshore substations forming part of the authorised development shall not exceed eight, comprising either—
- (a) up to four collector stations and up to four HVDC substations, or
  - (b) up to four collector stations and up to two large HVDC substations, or
  - (c) up to four combined substations.
- (2) The dimensions of any collector substation forming part of the authorised development (excluding towers, helipads, masts and cranes) shall not exceed 60 metres in height when measured from LAT and shall not exceed 45 metres in length and 45 metres in width.
- (3) The dimensions of any HVDC substation forming part of the authorised development (excluding towers, helipads, masts and cranes) shall not exceed 60 metres in height when measured from LAT, and shall not exceed 77 metres in length and 65 metres in width.
- (4) The dimensions of any large HVDC substation forming part of the authorised development (excluding towers, helipads masts and cranes) shall not exceed 60 metres in height when measured from LAT, and shall not exceed 100 metres in length and 75 metres in width.
- (5) The dimensions of any combined substation forming part of the authorised development (excluding towers, helipads, masts and cranes) shall not exceed 60 metres in height when measured from LAT, and shall not exceed a footprint area which totals the combined maximum footprint area of the collector station (45 metres x 45 metres) and the HVDC substation (75 metres x 65 metres) or large HVDC substation (100 metres x 75 metres) which is comprised in the combined substation.
- (6) Each offshore substation, combined substation or large HVDC substation shall have no more than one supporting foundation.



(7) No lattice tower forming part of a meteorological station shall exceed a height of 200 metres above LAT.

(8) No meteorological station shall have more than one supporting foundation.

6. The total length of the cables comprising Work No. 1(c) shall not exceed 475 kilometres.

7.—(1) No monopile foundation forming part of the authorised development shall—

- (a) in the case of a steel monopile foundation have a diameter of more than 7 metres for use with meteorological stations and for use in all other instances a diameter of more than 8.5 metres; and
- (b) in the case of a concrete monopile foundation have a diameter of more than 8.5 metres for use with meteorological stations and for use in all other instances of diameter of more than 10.5 metres.

(2) No gravity base foundation forming part of the authorised development shall have—

- (a) for use with large HVDC substations or combined substations a length at the level of the seabed of more than 100 metres, a width of 15 metres or a height of more than 15 metres; or for use in all other instances, a diameter at the level of the seabed of more than 45 metres;
- (b) a base height, where there is a flat base, of more than 7 metres above the level of the seabed;
- (c) a cone/column intersect which is higher than 32 metres above the top of the base;
- (d) a cone diameter of more than 45 metres at its base;
- (e) a column diameter, where there is a flat or conical base, of more than 10 metres.

(3) No jacket foundation forming part of the authorised development shall have—

- (a) for use with wind turbine generators a width spacing between each leg at the level of the seabed of more than 30 metres and more than 4 legs;
- (b) a pile diameter of more than 3 metres;
- (c) more than one pile per leg or more than one suction can per leg;
- (d) for use with offshore substations, combined substations or large HVDC substations more than 8 legs; and for use with combined substations more than 16 legs;
- (e) a suction can which is more than 14 metres in diameter.

(4) No suction bucket monopod foundation forming part of the authorised development shall have—

- (a) a diameter at the level of the seabed of more than 25 metres;
- (b) a column diameter of more than 10.5 metres.

(5) No tripod foundation forming part of the authorised development shall have—

- (a) more than three legs;
- (b) a brace diameter of more than 5.5 metres;
- (c) a pile diameter of more than 3 metres;
- (d) more than one pile per leg;
- (e) a column diameter of more than 8 metres;
- (f) a suction can which is more than 14 metres in diameter.

### **Offshore safety management**

8.—(1) No authorised development shall commence until the Secretary of State, in consultation with the MCA, has confirmed in writing that the undertaker has taken into account and adequately addressed all MCA recommendations contained within MGN371 “Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response

Issues” and its annexes including full details of the Emergency Co-operation Plans (ERCoP) for the construction, operation and decommissioning as appropriate to the authorised development.

(2) The undertaker will prepare and implement a project-specific Active Safety Management System, taking account of safety and mitigation measures as referred to in the navigation risk assessment in the environmental statement.

### **Aids to navigation**

9. The undertaker shall at or near the authorised development during the whole period of the construction, operation, alteration, replacement or decommissioning of the authorised development exhibit such lights, marks, sounds, signals and other aids to navigation as Trinity House may from time to time direct.

10. The undertaker shall ensure that timely and efficient notices to mariners and other navigational warnings of the position and nature of the authorised development, are issued during and after the period of construction, alteration, replacement or decommissioning of the authorised development, such information to be promulgated to mariners in the shipping and fishing industry as well as to recreational mariners.

11. The undertaker shall notify Trinity House as soon as reasonably practicable of both the progress and completion of the authorised development and any aids for navigation established from time to time.

12. The undertaker shall provide reports on the availability of aids to navigation periodically as requested by Trinity House.

13. The undertaker shall notify the UK Hydrographic Office of the progress and completion of the authorised development.

14.—(1) The undertaker shall colour all structures yellow from at least highest astronomical tide to a height directed by Trinity House, or shall colour the structure as directed by Trinity House from time to time.

(2) Subject to sub-paragraph (1), unless the Secretary of State otherwise directs, the undertaker shall ensure that the wind turbine generators shall be painted submarine grey (colour code RAL 7035).

### **Provision against danger to navigation**

15. In case of injury to, or destruction or decay of, the authorised development or any part thereof the undertaker shall as soon as reasonably practicable notify Trinity House and shall lay down such buoys, exhibit such lights and take such other steps for preventing danger to navigation as Trinity House may from time to time direct.

### **Air traffic**

16.—(1) No construction of any wind turbine generator forming part of the authorised development shall commence until the Secretary of State having consulted with the Operator is satisfied that appropriate mitigation will be implemented and maintained for the life of the authorised development and that arrangements have been put in place with the Operator to ensure that such appropriate mitigation is implemented before the authorised development gives rise to any adverse impact on air traffic services.

(2) In this requirement—

“appropriate mitigation” means measures to prevent or remove any adverse impacts which the operation of the authorised development will have on the Operator’s ability to provide safe and efficient air traffic services during the lifetime of the authorised development in respect of which all necessary stakeholder consultation has been completed by the Operator and all necessary approvals and regulatory consents have been obtained;

“Operator” means NATS (En Route) plc incorporated under the Companies Act (4129273) whose registered office is 5th Floor, Brettenden House South, Lancaster Place, London, WC2E 7EN or such other organisation as is licensed from time to time under sections 5 and 6 of the Transport Act 2000 to provide air traffic services in an area which include the authorised development.

**Lighting**

17. The undertaker shall exhibit such lights, with such shape, colour and character as are required by Air Navigation Order 2009(a), or as directed by the CAA.

18.—(1) Each wind turbine generator forming part of the authorised development shall exhibit day and night a light with a luminous intensity of a maximum of 2000 candela and not less than 200 candela.

(2) The Requirement in sub-paragraph (1) shall not apply to the illumination of any wind turbine generator in respect of which the Secretary of State following consultation with the Ministry of Defence shall have dispensed with such requirement or shall have specified alternative lighting requirements in writing.

**Onshore traffic management**

19.—(1) No authorised development or part of the authorised development shall commence until a traffic management plan for the onshore port-related traffic to and from the selected port or ports for construction and/or operation of the authorised development, and relating to the authorised development, has been submitted to and approved in writing by the relevant planning authority in consultation with the relevant highway authority. The traffic management plans shall be implemented as approved at all times specified within the traffic management plan during the construction and/or operation of the authorised development, unless otherwise agreed by the relevant planning authority.

(2) For the purposes of this requirement, “relevant planning authority” and “relevant highway authority” mean the planning or highway authority or authorities in whose area the relevant port is located.

(3) For the purposes of this requirement “selected port” or “ports” means a port or ports situated in England and/or Wales.

**Aggregates dredging**

20.—(1) No part of the authorised development shall commence south of a line shown on the Works plan proceeding from point 1 to point 4 in sequence and lying 1,000 metres from the boundary of the active dredging area within the Humber Region Licensed Marine Aggregates Dredging Area 440 unless the Secretary of State has first approved a scheme of mitigation of impacts on aggregates dredging activity. Points 1 to 4 are specified below—

<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>	<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>
1	53° 25' 14.64" N	0° 53' 51.36" E	2	53° 25' 3.42" N	0° 54' 33.96" E
3	53° 25' 2.46" N	0° 56' 41.88" E	4	53° 24' 31.26" N	0° 58' 33.9" E

(2) The scheme of mitigation referred to in this requirement shall be implemented as approved.

(3) In this requirement—

“scheme of mitigation” means measures to maintain a construction restriction zone of 500 metres from the nearest wind farm structure where no aggregate dredging activity or aggregate dredging vessel manoeuvring will take place; and operational restriction zones extending 500

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(a) S.I. 2009/3015, to which there are amendments not relevant to this Order.

metres from the nearest wind farm structure where dredging vessel manoeuvring must not take place or extending 1,000 metres from the nearest wind farm structure where aggregate dredging activity may take place at some or all tidal states dependent on the aggregate dredging vessel hopper capacity;

“Wind farm structure” means any wind turbine generator, HVDC substation, collector substation, combined substation, meteorological station or cabling or other works comprised in the authorised development.

### **Pipeline or cable crossings**

**21.**—(1) No part of the authorised development involving any pipeline and/or cable crossings shall commence unless and until the undertaker has ensured beforehand that the proposals and specifications for the pipeline and cable crossings meet the relevant statutory undertakers’ safety standards in respect of that pipeline or cable crossing.

(2) On written request from the MMO the undertaker shall provide to the MMO copies of any documents and/or correspondence in relation to steps the undertaker has taken in compliance with sub-paragraph (1), subject to no more than four requests per calendar year.

### **Offshore decommissioning**

**22.** No authorised development shall commence until a written decommissioning programme in compliance with any notice served upon the undertaker by the Secretary of State pursuant to section 105(2) of the 2004 Act has been submitted to the Secretary of State for approval.

### **Requirement for written approval**

**23.** Where under any of the above Requirements the approval or agreement of the Secretary of State, the relevant planning authority or another person is required, that approval or agreement must be given in writing.

## **SCHEDULE 2**

Article 8

### **Deemed licence under the Marine and Coastal Access Act 2009**

#### **PART 1**

#### **Licensed Marine Activities**

#### **Interpretation**

**1.**—(1) In this licence—

“the 2004 Act” means the Energy Act 2004(a);

“the 2008 Act” means the Planning Act 2008(b);

“the 2009 Act” means the Marine and Coastal Access Act 2009(c);

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(a) 2004 c. 20.  
(b) 2008 c. 29.  
(c) 2009 c. 23.

“Annex 1 Habitat” means such habitat as defined under the EU Council Directive 92/43/EEC(a) on the Conservation of Natural Habitats and of Wild Fauna and Flora;

“authorised deposits” means the substances and articles specified in paragraph 2(3);

“authorised scheme” means Work Nos. 1 and 2 and any associated development described in paragraph 2 of this licence or any part of those works but does not include works (c) or (d) in sub-paragraph (2) of paragraph 2 of this licence;

“cable armouring” means measures to protect cables and prevent loss of seabed sediment by use of grout bags, protective aprons, mattresses, flow energy dissipation (frond) devices or rock and gravel dumping;

“Cefas” means the Centre of Environment, Fisheries and Aquaculture Science;

“collector substation” means a platform (either singly or as part of a combined substation) with one or more decks housing or incorporating high voltage alternating current electrical switchgear and/or electrical transformers and other equipment to enable power from multiple WTGs to be collected and electronically converted for transmission including permanent accommodation for operations and maintenance staff, helicopter landing facilities, craneage, access equipment, J-tubes, marking and lighting, and other associated equipment and facilities;

“combined substation” means a single platform comprising a collector substation combined with either an HVDC substation or with a large HVDC substation;

“commence” means beginning to carry out any material operation (as defined in section 155 of the 2008 Act) forming part of the authorised project other than operations consisting of site clearance, archaeological investigations, environmental surveys, investigations for the purpose of assessing ground conditions, remedial work in respect of any contamination or other adverse ground conditions and “commencement” shall be construed accordingly;

“concrete monopile foundations” means a concrete or steel reinforced concrete pile, typically cylindrical, drilled into the seabed, and associated equipment including scour protection, J-tube, corrosion protection systems and access-related equipment;

“condition” means a condition in Part 2 of this licence and references in this licence to numbered conditions are to the conditions with those numbers in Part 2;

“enforcement officer” means a person authorised to carry out enforcement duties under Chapter 3 of the 2009 Act;

“the environmental statement” means the document (Reference 05/01) certified as the environmental statement by the Secretary of State for the purposes of the Order and submitted with the application on 31 January 2012;

“gravity base foundation” means a structure principally of steel, concrete or steel and concrete which rests on the seabed either due to its own weight with or without added ballast or additional steel skirts and associated equipment including scour protection, J-tube, corrosion protection systems and access platforms and equipment;

“HVDC substation” means a platform (either singly or as part of a combined substation or linked by bridge to a collector substation) with one or more decks housing or incorporating high voltage direct current electrical switchgear and/or electrical transformers and other equipment to enable HVDC transmission to be used to convey the power output of the multiple WTGs to shore including permanent accommodation for operations and maintenance staff, helicopter landing facilities, craneage, access equipment, J-tubes, marking and lighting and other associated equipment and facilities;

“jacket foundation” means a metal jacket/lattice type structure constructed of steel or reinforced concrete which is fixed to the seabed at two or more points with driven or pre-installed piles or with suction cans and associated equipment including scour protection, J-tube, corrosion protection systems and access platforms and equipment;

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(a) OJ No L 206, 22.7.93, p7.

“JNCC” means the Joint Nature Conservation Committee;

“the Kingfisher Fortnightly Bulletin” means the bulletin published by the Humber Seafood Institute or such other alternative publication approved in writing by the MMO for the purposes of this licence;

“large HVDC substation” means an HVDC substation (either singly or as part of a combined substation) whose maximum dimensions exceed those of an HVDC substation as set out in condition 3(3) in Part 2 of this licence;

“LAT” means lowest astronomical tide;

“licensed activities” means the activities specified in Part 1 of this licence;

“major storm event” means a greater than 1 in 10 year wave event within the Order limits seaward of MHWS in terms of wave height;

“the MMO” means the Marine Management Organisation” or the body created under the 2009 Act which is responsible for the monitoring and enforcement of this licence;

“MCA” means the Maritime and Coastguard Agency;

“mean high water springs” or “MHWS” means the highest level which spring tides reach on average over a period of time;

“meteorological station” means a lattice tower housing or incorporating equipment to measure wind speed and other wind characteristics, including a service platform housing electrical switchgear and communication equipment and associated equipment, oceanographic equipment and connecting cable to be sited within 300 metres of the mast, and marking and lighting;

“monopile foundation” means a concrete monopile foundation or a steel monopile foundation;

“notice to mariners” includes any notice to mariners which may be issued by the Admiralty, Trinity House, Queen’s harbourmasters, government departments and harbour and pilotage authorities;

“offshore substation” means either a collector substation or HVDC substation;

“the Order” means the Triton Knoll Offshore Wind Farm Order 2013;

“the Order limits” means the limits shown on the Works plan as the limits within which the authorised scheme may be carried out, whose grid coordinates are set out in paragraph 2(2) of Part 1 of this licence;

“scour protection” means measures to prevent loss of seabed sediment around foundation bases by use of protective aprons, mattresses, flow energy dissipation (frond) devices or rock and gravel dumping;

“steel monopile foundation” means a steel pile, typically cylindrical, driven and/or drilled into the seabed and associated equipment including scour protection, J-tube, corrosion protection systems and access platforms and equipment;

“suction bucket monopod foundation” means a tubular metal structure which partially penetrates the seabed and remains in place using its own weight and a hydrostatic pressure differential and associated equipment, including scour protection, bracing, J-tube, corrosion protection systems and access platforms and equipment;

“suction can” means a large diameter steel cylinder which is fixed to the base of the foundation and partially penetrates the seabed and remains in place using its own weight and hydrostatic pressure differential;

“Trinity House” means The Corporation of Trinity House of Deptford Strond;

“tripod foundation” means a metal jacket/lattice type structure consisting of three main legs linked by cross-braces supporting a single central support for the transition piece and turbine, constructed of steel or reinforced concrete which is fixed to the seabed with driven or pre-installed piles or suction cans, and associated equipment including scour protection, J-tube, corrosion protection systems and access platforms and equipment;

“undertaker” means Triton Knoll Offshore Wind Farm Limited;

“vessel” means every description of vessel, however propelled or moved, and includes a non-displacement craft, a personal watercraft, a seaplane on the surface of the water, a hydrofoil vessel, a hovercraft or any other amphibious vehicle and any other thing constructed or adapted for movement through, in, on or over water and which is at the time in, on or over water;

“wind turbine generator” or “WTG” means a structure comprising a tower, rotor with three blades connected at the hub, nacelle and ancillary electrical and other equipment which may include J-tubes, transition piece, access and rest platforms, access ladders, boat access systems, corrosion protection systems, fenders and maintenance equipment, helicopter landing facilities and other associated equipment, fixed to a foundation;

“the Works plan” means the plan submitted with the application (02/03/v3 dated 11 December 2012) and certified as the Works plan by the Secretary of State for the purposes of the Order.

(2) Unless otherwise indicated, in this licence —

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

(3) Except where otherwise notified in writing by the relevant organisation, the primary point of contact with the organisations listed below and the address for returns and correspondence shall be—

- (a) Marine Management Organisation  
Offshore Licensing Team  
Lancaster House  
Hampshire Court  
Newcastle Business Park  
Newcastle upon Tyne  
NE4 7YH  
Tel: 0300 123 1032;
- (b) Trinity House  
Tower Hill  
London  
EC3N 4DH  
Tel: 020 7481 6900;
- (c) The United Kingdom Hydrographic Office  
Admiralty Way  
Taunton  
Somerset  
TA1 2DN  
Tel: 01823 337 900;
- (d) Marine and Coastguard Agency  
Navigation Safety Branch  
Bay 2/04  
Spring Place  
105 Commercial Road  
Southampton

SO15 1EG  
Tel: 023 8032 9191;

- (e) Centre of Environment, Fisheries and Aquaculture Science  
Pakefield Road  
Lowestoft  
Suffolk  
NR33 0HT  
Tel: 01502 562 244;

- (f) Natural England  
Foundry House  
3 Millsands  
Riverside Exchange  
Sheffield  
S3 8NH  
Tel: 0300 060 4911;

- (g) JNCC  
Inverdee House  
Baxter Street  
Aberdeen  
AB11 3EH  
Tel: 01224 266550;

- (h) English Heritage  
Eastgate Court  
195-205 High Street  
Guildford  
GU1 3EH  
Tel: 01483 252 057.

- (4) For information only, the details of the local MMO office to the authorised scheme are—

Marine Management Organisation – Lowestoft District Office  
Pakefield Road  
Lowestoft  
Suffolk  
NR33 0HT  
Tel: 01502 573 149.

**Details of licensed marine activities**

2.—(1) Subject to the licence conditions, this licence authorises the undertaker (and any agent or contractor acting on their behalf) to carry out the following licensable marine activities under section 66(1) of the 2009 Act,—



- (a) the deposit at sea of the substances and articles specified in sub-paragraph (3);
- (b) the construction of works set out in sub-paragraph (2) in or over the sea and/or on or under the seabed;
- (c) the removal of sediment samples for the purposes of informing environmental monitoring under this licence during pre-construction, construction and operation; and
- (d) the disposal of up to 1,058,968 metres<sup>3</sup> of inert material of natural origin produced during the drilling installation of monopiles or jacket pin foundations within the Order Limits to the extent assessed in the environmental statement.

(2) The works referred to in sub-paragraph (1)(b) comprise—

*Work No. 1* — an offshore wind turbine generating station with a gross electrical output capacity of up to 1200 MW comprising up to 288 wind turbine generators each fixed to the seabed by one of five foundation types (namely, monopile, jacket, tripod, suction bucket monopod or gravity base foundation), fitted with rotating blades and situated within the coordinates for the Order limits shown on the Works plan and specified below, and further comprising (a) to (c) below—

**Coordinates for the Order limits (Datum: WGS 84)**

<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>	<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>
1	53° 29' 12.732" N	0° 41' 28.839" E	2	53° 31' 42.626" N	0° 42' 58.367" E
3	53° 32' 16.234" N	0° 51' 40.692" E	4	53° 24' 31.248" N	0° 59' 39.385" E
5	53° 24' 31.234" N	0° 56' 1.766" E			

- (a) up to 4 collector substations fixed to the seabed by jacket or monopile foundations within the Order limits;
- (b) up to 4 meteorological stations fixed to the seabed by monopile, jacket, tripod, suction bucket monopod or gravity base foundations within the Order limits;
- (c) a network of cables laid underground within the Order limits between the wind turbine generators, the meteorological stations, any collector substation and Work No. 2, for the transmission of electricity and electronic communications between these different structures, including one or more cable crossings;

and associated development within the meaning of section 115(2) of the 2008 Act comprising—

*Work No. 2* — up to 4 HVDC substations or up to 2 large HVDC substations fixed to the seabed by gravity, jacket or monopile foundations, within the Order limits;

and in connection with such Work Nos. 1 to 2, to the extent that they do not otherwise form part of any such work—

- (a) further associated development within the Order Limits comprising such other works as may be necessary or expedient for the purposes of or in connection with the relevant part of the authorised scheme within the scope of the work assessed by the environmental statement; and
- (b) works comprising—
  - (i) temporary landing places, or other means of accommodating vessels in the construction and/or maintenance of the authorised scheme; and
  - (ii) buoys, beacons, fenders and other navigational warning or ship impact protection works.

(3) The substances or articles authorised for deposit at sea are—

- (a) iron/steel;
- (b) stone and rock;
- (c) concrete;
- (d) sand and gravel;

- (e) plastic/synthetic;
- (f) material extracted from within the offshore Order limits during construction drilling; and
- (g) marine coatings, other chemicals and timber.

3. This licence shall remain in force until the authorised scheme has been decommissioned in accordance with a programme approved by the Secretary of State under section 106 of the 2004 Act, including any modification to the programme under section 108, and the completion of such programme has been confirmed by the Secretary of State in writing.

## PART 2

### Conditions

#### Design parameters for wind turbines

- 1.—(1) No wind turbine generator forming part of the authorised scheme shall—
- (a) exceed a height of 220 metres when measured from LAT to the tip of the vertical blade;
  - (b) exceed a height of 140 metres when measured from LAT to the height of the centreline of the generator shaft forming part of the hub;
  - (c) exceed a rotor diameter of 180 metres;
  - (d) be less than a multiple of 4 times the rotor diameter from the nearest WTG in either direction perpendicular to the approximate prevailing wind direction (cross-wind) or be less than a multiple of 7 times the rotor diameter from the nearest WTG in either direction which is in line with the approximate prevailing wind direction (downwind);
  - (e) have a distance of less than 22 metres between the lowest point of the rotating blade of the wind turbine and MHWS or less than 27.4 metres between the lowest point of the rotating blade of the wind turbine and LAT.

(2) In sub-paragraph (1), references to the location of a wind turbine generator are references to the centre point of that turbine.

#### Further offshore design requirements

2. No wind turbine generator, HVDC substation, large HVDC substation, collector substation, combined substation or meteorological station forming part of the authorised development shall be erected within the areas hatched black on the Works plan, whose coordinates are specified below—

#### Coordinates for restricted build area

<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>	<i>Point</i>	<i>Latitude (DMS)</i>	<i>Longitude (DMS)</i>
1	53° 26' 33.465" N	0° 49' 43.804" E	2	53° 26' 50.747" N	0° 48' 50.232" E
3	53° 29' 53.970" N	0° 54' 07.524" E	4	53° 29' 24.316" N	0° 54' 38.088" E

3.—(1) The total number of offshore substations forming part of the authorised development shall not exceed eight, comprising either—

- (a) up to four collector stations and up to four HVDC substations, or
- (b) up to four collector stations and up to two large HVDC substations, or
- (c) up to four combined substations.

(2) The dimensions of any collector substation forming part of the authorised scheme (excluding towers, helipads, masts and cranes) shall not exceed 60 metres in height when measured from LAT and shall not exceed 45 metres in length and 45 metres in width.

(3) The dimensions of any HVDC substation forming part of the authorised scheme (excluding towers, helipads, masts and cranes) shall not exceed 60 metres in height when measured from LAT, and shall not exceed 77 metres in length and 65 metres in width.

(4) The dimensions of any large HVDC substation forming part of the authorised scheme (excluding towers, helipads masts and cranes) shall not exceed 60 metres in height when measured from LAT, and shall not exceed 100 metres in length and 75 metres in width.

(5) The dimensions of any combined substation forming part of the authorised scheme (excluding towers, helipads, masts and cranes) shall not exceed 60 metres in height when measured from LAT, and shall not exceed a footprint area which totals the combined maximum footprint area of the collector station (45 metres x 45 metres) and the HVDC substation (75 metres x 65 metres) or large HVDC substation (100 metres x 75 metres) which is comprised in the combined substation.

(6) Each offshore substation, combined substation or large HVDC substation shall have no more than one supporting foundation.

(7) No lattice tower forming part of a meteorological station shall exceed a height of 200 metres above LAT.

(8) No meteorological station shall have more than one supporting foundation.

**4.—**(1) The total length of the cables comprising Work No. 1(c) shall not exceed 475 kilometres.

(2) The total length of cables comprising Work No. 1(c) which may be armoured with rock or stone shall not exceed 4,750 metres and such armouring shall not exceed 10,000 metres<sup>3</sup>.

**5.—**(1) No steel monopile foundation forming part of the authorised scheme shall—

- (a) in the case of a steel monopile foundation have a diameter of more than 7 metres for use with meteorological stations and for use in all other instances a diameter of more than 8.5 metres; and
- (b) in the case of a concrete monopile foundation have a diameter of more than 8.5 metres for use with meteorological stations and for use in all other instances a diameter of more than 10.5 metres.

(2) No gravity base foundation forming part of the authorised scheme shall have—

- (a) for use with large HVDC substations or combined substations a length at the level of the seabed of more than 100 metres, a width of 15 metres or a height of more than 15 metres; or for use in all other instances, a diameter at the level of the seabed of more than 45 metres;
- (b) a base height, where there is a flat base, of more than 7 metres above the level of the seabed;
- (c) a cone/column intersect which is higher than 32 metres above the top of the base;
- (d) a cone diameter of more than 45 metres at its base;
- (e) a column diameter, where there is a flat or conical base, of more than 10 metres.

(3) No jacket foundation forming part of the authorised scheme shall have—

- (a) for use with wind turbine generators a width spacing between each leg at the level of the seabed of more than 30 metres and more than 4 legs;
- (b) a pile diameter of more than 3 metres;
- (c) more than one pile per leg or more than one suction can per leg;
- (d) for use with offshore substations, combined substations or large HVDC substations more than 8 legs; and for use with combined substations more than 16 legs;
- (e) a suction can which is more than 14 metres in diameter.

(4) No suction bucket monopod foundation forming part of the authorised scheme shall have—

- (a) a diameter at the level of the seabed of more than 25 metres;

- (b) a column diameter of more than 10.5 metres.
- (5) No tripod foundation forming part of the authorised development shall have—
  - (a) more than three legs;
  - (b) a brace diameter of more than 5.5 metres;
  - (c) a pile diameter of more than 3 metres;
  - (d) more than one pile per leg;
  - (e) a column diameter of more than 8 metres;
  - (f) a suction can which is more than 14 metres in diameter.

### **Notifications and inspections**

- 6.**—(1) The undertaker shall ensure that—
- (a) a copy of this licence and any subsequent amendments or revisions to it is provided to—
    - (i) all agents and contractors notified to the MMO in accordance with condition 11; and
    - (ii) the masters and transport managers responsible for the vessels notified to the MMO in accordance with condition 11;
  - (b) within 28 days of receipt of a copy of this licence those persons referred to in paragraph (a) shall provide a completed confirmation form to the MMO confirming that they have read and will comply with the terms of the conditions of this licence.
- (2) Only those persons and vessels notified to the MMO in accordance with condition 11 are permitted to carry out the licensed activities.
- (3) Copies of this licence shall also be available for inspection at the following locations—
- (a) the undertaker’s registered address;
  - (b) any site office located at or adjacent to the construction site and used by the undertaker or its agents and contractors responsible for the loading, transportation or deposit for the authorised deposits; and
  - (c) on board each vessel or at the office of any transport manager with responsibility for vessels from which authorised deposits or removals are to be made.
- (4) The documents referred to in sub-paragraph (1)(a) shall be available for inspection by an authorised enforcement officer at the locations set out in sub-paragraph (3)(b).
- (5) The undertaker must provide access, and if necessary appropriate transportation, to the offshore construction site or any other associated works or vessels to facilitate any inspection that the MMO considers necessary to inspect the works during construction and operation of the authorised scheme.
- (6) The undertaker must inform the MMO in writing at least five working days prior to the commencement of the licensed activities or any part of them.
- (7) Prior to the commencement of the licensed activities or any part of them the undertaker must publish in the Kingfisher Fortnightly Bulletin details of the vessel routes, timings and locations relating to the construction of the authorised scheme or relevant part.
- (8) The undertaker shall ensure that a notice to mariners is issued at least 10 working days prior to the commencement of the licensed activities or any part of them advising of the commencement date of Work Nos. 1 and 2 (wind turbine generation station, offshore platforms or other offshore construction activities) and the expected vessel routes from the local construction ports to the relevant locations.
- (9) The undertaker shall ensure that the notices to mariners are updated and reissued at weekly intervals during construction activities and within 5 days of any planned operations and maintenance works and supplemented with VHF radio broadcasts agreed with the MCA in accordance with the construction programme approved under condition 9(3). Copies of all notices shall be provided to the MMO.
- (10) The undertaker must notify—

- (a) the Hydrographic Office of both the progress and completion of the authorised scheme in order that all necessary amendments to nautical charts are made; and
- (b) the MMO, MCA and Trinity House once the authorised scheme is completed and any required lighting or marking has been established.

### **Chemicals, drilling and debris**

7.—(1) Unless otherwise agreed in writing by the MMO, all chemicals used in the construction of the authorised scheme, including any chemical agents placed within any monopile void, shall be selected from the List of Notified Chemicals approved for use by the offshore oil and gas industry under the Offshore Chemicals Regulations 2002<sup>(a)</sup> unless otherwise agreed in writing by the MMO.

(2) Unless otherwise agreed in writing by the MMO, the undertaker shall ensure that any coatings and any treatments are suitable for use in the marine environment and are used in accordance with guidelines approved either by the Health and Safety Executive or by the Environment Agency Pollution Prevention Control Guidelines.

(3) The storage, handling, transport and use of fuels, lubricants, chemicals and other substances shall be undertaken so as to prevent releases into the marine environment, including bunding of 110% of the total volume of all reservoirs and containers.

(4) Where foundation drilling works are proposed, in the event that any system other than water-based mud is proposed the MMO's written approval in relation to the proposed disposal of any arisings shall be obtained before the drilling commences, which may also require a marine licence.

(5) The undertaker shall ensure that any debris arising from the construction of the authorised scheme or temporary works placed below MHSW are removed on completion of the authorised scheme.

(6) At least two months prior to the commencement of the licensed activities the undertaker must submit to the MMO an audit sheet covering all aspects of the construction of the licensed activities or any part of them. The audit sheet shall include details of—

- (a) loading facilities;
- (b) vessels;
- (c) equipment;
- (d) shipment routes;
- (e) working schedules; and
- (f) all components and materials to be used in the construction of the authorised scheme.

(7) No licensed activities shall commence until the MMO has approved the audit sheet in writing.

(8) The audit sheet shall be maintained throughout the construction of the authorised scheme (or relevant part) and any changes notified immediately in writing to the MMO which must give written approval prior to any change being implemented.

(9) In the event that the MMO becomes aware that any of the materials on the audit sheet cannot be accounted for it shall require the undertaker to carry out a side scan sonar survey to plot all obstructions across the relevant areas within the Order limits where the construction works and activities related to those materials have been carried out and, if the initial survey does not locate the missing materials, over such wider area as the MMO may reasonably request. Local fishermen shall be invited to send a representative to be present during the survey. Any obstructions that the MMO believes to be associated with the authorised scheme shall be removed at the undertaker's expense.

(10) The undertaker shall inform the MMO of the location and quantities of material disposed each month under this licence, by submission of a disposal return by 31 January each year for the

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<sup>(a)</sup> S.I. 2002/1355 as amended by S.I. 2011/982.

months August to January inclusive, and by 31 July each year for the months February to July inclusive.

(11) The undertaker shall ensure that only inert material of natural origin, produced during the drilling installation of monopiles or jacket pin foundations, and drilling mud shall be disposed of within the Order Limits. Any other materials shall be screened out before disposal at this site.

### **Force majeure**

8. If, due to stress of weather or any other cause the master of a vessel determines that it is necessary to deposit the authorised deposits outside of the Order limits because the safety of human life and/or of the vessel is threatened, within 48 hours full details of the circumstances of the deposit shall be notified to the MMO. The unauthorised deposits shall be removed at the expense of the undertaker unless written approval is obtained from the MMO.

### **Pre-construction plans and documentation**

9.—(1) The licensed activities shall not commence until the following have been submitted to and approved in writing by the MMO.

(2) A design plan at a scale of between 1:25,000 and 1:50,000, including detailed representation on the most suitably scaled admiralty chart, to be agreed in writing with the MMO in consultation with Trinity House and the MCA which shows—

- (a) the indicative proposed layout and location of all wind turbine generators, offshore substations and meteorological stations;
- (b) the choice of foundation of all wind turbine generators, offshore substations and meteorological stations;
- (c) the height to the tip of the vertical blade; height to the centreline of the generator shaft forming part of the hub; rotor diameter and spacing of all wind turbine generators;
- (d) the height length and width of all offshore substations or combined substations;
- (e) the height of all lattice towers forming part of meteorological stations;
- (f) the length and arrangement of all cables comprising Work No. 1(c);
- (g) the dimensions of all steel monopile and concrete monopile foundations;
- (h) the dimensions of all gravity base foundations;
- (i) the dimensions of all jacket or tripod foundations;
- (j) the dimensions of all suction bucket monopod foundations;
- (k) all exclusion zones specified under sub-paragraph (9)(d) of this condition as are comprised in the works at paragraph 2(2) of Part 1 (Licensed Marine Activities) of this licence;
- (l) the exclusion zone specified in condition 2;
- (m) in plan form, the indicative programming of particular works as set out in the indicative written construction programme to be provided under sub-paragraph (3)(d);

to ensure conformity with the description of Work Nos. 1 and 2 and compliance with conditions 1 to 5.

(3) A construction and monitoring programme to include details of—

- (a) the proposed construction start date;
- (b) proposed timings for mobilisation of plant, delivery of materials and installation works;
- (c) proposed pre-construction surveys, baseline report format and content, construction monitoring, post-construction monitoring and related reporting in accordance with sub-paragraph (9)(g) and , conditions 13, 14 and 15. The pre-construction survey programme and all pre-construction survey methodologies shall be submitted to the MMO for written approval by the MMO in consultation with Natural England and JNCC at least four months prior to the commencement of any survey works detailed within; and

- (d) an indicative written construction programme for all wind turbine generators, offshore substations, meteorological substations and cables comprised in the licensed activities (insofar as not shown in paragraph (b)).
- (4) A construction method statement in accordance with the construction methods assessed in the environmental statement and including details of—
- (a) drilling methods and disposal of drill arisings;
  - (b) turbine, meteorological mast and substation location and installation, including scour protection;
  - (c) cable installation;
  - (d) contractors;
  - (e) vessels; and
  - (f) associated works.
- (5) A project environmental management and monitoring plan to include details of—
- (a) a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents during construction and operation of the authorised scheme in relation to all activities carried out;
  - (b) a chemical risk assessment to include information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance;
  - (c) waste management and disposal arrangements;
  - (d) the appointment and responsibilities of a fisheries liaison officer, to include preparation of a fisheries liaison plan as set out in the environmental statement, and an environmental liaison officer. The fisheries liaison officer shall be notified to and approved by the District Marine Officer for the MMO's Eastern District.
- (6) A scour protection management and cable armouring plan providing details of the need, type, sources, quality area, volume and installation methods for scour protection and cable armouring and a statement of the total area and volume of scour protection and cable armouring material to be installed, to be within the scope of the environmental impact assessment recorded in the environmental statement.
- (7) A marine mammal mitigation protocol to be agreed in writing with the MMO in consultation with Natural England and JNCC and following current best practice as advised by the statutory nature conservation agencies, to include—
- (a) identification of a Marine Mammal Monitoring Zone (MMMZ);
  - (b) appointment of an appropriate number of suitably qualified marine mammal observers;
  - (c) methods for the detection of marine mammals within the MMMZ whether visually (by the marine mammal observers) or acoustically using Passive Acoustic Monitoring equipment or other means of detection;
  - (d) a reporting methodology to enable efficient communication between the marine mammal observers and the person responsible for approving commencement of piling;
  - (e) an appropriate soft start procedure whereby piling activities do not commence until an agreed time has elapsed and during which marine mammals have not been detected within the MMMZ;
  - (f) where appropriate methods for the application of acoustic deterrent devices, and
  - (g) where appropriate construction monitoring of marine mammals.
- (8) A cable specification and installation plan, to include—
- (a) technical specification of offshore cables, including a desk-based assessment of attenuation of electro-magnetic field strengths, shielding and cable burial depth in accordance with industry good practice; and
  - (b) a detailed cable laying plan for the Order limits, incorporating a burial risk assessment to ascertain suitable burial depths, pipeline and cable crossings and cable laying techniques.

(9) A written scheme of archaeological investigation (WSI) in relation to the Order limits in accordance with industry good practice and after discussions with English Heritage to include—

- (a) details of responsibilities of the undertaker, archaeological consultant and contractor;
- (b) a methodology for any further site investigation including any specifications for geophysical, geotechnical and diver or remotely operated vehicle investigations;
- (c) analysis and reporting of survey data, and timetable, which is to be submitted to the MMO within three months of any survey being completed;
- (d) delivery of any mitigation including, where necessary, archaeological exclusion zones;
- (e) monitoring during and post construction, including a conservation programme for finds;
- (f) archiving of archaeological material, inclusive of any completed and agreed archaeological reports produced through the WSI which are to be deposited by the undertaker within a public archive in accordance with the OASIS (Online Access to the Index of archaeological investigationS') system; and
- (g) a reporting and recording protocol, including reporting of any wreck or wreck material during construction, operation and decommissioning of the authorised scheme.

**10.—**(1) Each programme, statement, plan, protocol or scheme required to be approved under condition 9 shall be submitted for approval at least four months prior to the intended start of construction, except where otherwise stated or unless otherwise agreed in writing by the MMO.

(2) The licensed activities shall be carried out in accordance with the approved plans, protocols, statements, schemes and details approved under condition 9, unless otherwise agreed in writing by the MMO.

(3) No part of this licence authorises any part of the authorised scheme extending beyond the detailed design parameters at conditions 1 to 5.

#### **Reporting of engaged agents, contractors and vessels**

**11.—**(1) The undertaker shall provide the following information to the MMO—

- (a) the name and function of any agent or contractor appointed to engage in the licensed activities within seven days of appointment; and
- (b) each week during the construction of the authorised scheme a completed Hydrographic Note H102 listing the vessels currently and to be used in relation to the licensed activities.

(2) Any changes to the supplied details must be notified to the MMO in writing prior to the agent, contractor or vessel engaging in the licensed activities. All agents, contractors and/or vessel operators will abide by the conditions set out in this licence.

#### **Equipment and operation of vessels engaged in licensed activities**

**12.—**(1) All vessels employed to perform the licensed activities shall be constructed and equipped to be capable of the proper performance of such activities in accordance with the conditions of this licence and (save in the case of remotely operated vehicles or vessels) shall comply with sub-paragraphs (2) to (7).

(2) All motor powered vessels must be fitted with—

- (a) electronic positioning aid to provide navigational data;
- (b) radar;
- (c) echo sounder; and
- (d) multi-channel VHF.

(3) No radio beacon or radar beacon operating on the marine frequency bands shall be installed or used without the prior written approval of the Secretary of State.

(4) All vessels' names or identification shall be clearly marked on the hull or superstructure.



(5) All vessels shall exhibit signals in accordance with the requirements of the International Regulations for the Prevention of Collisions at Sea.

(6) All communication on VHF working frequencies shall be in English.

(7) No vessel shall engage in the licensed activities until all the equipment specified in sub-paragraph (2) is fully operational.

### **Pre-construction monitoring**

**13.**—(1) The undertaker shall, in discharging condition 9(3), submit details for written approval by the MMO, in consultation with Natural England and JNCC, of proposed pre-construction surveys, including methodologies and timings, and a proposed format and content for a pre-construction baseline report. The survey proposals shall specify each survey's objectives and explain how it will assist in either informing a useful and valid comparison with the post-construction position and/or will enable the validation or otherwise of key predictions in the environmental statement. The baseline report proposals shall ensure that the outcome of the agreed surveys together with existing data and reports are drawn together to present a valid statement of the pre-construction position, with any limitations, and shall make clear what post-construction comparison is intended and the justification for this being required.

(2) The pre-construction surveys referred to in sub-paragraph (1) shall, unless otherwise agreed with the MMO, have due regard to, but not be limited to, the need to undertake—

- (a) a survey, in combination with data derived from condition 13(2)(c) to determine the location and extent of any benthic Annex 1 Habitat in whole or in part inside the areas within the Order limits in which it is proposed to carry out construction works;
- (b) a survey to determine the location, extent and composition of any other benthic habitats of conservation, ecological and or economic importance;
- (c) a high resolution swath bathymetric survey and side-scan sonar survey of the areas within the Order limits in which it is proposed to carry out construction works, including a 500 metre buffer area around the site of each works and inclusive of seabed anomalies or sites of historical or archaeological interest that lie within that 500 metre buffer;
- (d) a survey of existing ornithological activity inside the areas within the Order limits in which it is proposed to carry out construction works, and any wider areas where appropriate, which is required to test predictions in the environmental statement concerning key ornithological interests of relevance to the authorised scheme;
- (e) a baseline survey of fish species of particular relevance to the authorised scheme within the Order limits in which it is proposed to carry out construction works, and any wider areas where appropriate.

(3) The undertaker shall carry out the surveys approved under sub-paragraph (1) and provide the baseline report to the MMO in the agreed format in accordance within the agreed timetable, unless otherwise agreed in writing by the MMO, in consultation with Natural England and JNCC.

### **Construction monitoring**

**14.**—(1) Unless otherwise agreed, the undertaker shall, in discharging condition 9(3), submit details for approval by the MMO in consultation with Natural England and JNCC of any proposed surveys or monitoring, including methodologies and timings, to be carried out during the construction of the authorised scheme. The details of the construction monitoring shall be submitted at least four months prior to the commencement of any survey works and provide the agreed reports in the agreed format in accordance within the agreed timetable, unless otherwise agreed in writing with the MMO in consultation with Natural England and JNCC. The survey proposals shall specify each survey's objectives. In any event, such monitoring shall, where driven or part-driven pile foundations are proposed to be used, include monitored background noise measurements (during periods when piling is not being undertaken) and measurements of noise generated by the installation of the first four monopile foundations. The results of the initial noise measurements shall be provided to the MMO within four weeks of the installation of the last of the

four piles. The assessment of this report by the MMO shall determine whether any further noise monitoring is required.

(2) The construction surveys referred to in sub-paragraph (1) shall also have due regard to, but not be limited to, the need to undertake monitoring of marine mammals as part of a marine mammal mitigation protocol under condition 9(7)(g).

### **Post construction surveys**

**15.**—(1) The undertaker shall, in discharging condition 9(3) submit details for written approval by the MMO in consultation with Natural England and JNCC of proposed post-construction surveys, including methodologies and timings, and a proposed format, content and timings for providing reports on the results at least four months prior to the commencement of any survey works detailed within. The survey proposals shall specify each survey's objectives and explain how it will assist in either informing a useful and valid comparison with the pre-construction position and/or will enable the validation or otherwise of key predictions in the environmental statement.

(2) The post construction surveys referred to in sub-paragraph 15(1) shall unless otherwise agreed with the MMO have due regard to, but not be limited to, the need to undertake—

- (a) a survey of ornithological activity inside the areas within the Order limits in which construction works were carried out, and any wider areas where appropriate, which is required to test predictions in the environmental statement concerning key ornithological interests of relevance to the authorised scheme;
- (b) one high resolution swath bathymetric survey and side scan sonar survey per annum around a sample of adjacent turbines to a distance of three turbine spacings to assess any changes in seabed topography. For this purpose the undertaker will prior to the first such survey submit a desk based assessment (which takes account of all factors which influence scour) to identify the sample of adjacent turbines with greatest potential for scour. The survey will be used to validate the desk based assessment: further surveys beyond the maximum period of 3 years post-construction specified in sub-paragraph (3) may be required if there are significant differences between the modelled scour and recorded scour;
- (c) a survey to determine the location, extent and composition of any benthic habitats of conservation, ecological and or economic importance to validate predictions made in the environmental statement;
- (d) a survey of fish species of particular relevance to the authorised scheme within the Order limits in which construction works were carried out, and any wider areas where appropriate, for comparison against the results of the baseline survey;
- (e) dependent on the outcome of the survey undertaken in condition 13(2)(a), a survey to determine the effects of construction activity on any benthic Annex 1 Habitat in whole or in part inside the areas within the Order limits.

(3) The undertaker shall carry out the surveys approved under sub-paragraph (1) for a period of 3 years post-construction and provide the agreed reports in the agreed format in accordance with the agreed timetable, unless otherwise agreed in writing with the MMO in consultation with Natural England and JNCC.

### **Herring spawning**

**16.** No pile driving works shall be carried out by or on behalf of the undertaker as part of or in relation to the authorised scheme between 1st September and 16th October each year unless the MMO provides written confirmation to the undertaker beforehand that such works can take place, in all or in a specified part of the site, during this period or a part of this period.

## **EXPLANATORY NOTE**

*(This note is not part of the Order)*

This Order grants development consent for, and authorises Triton Knoll Offshore Wind Farm Limited to construct, operate and maintain a generating station in the sea approximately 33 kilometres off the coast of Lincolnshire, 46 kilometres off the coast of Norfolk and 48 kilometres off the nearest point on the coast of the East Riding of Yorkshire, together with all necessary and associated development. The Order imposes requirements in connection with the development for which it grants development consent.

The Order also grants a deemed marine licence for the marine licensable activities, being the deposit of substances and articles and the carrying out of works, involved in the construction of the generating station and associated development. The deemed marine licence imposes conditions in connection with the deposits and works for which it grants consent.

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