

Hornsea Offshore Wind Farm

Project Two

Safety Zone Statement

PINS Document Reference: 11.1

APFP Regulation 6 (1)(b)(ii)

January 2015

smartwind.co.uk

**Hornsea Offshore Wind Farm
Project Two –Application for Development Consent**

Safety Zone Statement

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Document release and authorisation record

Report number	UK06-060700-STM-0004
Date	January 2015
Company name	SMart Wind Limited

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1. Introduction

- 1.1 SMart Wind Limited ('SMart Wind') as agent on behalf of the joint applicants Optimus Wind Limited and Breesea Limited (together the 'Applicant') is promoting the development of the second project, comprising up to two offshore wind farms, within the Hornsea Round 3 Zone (the 'Hornsea Zone'), hereafter referred to as 'Project Two'. Project Two will be an offshore generating station with a capacity of more than 100 MW and will therefore be a Nationally Significant Infrastructure Project ('NSIP') as defined by the Planning Act 2008.
- 1.2 The Development Consent Order ('DCO') for Project Two would authorise, among other things, the construction and operation of up to 360 wind turbines, up to two offshore accommodation platforms, up to six offshore HVAC collector substations, up to two offshore HVDC converter substations, up to two offshore HVAC reactive compensation substations, subsea inter-array electrical circuits, subsea power electrical circuits, subsea interconnector electrical circuits, a marine connection to the shore, a foreshore connection and an onshore substation comprising up to two electrical transmission stations, and the connection from there to National Grid's existing substation at North Killingholme. Project Two could have a total installed capacity of up to 1,800 megawatts ('MW').
- 1.3 This Safety Zone Statement has been prepared in accordance with Regulation 6(1)(b)(ii) of the Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 (the 'APFP Regulations') which requires the applicant for a DCO for the construction of an offshore generating station to provide a statement as to whether an application will be made for safety zones. This statement outlines the legislative requirements relating to an application for safety zones for offshore wind turbines, and associated infrastructure, under Section 95 of the Energy Act 2004 (the '2004 Act'), the Applicant's approach and the scope of the works for which the DCO is being sought.
- 1.4 The safety zone application will provide all of the information required by paragraph 3 of Schedule 16 to the 2004 Act and Regulation 3 of the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007 (the '2007 Regulations'). In accordance with Section 95 of the 2004 Act, the application will be made to the Department of Energy and Climate Change ('DECC') which acts as decision maker on behalf of the Secretary of State for Energy and Climate Change (the 'Secretary of State') for safety zones relating to NSIPs. An application is likely to be made from 2017.
- 1.5 The safety zone application will be made once the final number and precise location of the wind turbines, offshore accommodation platforms, offshore

HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations has been determined.

- 1.6 The Applicant's application is anticipated to be for standard safety zones of 500 metres ('m'), for the period of construction and major maintenance during the lifetime of the operational phase of the wind farm, around each wind turbine, offshore accommodation platform, offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations in order to ensure the safety of the wind turbines, offshore accommodation platforms, offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations, construction workers, construction vessels and other vessels navigating the area whilst works are taking place. In addition, an application is expected to be made for 500 m operational safety zones around the offshore accommodation platforms, in order to ensure the safety of the individuals on the platforms, and around the offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations in order to ensure the safety of the individuals on the platforms, protect against electrical hazards and the danger of spillage in addition to ensuring the safety of operation and maintenance vessels and other vessels navigating in the area during operation.

2. Safety Zone Statement

- 2.1 Project Two is located in the centre of the Hornsea Zone which is in the central region of UK waters in the North Sea and covers an area of 4,735 km². The East Riding of Yorkshire coast lies 31 km to the west of the Hornsea Zone's boundary. The Hornsea Zone's eastern boundary is one kilometre from the median line between the UK and Dutch waters. Its location is shown on Figure 1 below which is taken from the Environmental Statement for Project Two.
- 2.2 Regulation 6(1)(b)(ii) of the APFP Regulations requires the applicant for a DCO for an offshore generating station to provide a statement as to whether an application will be made for safety zones in respect of that offshore generating station.
- 2.3 It is the Applicant's intention to make an application for safety zones around the wind turbines, offshore accommodation platforms, offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations in the event that the DCO is granted for Project Two. It is estimated that this application would be made from 2017.
- 2.4 The Applicant intends to apply for a standard 500 m safety zone, within the meaning of that term in Regulation 2 of the 2007 Regulations, around each of the wind turbines, offshore accommodation platforms, offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations whilst construction works are on-going. Safety zones of 50 m may be sought for incomplete structures at which construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed) such as installed monopiles without transition pieces or where construction works are completed but the wind farm has not yet been commissioned. It is anticipated that the application will also request a standard 500 m safety zone for works of major maintenance during the operational phase of the project. This is in order to ensure the safety of the wind turbines, offshore accommodation platforms, offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations, the individuals working thereon, the construction vessels and other vessels navigating in the area whilst works take place.
- 2.5 In addition, the Applicant intends to apply for a 500 m safety zone around each of the offshore accommodation platforms, offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations during the operational phase of Project Two in order to ensure the safety of the individuals on the platforms, protect against electrical hazards and the danger of spillage in addition to ensuring

the safety of operation and maintenance vessels and other vessels navigating in the area.

- 2.6 Prior to the expiry of any consent granted for Project Two, consultation with DECC and any other relevant bodies would be carried out to determine whether a safety zone will be required for the decommissioning of Project Two. A further safety zone application will be submitted for decommissioning works, if required, at the relevant time.

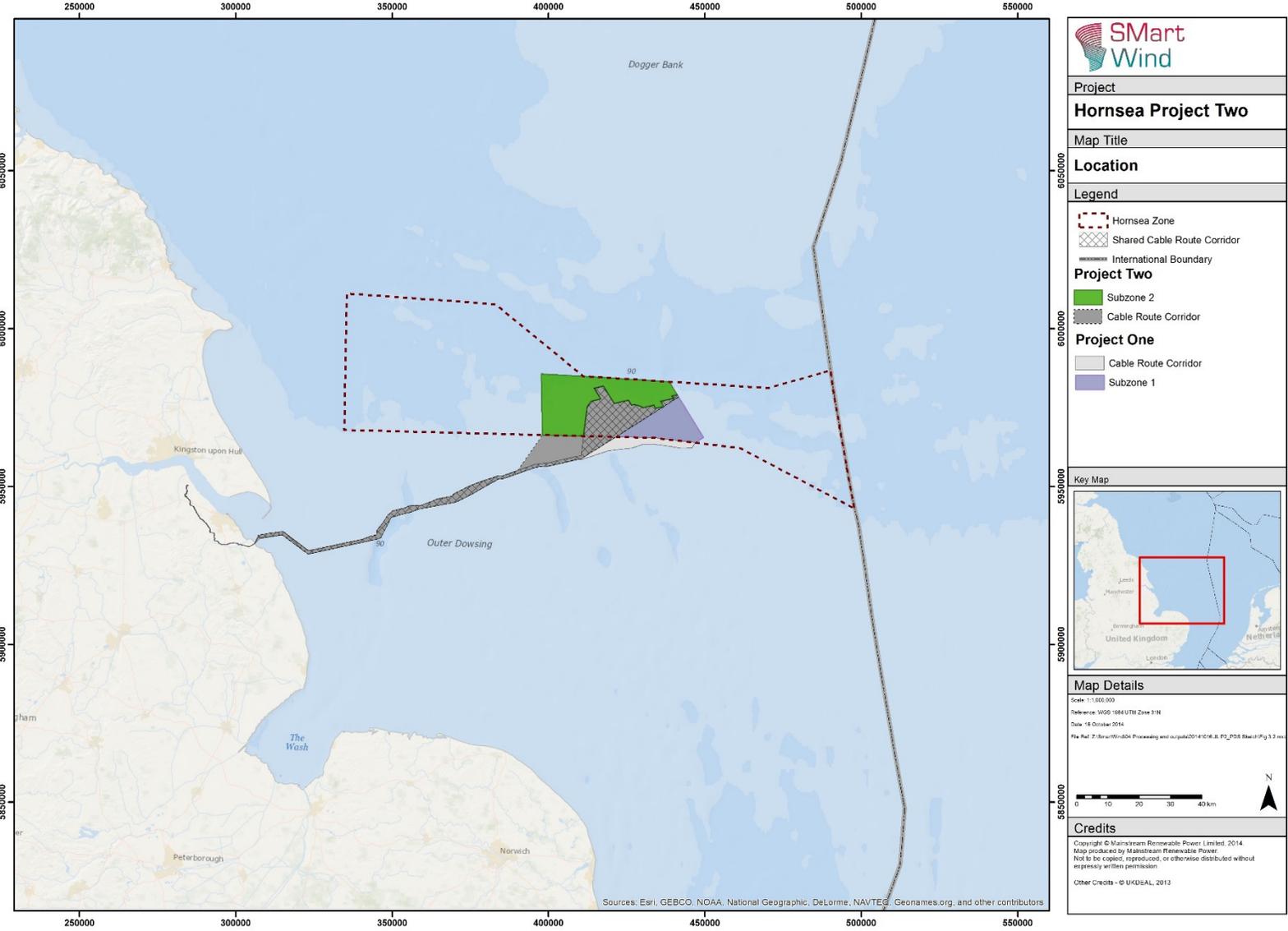


Figure 1 - Location of Project Two

3. Scope of Project Two Application

3.1 The Project Two DCO seeks, among other things, consent for the following offshore works, as set out in Part 1 of Schedule A to the DCO and summarised below.

Work No. 1A — An offshore wind generating station within the Wind Farm Area comprising:

- (i) subject to paragraph 3.2, up to 360 (inclusive) wind turbine generators fixed to the seabed;
- (ii) a network of subsea inter-array electrical circuits connecting the structures comprised in Work No. 1A with each other; with any other structure located within the Wind Farm Area; and with the network of electrical circuits comprised in Work Nos. 1B, 2A and 2B;
- (iii) subject to paragraph 3.3, up to two offshore accommodation platforms fixed to the seabed which may be connected to one of the offshore HVAC collector substations or offshore HVDC converter substations within Work No. 2A by an unsupported steel bridge and up to two electrical circuits each connecting an accommodation platform to either an offshore HVAC collector substation or to a wind turbine generator in order to power the accommodation platform.

Work No. 1B — An offshore wind generating station within the Wind Farm Area comprising:

- (i) subject to paragraph 3.2, up to 360 (inclusive) wind turbine generators fixed to the seabed;
- (ii) a network of subsea inter-array electrical circuits connecting the structures comprised in Work No. 1B with each other; with any other structure located within the Wind Farm Area; and with the network of electrical circuits comprised in Work Nos. 1A, 2A and 2B;
- (iii) subject to paragraph 3.3, up to two offshore accommodation platforms fixed to the seabed which may be connected to one of the offshore HVAC collector substations or offshore HVDC converter substations within Work No. 2B by an unsupported steel bridge and up to two electrical circuits each connecting an accommodation platform to either an offshore HVAC collector substation or to a wind turbine generator in order to power the accommodation platform.

3.2 The combined total of wind turbine generators constructed in whole or in part within Work Nos. 1A and 1B must not exceed 360.

3.3 The combined total of accommodation platforms constructed in whole or in part within Work Nos. 1A and 1B must not exceed two.

3.4 The associated development includes the following scheduled works and the works specified in paragraph 3.8:

Work No. 2A

Subject to paragraph 3.5, up to six offshore HVAC collector substations and, in the event that the mode of transmission is HVDC, up to two offshore HVDC converter substations together with a network of electrical circuits connecting the structures within Work Nos. 2A and 2B.

Work No. 2B

Subject to paragraph 3.5, up to six offshore HVAC collector substations and, in the event that the mode of transmission is HVDC, up to two offshore HVDC converter substations together with a network of electrical circuits connecting the structures within Work Nos. 2A and 2B.

Work No. 3A

In the event that the mode of transmission is HVAC and subject to paragraph 3.6, up to two offshore reactive compensation substations fixed to the seabed.

Work No. 3B

In the event that the mode of transmission is HVAC and subject to paragraph 3.6, up to two offshore reactive compensation substations fixed to the seabed.

Work No. 4A

Subject to paragraph 3.7, a marine connection to the shore, including cable and pipeline crossing works which—

- (i) if the mode of transmission is HVAC, consists of up to eight subsea electrical circuits proceeding from the offshore HVAC collector substations comprised in Work No 2A via and connecting with the offshore reactive compensation substations comprised in Work No. 3A; or
- (ii) if the mode of transmission is HVDC, consists of up to two subsea electrical circuits proceeding from the offshore HVDC converter substations comprised in Work No 2A,

and in either case terminates at Work No. 5A.

Work No. 4B

Subject to paragraph 3.7, a marine connection to the shore, including cable and pipeline crossing works which—

- (i) if the mode of transmission is HVAC, consists of up to eight subsea electrical circuits proceeding from the offshore HVAC collector substations comprised in Work No 2B via and connecting with the offshore reactive compensation substations comprised in Work No. 3B; or

- (ii) if the mode of transmission is HVDC, consists of up to two subsea electrical circuits proceeding from the offshore HVDC converter substations comprised in Work No 2B,

and in either case terminates at Work No. 5B.

Work No. 5A

A foreshore connection consisting of an extension of the electrical circuits comprised in Work No. 4A, including cable crossing works, crossing under the existing sea wall using a trenchless technique and terminating at the electrical circuit transition joint bays (Work No. 6A).

Work No. 5B

A foreshore connection consisting of an extension of the electrical circuits comprised in Work No. 4B, including cable crossing works, crossing under the existing sea wall using a trenchless technique and terminating at the electrical circuit transition joint bays (Work No. 6B).

- 3.5 The combined total of offshore HVAC collector substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed six and the combined total of offshore HVDC converter substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed two.
- 3.6 The combined total of offshore reactive compensation substations constructed in whole or in part within Work Nos. 3A and 3B must not exceed two.
- 3.7 The combined total of electrical circuits constructed in whole or in part within Work Nos. 4A and 4B must not exceed, in the event that the mode of transmission is HVDC, two, and in the event that the mode of transmission is HVAC, eight.
- 3.8 The associated development also includes such further development as may be necessary or expedient in connection with each of the scheduled works within Order limits which are within the scope of the environmental impact assessment recorded in the Environmental Statement including:
 - (i) scour protection around the foundations of the offshore structures;
 - (ii) dredging;
 - (iii) cable protection measures such as rock placement and the placement of concrete mattresses and frond mattresses;
 - (iv) the disposal of seabed sediments produced during construction drilling and seabed preparation for the installation of the foundations of the offshore structures, and/or during seabed preparation for cable laying; and
 - (v) such other works and apparatus, plant and machinery of whatever nature as may be necessary or expedient for the purposes of or in connection with the construction of the authorised project.

- 3.9 The authorised project is subject to the requirements set out in Part 3 of Schedule A to the DCO.
- 3.10 In addition, the DCO makes provision for ancillary works in Part 2 of Schedule A comprising temporary anchorage of vessels and buoys, beacons, fenders and other navigational warning or ship impact protection works.

4. Safety Zone Application

- 4.1 Regulation 3 of the 2007 Regulations and paragraph 3 of Schedule 16 to the 2004 Act require that the following information should be included within a written application for safety zones in respect of an offshore generating station:
- 4.1.1 a map showing:
- (i) the place where the relevant renewable energy installation is to be, or is being, constructed, extended, operated or decommissioned; and
 - (ii) the waters in relation to which any declaration applied for will establish a safety zone;
- 4.1.2 a description of the installation and its proposed or existing location and dimensions (including an explanation of how much of it is (or is expected to be) visible above the water line and how much below it), supported by drawings;
- 4.1.3 a description of how the installation operates (or is to operate);
- 4.1.4 a description of the location (or proposed location) of:
- (i) any electric line used (or proposed to be used) for the conveyance of electricity to or from the installation;
 - (ii) any connection to such an electric line;
 - (iii) a description of the location (or proposed location) of any offshore sub-station housing connection equipment;
 - (iv) where the safety zone is sought in respect of more than one relevant renewable energy installation, the proposed or existing distances between such installations; and
 - (v) details of any navigational marking that has been specified for use with an installation of the description in question by a general lighthouse authority;
- 4.1.5 whether the safety zone relates to the construction, extension, operation or decommissioning of the relevant renewable energy installation;
- 4.1.6 whether the applicant seeks the declaration of a standard safety zone, or if not, what dimensions are sought for the zone;
- 4.1.7 a description of those works or operations in respect of which the safety zone is being applied for and their estimated date and duration;
- 4.1.8 whether the applicant proposes that the area of the safety zone will vary and any factors or determinations by reference to which the applicant proposes that such variation may take place;

- 4.1.9 whether the safety zone relates to major maintenance works in respect of a relevant renewable energy installation which has become operational;
 - 4.1.10 a statement setting out what steps, if any, the applicant proposes to take to monitor vessels and activities within the safety zone;
 - 4.1.11 except where the Secretary of State has notified the applicant that it is not required, an up to date shipping traffic survey for the waters comprising the safety zone; and
 - 4.1.12 an assessment of the extent to which navigation might be possible or should be restricted, and whether restrictions would cause navigational problems, within or near waters where the relevant renewable energy installation is to be, or is being, constructed, extended, operated or decommissioned, as the case may be.
- 4.2 The Applicant's safety zone application will contain the information required by Regulation 3 of the 2007 Regulations and paragraph 3 of Schedule 16 to the 2004 Act. The application is intended to be for standard safety zones of:
- 4.2.1 a 500 m radius around each wind turbine, offshore accommodation platform, offshore HVAC collector substation, offshore HVDC converter substation, offshore HVAC reactive compensation substation and associated foundation structures whilst work is being performed as indicated by the presence of construction vessels;
 - 4.2.2 a 500 m radius around all major maintenance works being undertaken around the wind turbines, offshore accommodation platforms, offshore HVAC collector substation, offshore HVDC converter substations, offshore HVAC reactive compensation substation and associated foundation structures;
- in addition, it is anticipated that the application will request safety zones of:
- 4.2.3 a 500 m radius around each offshore accommodation platform, offshore HVAC collector substations, offshore HVDC converter substation and offshore HVAC reactive compensation substation during operation; and
 - 4.2.4 a 50 m radius around each wind turbine, offshore accommodation platform, offshore HVAC collector substation, offshore HVDC converter substation, offshore HVAC reactive compensation substation and associated foundation structures installed, complete or incomplete but waiting to be commissioned as part of Project Two.
- 4.3 "Major maintenance works" is defined by Regulation 2 of the 2007 Regulations as works relating to any renewable energy installation which has become operational, requiring the attachment to, or anchoring next to, such

an installation of a self-elevating platform, jack-up barge, crane barge or other maintenance vessel.

- 4.4 Where a safety zone relates to a NSIP, the appropriate decision maker for safety zones is the Secretary of State, who has delegated that function to DECC. The safety zone application will therefore be made to DECC, which may, if it is considered appropriate to do so, issue a notice declaring that such areas as are specified or described in the notice are to be safety zones.
- 4.5 Pursuant to section 95(2) of the 2004 Act, the purposes for which DECC may consider it appropriate to issue such a notice are for the purposes of securing the safety of:
- (i) the renewable energy installation or its construction, extension or decommissioning;
 - (ii) other installations in the vicinity of the installation or the place where it is to be constructed or extended;
 - (iii) individuals in or on the installation or other installations in that vicinity; or
 - (iv) vessels in that vicinity or individuals on such vessels.
- 4.6 The safety zone application will be made to DECC once the final number and precise location of the wind turbines, offshore accommodation platforms, offshore HVAC collector substations, offshore HVDC converter substations and offshore HVAC reactive compensation substations has been determined and before construction works commence. This is likely to be from 2017.

SCHEDULE 1 – GLOSSARY OF TERMS

Abbreviation	Explanation
2004 Act	Energy Act 2004
2007 Regulations	The Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007
APFP Regulations	Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009
DCO	A legal order granting development consent for one or more nationally significant infrastructure projects.
DECC	Department of Energy and Climate Change
HVAC	High voltage alternating current
HVDC	High voltage direct current
MW	Megawatt
NSIP	Large scale developments including power generating stations which require development consent under the Planning Act 2008. An offshore wind farm project with a capacity of more than 100 megawatts (MW) constitutes an NSIP.