

# Norfolk Boreas Offshore Wind Farm Safety Zone Statement

## DCO Document 7.2

Applicant: Norfolk Boreas Limited  
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Author: Womble Bond Dickinson

*Photo: Ormonde Offshore Wind Farm*

Norfolk Boreas Limited

Norfolk Boreas Offshore Wind Farm

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## 1. Summary

- 1.1 Norfolk Boreas Limited (the **Applicant**) is planning to develop the Norfolk Boreas Offshore Wind Farm (the **Project**) with up to 180 turbines and an export capacity of up to 1,800 MW. The Project would be located approximately 73 km from the coast of Norfolk at its closest point to land, covering an area of approximately 725 km<sup>2</sup> in the southern North Sea.
- 1.2 As the export capacity will exceed 100 MW, the Project is deemed to be a Nationally Significant Infrastructure Project (**NSIP**), and therefore the Applicant is submitting an application to the Secretary of State under Section 37 of the Planning Act 2008 for a Development Consent Order (**DCO**) for the construction and operation of the Project.
- 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 applications will be made for safety zones.
- 1.4 This Statement outlines the legislative requirements relating to an application for safety zones for Offshore Renewable Energy Installations (**OREI**) under Section 95 of the Energy Act 2004, the scope of the works for which the draft DCO is being sought and the approach that will be taken by the Applicant to an application for safety zones.
- 1.5 The safety zone application (the **Application**) would provide all of the information required by Regulation 3 of the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007 (**2007 Regulations**). In accordance with Section 95 of the Energy Act 2004, the Application will be made to the Department for Business, Energy and Industrial Strategy (**DBEIS**) which is the decision maker on behalf of the Secretary of State for Business, Energy and Industrial Strategy in the case of safety zones relating to NSIPs.
- 1.6 The Application will be made once the final number and precise location of the OREI has been determined. It is currently anticipated that the earliest date the Application would be submitted would be in 2024, with offshore construction expected to begin in 2025.
- 1.7 The Application will be for "standard" rolling safety zones of 500 metres around current construction activity at an OREI location. 50 metre pre-commissioning safety zones will be applied around each OREI location for the period of construction and for major maintenance<sup>1</sup> activities during the period of operation, and in order to ensure the safety of the windfarm infrastructure, individuals working thereon, construction vessels and other vessels navigating in the area whilst works take place.
- 1.8 If a safety case is demonstrated the Application may also apply for 50 metre safety zones around each of the OREI within the Project area during the operational phase. Part of this safety case will also detail how the operational safety zones will be monitored.

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<sup>1</sup> Defined by Part 1, 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". For the Project this could include Service Operations Vessels.

## 2. Introduction

### Background

- 2.1 This Safety Zone Statement is submitted by Norfolk Boreas Limited (the **Applicant**) pursuant to Regulation 6(1)(b)(ii) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the **APFP Regulations**).
- 2.2 This Statement forms part of the application to the Secretary of State for the Project for a Development Consent Order (**DCO**) to construct and operate an offshore generating station with up to 180 turbines and a combined export capacity of up to 1,800 MW (the **Project**). As the total export capacity of the Project will exceed 100 MW the Project is a Nationally Significant Infrastructure Project (**NSIP**) as defined under sections 14(1)(a) and 15(3) of the Planning Act 2008.
- 2.3 The offshore Project area is located in the northern half of the former Zone 5 (East Anglia Zone) in the North Sea. The Project is the second to be proposed by Vattenfall Wind Power Limited (the Applicant's parent company); Norfolk Vanguard offshore wind farm (**Norfolk Vanguard**) comprises the first stage of development of this area.
- 2.4 The Project would be located approximately 73 km from the coast of Norfolk, occupying an offshore Project area of approximately 725 km<sup>2</sup> in the southern North Sea.
- 2.5 The Applicant is currently considering constructing the Project in either one or two phases.
- 2.6 In addition, as it is not yet known whether Norfolk Vanguard will obtain development consent or proceed to implementation and construction, two scenarios are included in the development consent application as follows:
- 2.6.1 Scenario 1: Norfolk Vanguard and the Project are both delivered;
- 2.6.2 Scenario 2: only the Project is delivered; Norfolk Vanguard does not proceed to construction and the Project proceeds alone.
- 2.7 Further information on the location and design of the Project is set out in the accompanying Environmental Statement (Volume 1, Chapter 5 Project Description) (Document 6.1).

### Legislative Context

- 2.8 The process for applying to the Secretary of State (for Business, Energy and Industrial Strategy) for a safety zone to be established around an Offshore Renewable Energy Installation (**OREI**) is set out in Section 95 and Schedule 16 of the Energy Act 2004. The provisions apply to territorial waters in or adjacent to England, Scotland and Wales and to waters in the UK Renewable Energy Zone.
- 2.9 The Electricity (Offshore Generating Stations) (Safety Zones) (Applications Procedures and Control of Access) Regulations 2007 (the **2007 Regulations**) were introduced in August 2007 clarifying the process for applying for a safety zone and advertising such applications. Guidelines accompanying the 2007 Regulations were also published by the Department for Business, Enterprise and Regulatory Reform (now the Department for Business, Energy and Industrial Strategy (**DBEIS**)) to assist applicants in the process of making an application for safety zones.
- 2.10 The provision for safety zones applies to all OREI, including those which have already been consented and includes those which:
- i) Are used (or will be used or, in the case of decommissioning, have been used) for purposes connected with the production of energy from water or winds;
  - ii) Permanently rest on, or are permanently attached to, the bed of the waters; and

- iii) Are not connected with dry land by a permanent structure providing access at all times for all purposes.
- 2.11 The safety zone provision does not cover export cables, project interconnector, interconnector or array cables, or parts thereof, located outside an approved safety zone.
- 2.12 With regard to this Statement, as noted above, Regulation 6(1)(b)(ii) of the APFP Regulations requires that where an application for a DCO for an offshore generating station is made it must be accompanied by “*a statement as to whether applications will be made for safety zones*”.

#### Objectives

- 2.13 In satisfying the requirements of Regulation 6(1)(b)(ii) of the APFP Regulations, this Safety Zone Statement sets out the Applicant's current intentions relating to the requirements for safety zones at the Project during the construction and operational phases and correspondingly the basis of an application that will be made under the provisions of the Energy Act 2004 and the 2007 Regulations.
- 2.14 The Statement does not currently address in detail any safety zone requirements relating to the decommissioning phase. If, following consultation with DBEIS and other relevant bodies such as the Maritime and Coastguard Agency (**MCA**), a safety zone is deemed to be advisable for the decommissioning of the Project, a further safety zone application would be made at the relevant time.
- 2.15 This Statement addresses the following:
- 2.15.1 Need for safety zones for the Project; and
  - 2.15.2 Scope of the proposed safety zone application (the **Application**).

### **3. The need for safety zones for the Project**

- 3.1 The Applicant's intention is to make an application for safety zones around the wind turbines in the event that consent is granted for the Project. The current, anticipated need for safety zones at the Project site for one or two phases of development is set out in Volume 1, Chapter 15 Shipping and Navigation of the Environmental Statement (Document 6.1.15) accompanying the application for a DCO. The safety zone need is supplemented by the detailed marine Navigational Risk Assessment (**NRA**). This assessment is set out in Volume 3, Appendix 15.1 (document reference 6.3.15.1) of the Environmental Statement.
- 3.2 For the construction phase, 500 metre safety zones have been considered by the NRA as being essential "assumed controls". Specifically, during the construction phase, 500 metre safety zones will be established at locations in which construction activity is currently taking place and evidenced by the presence of a construction vessel. A 50 metre safety zone around each OREI when construction works have been completed but prior to the overall wind farm being commissioned may also be necessary.
- 3.3 For the operational phase, the NRA does not currently foresee any specific need for safety zones to be established around the OREI.
- 3.4 However, as set out in Volume 3, Appendix 15.1 (document reference 6.3.15.1) of the Environmental Statement, the Applicant will consider the need for an application for operational safety zones around each OREI taking account of the need to ensure the safety of other sea users and those working in the site and to avoid any damage to the underwater infrastructure, particularly the subsea cables where they enter the foundation structures. The need for operational safety zones will ultimately be guided, therefore, by the final Project design and by the approach to operation and maintenance of the site. For the purposes of this Safety Zone Statement, it is therefore assumed that a standard 50 metre safety zone could be applied around each of the OREI installed within the Project area during the operational phase.
- 3.5 In addition, an application would be made for safety zones of up to 500 metres to be employed where major maintenance is underway on OREI during the operational phase. Regulation 2 of the 2007 Regulations defines "major maintenance works" 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." For the Project this could include Service Operations Vessels.
- 3.6 With regard to the decommissioning phase of the Project, as noted above, it is anticipated that an application for safety zones would not include any specific provisions for the decommissioning phase. Rather it is expected that the need for safety zones at that stage would be subject to appropriate risk assessment and consultation with the statutory authorities. A separate application would be made prior to decommissioning where necessary.
- 3.7 It is noted that the anticipated provisions for safety zones for the Project align with the standard definitions set out in the 2007 Regulations.
- 3.8 In summary, the Applicant anticipates that an application for safety zones would be made to DBEIS incorporating some or all of the following provisions:
- 3.8.1 Construction phase – 500 metre safety zones around active construction works and evidenced by the presences of a construction vessel;
  - 3.8.2 Construction phase – 50 metre safety zones around partially or fully completed structures prior to the overall wind farm commissioning;
  - 3.8.3 Operational phase – 50 metres safety zones around each installed structure;

- 3.8.4 Operational phase – a 500 metres safety zone around the site of major maintenance works; and
  - 3.8.5 Decommissioning – no safety zones currently proposed; a separate application would be made prior to decommissioning where considered necessary.
- 3.9 The final scope and form of the Safety Zone Application will be decided following completion of the detailed design of the Project but prior to the start of construction works; currently the earliest date an application would be submitted would be in 2024, with offshore construction anticipated to begin in 2025. The final Application would be developed through further risk assessment and in consultation with relevant statutory authorities, and in line with the 2007 Regulations and accompanying guidance notes.



#### 4. Scope of the safety zone Application for the Project

##### Scope of the DCO application

4.1 The application for the Project seeks consent for the following offshore works, as set out in Schedule 1 Part 1 of the draft DCO (Document 3.1) and repeated in the following paragraphs.

##### *Work No. 1*

##### *In the event of scenario 1 and scenario 2:*

- (a) an offshore wind turbine generating station with electrical export capacity of up to 1,800 MW at the point of connection to the offshore electrical platform(s) referred to at Work No. 2 comprising up to 180 wind turbine generators each fixed to the seabed by one of the following foundation types: monopile (piled or suction caisson), jacket (piled or suction caisson), gravity base, or tetrabase fitted with rotating blades and situated within the area shown on the works plan and further comprising (b) to (e) below;
- (b) up to one offshore service platform fixed to the seabed within the area shown on the works plan by one of the following foundation types: jacket (piled or suction caisson), or gravity base;
- (c) up to two meteorological masts fixed to the seabed within the area shown on the works plan by one of the following foundation types: monopile (piled or suction caisson), jacket (piled or suction caisson) or gravity base;
- (d) up to two LIDAR measurement buoys fixed to the seabed within the area shown on the works plan by one of the following foundation types: monopile (piled) or floating; and up to two wave measurement buoys fixed to the seabed within the area shown on the works plan by one foundation type (floating); and
- (e) a network of subsea array cables and fibre optic cables within the area shown on the works plan between the wind turbine generators, and between the wind turbine generators and Work No.2 including one or more offshore cable crossings;

##### *In the event of scenario 1:*

- (f) a network of subsea cables and fibre optic cables connecting wind turbine generators within (a) above to an offshore electrical platform within Norfolk Vanguard East including one or more offshore cable crossings.

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

*Work No. 2* – in the event of scenario 1 and scenario 2, up to two offshore electrical platforms fixed to the seabed within the area shown on the works plan by one of the following foundation types: jacket (piled or suction caisson) or gravity base;

*Work No. 3A* – in the event of scenario 1 and scenario 2, a network of subsea cables and fibre optic cables within the area shown on the works plans comprising Work No.2 for the transmission of electricity and electronic communications between the offshore electrical platforms and including one or more offshore cable crossings;

*Work No. 3B* – in the event of scenario 1, up to 3 project interconnector cables to connect Work No. 2 to an offshore electrical platform within Norfolk Vanguard Offshore Wind Farm including one or more offshore crossings;

*Work No. 4A* – in the event of scenario 1 and scenario 2, up to four subsea export cables and fibre optic cables between Work No. 2 and Work No. 4B consisting of subsea cables and fibre optic cables along routes within the Order limits seaward of MLWS including one or more offshore cable crossings;

*Work No. 4B* – in the event of scenario 1 and scenario 2, up to four subsea export cables and fibre optic cables between Work No. 4A and Work No. 4C consisting of subsea cables and fibre optic cables along routes within the Order limits between MLWS and MHWS at Happisburgh South, North Norfolk;

and in connection with Work Nos. 1 to 4B and to the extent that they do not otherwise form part of any such work, further associated development 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 including;

- (a) scour protection around the foundations of the offshore structures;
- (b) cable protection measures such as the placement of rock and/or concrete mattresses, with or without frond devices;
- (c) the removal of material from the seabed required for the construction of Work Nos. 1 to 4B and the disposal of up to 48,692,212 cubic metres in the event of scenario 1, or 45,092,212 cubic metres in the event of scenario 2 of inert material of natural origin within the Order limits produced during construction drilling, seabed preparation for foundation works, cable installation preparation such as sandwave clearance, boulder clearance and pre-trenching and excavation of horizontal directional drilling exit pits;
- (d) removal of static fishing equipment; and
- (e) disposal of drill arisings in connection with any foundation drilling up to a total of 413,913 cubic metres.

4.2 As noted at paragraph 2.5 above, a one or two phased approach to offshore construction of the Project may be adopted.

#### Scope of the safety zone Application

4.3 A formal safety zone Application is normally expected to be made following award of the main development consent (in this case the granting of the DCO by the Secretary of State). The guidance on safety zone applications notes that, following award of consent, a developer will normally have taken decisions on a range of important technical issues such as foundation type and the locations of the installations which will make up an array, thereby ensuring that decisions about safety zones, and particularly how a safety zone notice should be drawn up, can be taken on the basis of firm and up to date information. The application is to be made to DBEIS with notice of application served on the Navigation Safety Branch of the MCA, Trinity House and other relevant stakeholders.

4.4 In the case of the Project, the application for safety zones would be made following completion of the detailed design work but prior to the start of the construction works. The earliest date an application would be submitted would be in 2023, subject to progression of the design and procurement process.

4.5 In relation to the information requirements of an application, Regulation 3 sets out what should be included within a written application for safety zones in respect of an offshore generating station. The requirements are set out as follows:

4.5.1 A map showing:

- the place where the relevant renewable energy installation is to be, or is being, constructed, extended, operated or decommissioned; and
- the waters in relation to which any declaration applied for will establish a safety zone;

4.5.2 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;

4.5.3 A description of how the installation operates (or is to operate);

4.5.4 A description of the location (or proposed location) of:

- any electric line used (or proposed to be used) for the conveyance of electricity to or from the installation;

- any connection to such an electric line;
- 4.5.5 A description of the location (or proposed location) of any offshore substation housing connection equipment;
- 4.5.6 Where the zone is sought in respect of more than one relevant OREI, the proposed or existing distance between such installations;
- 4.5.7 Details of any navigational marking that has been specified for use with an installation of the description in question by a General Lighthouse Authority;
- 4.5.8 Whether the zone relates to the construction, extension, operation or decommissioning of the relevant renewable energy installation;
- 4.5.9 Whether the applicant seeks the declaration of a standard safety zone, or if not, what dimensions are sought for the zone;
- 4.5.10 A description of those works or operations in respect of which the zone is being applied for and their estimated date and duration;
- 4.5.11 Whether the applicant proposes that the area of the zone will vary and any factors or determinations by reference to which the applicant proposes that such variation may take place;
- 4.5.12 Whether the zone relates to major maintenance works in respect of a relevant renewable energy installation which has become operational;
- 4.5.13 A statement setting out what steps, if any, the applicant proposes to take to monitor vessels and activities within the zone;
- 4.5.14 Except where the Secretary of State has notified the applicant that it is not required, an up to date Automatic Identification System (AIS) shipping traffic survey for the waters comprising the zone; and
- 4.5.15 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 OREI is to be, or is being, constructed, extended, operated or decommissioned, as the case may be.
- 4.6 The safety zone Application for the Project will contain the information required by Part 2, Regulation 3 of the 2007 Regulations as set out above. An Application will be made for the standard safety zones which may comprise the following:
- 4.6.1 A 500 metre radius around individual OREI and their foundations whilst work is being performed as indicated by the presence of construction vessels;
- 4.6.2 A 500 metre radius around all major maintenance works being undertaken around the wind turbines and their foundations, and
- 4.6.3 A 50 metre radius around individual OREI and associated foundation structures whether they be installed and operational, or complete or incomplete but awaiting overall wind farm commissioning.
- 4.7 The 2007 Regulations also require an application to be publicised by notice in a prescribed manner and copies of the notice must be sent to the harbour masters of ports whose users are, in the opinion of the applicant, likely to be affected by the application; to the MCA HQ plus the Coastguard Operations Centre (**CGOC**) responsible for operations in the waters in which the safety zone is proposed or located; and to the local office of the Marine Management Organisation (**MMO**) which is responsible for operations in the waters in which the safety zone is proposed or located.

- 4.8 In addition, the Department for Business, Enterprise and Regulatory Reform guidelines on the 2007 Regulations advise that applicants undertake early consultation with “interested parties” on their intention to make an application for safety zones. DBEIS will consult with a range of organisations upon receipt of an application.
- 4.9 The Applicant will take note of the prescribed publicity and notification requirements in preparing the Application. The Applicant has already undertaken early consultation in preparing the current application for a DCO, consulting with shipping operators, fishermen and recreational interest groups as well as statutory agencies such as the MCA. Once the final design details of the Project are available, the Applicant will conduct further consultation with regard to safety zones, prior to making an application to DBEIS.