

Norfolk Boreas Offshore Wind Farm

Explanatory

Memorandum

(Version 2) (Clean)

DCO Document 3.2

Applicant: Norfolk Boreas Limited
Document Reference: 3.2
Pursuant to APFP Regulation: 5(2)(c)
Deadline: 0

Date: November 2019
Revision: Version 2
Author: Womble Bond Dickinson

Photo: Ormonde Offshore Wind Farm

Norfolk Boreas Limited

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Deadline 0

Date	Issue No.	Remarks / Reason for Issue	Author	Checked	Approved
14/05/19	01D	First draft for Norfolk Boreas Ltd review	JT/VR	JL/DT/AH	
30/05/19	02D	Final draft for submission	JT	VR	JL
01/11/19	01	Final draft for review and sign-off	JT	JT	JL

Document Reference	3.2
APFP Regulation	5(2)(c)
Author	Womble Bond Dickinson UK LLP
Date	November 2019

THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (APPLICATIONS: PRESCRIBED FORMS AND PROCEDURE) REGULATIONS 2009 REGULATION 5(2)(c)

THE PROPOSED NORFOLK BOREAS OFFSHORE WIND FARM ORDER

EXPLANATORY MEMORANDUM

1 Introduction

- 1.1 This memorandum accompanies an application for development consent (the **Application**) by Norfolk Boreas Limited (the **Applicant**) to construct and operate the Norfolk Boreas Offshore Wind Farm (the **Project**). The memorandum explains the purpose and effect of each article of, and Schedule to, the draft Norfolk Boreas Offshore Wind Farm Order (the **Order**), as required by Regulation 5(2)(c) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.
- 1.2 Notwithstanding its repeal, some of the wording used in the draft Order has been derived from the Infrastructure Planning (Model Provisions) (England and Wales) Order 2009. In some cases, the draft Order draws from the drafting used in Orders for similar developments made under the Planning Act 2008 (the **2008 Act**), the Transport and Works Act 1992 and other Acts authorising similar significant development. A table has been included at Schedule 1 to summarise the basis of the drafting used in the case of each Article of the draft DCO.
- 1.3 A detailed explanation of the authorised development is set out in the Project Description chapter (chapter 5) of the Environmental Statement (Document 6.1) which accompanies the Application.
- 1.4 As the Order seeks to apply and modify statutory provisions, including concerning the compulsory acquisition of land and the treatment of certain requirements as planning conditions, in accordance with sections 117(4) and 120(5) of the Planning Act 2008 (**2008 Act**), it has been drafted as a statutory instrument.

2 The purpose of the Order

- 2.1 In overview, the purpose of the Order is to grant the Applicant development consent for a Nationally Significant Infrastructure Project (**NSIP**), namely:
- 2.1.1 An offshore generating station with an electrical export capacity of up to 1,800 MW at the point of connection to the offshore electrical platform(s) to be located more than 73 km from the coast of Norfolk, occupying an offshore array site of approximately 725 km² in the southern North Sea;
 - 2.1.2 Up to one offshore service platform;
 - 2.1.3 Up to two meteorological masts;
 - 2.1.4 Up to two LIDAR buoys and up to two wave buoys; and

- 2.1.5 A network of subsea cables.
- 2.2 The Order also includes associated development linked to the NSIP, namely:
 - 2.2.1 Up to two offshore electrical platforms;
 - 2.2.2 In the event of Scenario 1 (see paragraph 4 below), the option of a project interconnector link to the offshore electrical platform(s) within the Norfolk Vanguard Offshore Wind Farm sites;
 - 2.2.3 A subsea electrical connection and associated fibre optic cables between the offshore electrical platforms, and from those electrical platforms to a landfall at Happisburgh South, North Norfolk;
 - 2.2.4 Landfall transmission works consisting of up to two transition jointing pits and up to four cables to be laid in ducts underground and associated fibre optic cables laid within cable ducts underground;
 - 2.2.5 An onshore underground electrical connection comprising:
 - 2.2.5.1 in the event of Scenario 1 (see paragraph 4 below), up to four cables and associated fibre optic cables to be pulled through existing ducts laid underground;
 - 2.2.5.2 in the event of Scenario 2 (see paragraph 4 below), up to four cables and associated fibre optic cables installed in ducts.
 - 2.2.6 A new onshore project substation housing the principal electrical equipment, located near to the Necton National Grid substation;
 - 2.2.7 An underground electrical connection and associated fibre optic cables between the new onshore project substation and the Necton National Grid substation;
 - 2.2.8 An extension to the existing National Grid substation comprising:
 - 2.2.8.1 in the event of Scenario 1, an extension in an easterly direction;
 - 2.2.8.2 in the event of Scenario 2, an extension in a westerly direction.;
 - 2.2.9 In the event of Scenario 2, overhead line replacement works including the removal of one existing pylon and construction of two new permanent pylons, the repositioning of the overhead electric line from the existing pylons to the new permanent pylons and the installation of conductors, insulators and fittings on to the pylons; and
 - 2.2.10 Access to the new onshore project substation comprising:
 - 2.2.10.1 in the event of Scenario 1, an extension from the existing access connecting the A47 to the Norfolk Vanguard onshore project substation;
 - 2.2.10.2 in the event of Scenario 2, new permanent accesses connecting the A47 to the new onshore project substation and the National Grid substation, including highway widening works on the A47 to create a new junction.
- 2.3 In addition, the Order contains powers to acquire land, or rights over land, compulsorily for the construction and operation of the Project as well as temporary powers in respect of affected land.
- 2.4 The Order also contains five deemed marine licences under section 66(1) of the Marine and Coastal Access Act 2009 (the **2009 Act**).
- 3 Nationally Significant Infrastructure Project – offshore generating station**
- 3.1 Pursuant to sections 14(1)(a) and 15(3) of the 2008 Act, an offshore generating station in England or Wales having a capacity of more than 100 MW is an NSIP.

3.2 Section 31 of the 2008 Act provides that development consent is required under that Act to the extent that a development is or forms part of an NSIP. As the proposed generating station is proposed to have an electrical export capacity of up to 1,800 MW it qualifies as an NSIP in its own right.

3.3 The detailed elements which comprise the generating station, and its associated development, are considered separately below.

4 Scenarios, relationship with Norfolk Vanguard, and phasing

4.1 Norfolk Boreas is the second offshore wind farm proposed by Vattenfall in this part of the southern North Sea. The Norfolk Vanguard Offshore Wind Farm project, also classified as a NSIP, submitted an application for development consent to the Planning Inspectorate in June 2018 and a decision from the Secretary of State is expected in December 2019 (**Norfolk Vanguard**). Norfolk Vanguard has the same proposed export capacity of up to 1,800MW. In order to optimise synergies between the projects, both projects follow the same general export cable route (offshore and onshore) and both projects will connect to the transmission network at the Necton National Grid substation.

4.2 The Norfolk Vanguard application sought development consent for some enabling works for Norfolk Boreas. This includes, for example, the installation of additional onshore ducts for Norfolk Boreas which, if installed by Norfolk Vanguard, would enable Norfolk Boreas to consent and implement a cable pull through operation, rather than an independent duct installation with a subsequent cable pull through operation.

4.3 However, as it is not yet known whether Norfolk Vanguard will obtain development consent or whether Norfolk Vanguard will proceed to construction, the Norfolk Boreas application also seeks consent to implement Norfolk Boreas as an independent project. Therefore, the Applicant has included two scenarios in the development consent application as follows:

4.3.1 Scenario 1: Norfolk Vanguard and Norfolk Boreas are both delivered (with associated synergies), and Norfolk Vanguard installs ducts and carries out other shared enabling works to benefit Norfolk Boreas (**Scenario 1**).

4.3.2 Scenario 2: only Norfolk Boreas is delivered; Norfolk Vanguard does not proceed to construction and Norfolk Boreas proceeds alone. Norfolk Boreas undertakes all works required as an independent project (**Scenario 2**).

4.4 The scenarios are described in more detail in Table 1.1 below. Where there is a difference between the works or parameters under each scenario this is described beneath each respective Scenario 1 and Scenario 2 column; where the works or parameters are the same under each scenario, this is shown within a merged row:

Table 1.1. Comparison of works under Scenario 1 and Scenario 2

	Scenario 1 Works	Scenario 2 Works
	Norfolk Vanguard proceeds to construction and carries out shared enabling works for Norfolk Boreas including the installation of ducts	Norfolk Vanguard does not proceed to construction and Norfolk Boreas commences as an independent project
Offshore		
Project Interconnector	Up to 3 project interconnector cables to connect Norfolk Vanguard and Norfolk Boreas	No project interconnector cables to Norfolk Vanguard.
Landfall		
Landfall	Install landfall compounds, transition pits and ducts for export cables at the landfall using long horizontal directional drilling.	
Number of cable ducts at landfall	2	

Number of transition pits at landfall	2	
Onshore Cable Route		
Onshore cable route – pre-construction works	Majority of pre-construction works completed by Norfolk Vanguard, however limited works may be undertaken by Norfolk Boreas such as ecological preparations.	Pre-construction works would be required, including: Road modifications; Hedge and tree netting / removal; Ecological preparations; Archaeological preparations; and Pre-construction drainage.
Onshore cable route – duct installation	Not required (installed by Norfolk Vanguard).	Install ducts along onshore cable route, from landfall transition pit to onshore substation, involving fencing, topsoil stripping and storage, trenches for ducts, a running track to deliver equipment to the installation site from mobilisation areas and storage areas for topsoil and subsoil.
Mobilisation areas	No mobilisation areas required for the onshore cable route.	Mobilisation areas to store equipment and provide welfare facilities during duct installation.
Cable crossings	Not required (installed by Norfolk Vanguard).	Crossing some features could require an alternative or amended duct installation approach i.e. hedgerows, underground services, roads or tracks, watercourses (temporary dams, culverting) and trenchless crossings.
Trenchless crossings and associated compounds	None required	Trenchless drill activities would be required at crossings with associated temporary crossing compounds either side.
Onshore cable route – cable pulling	Deliver, pull and joint cables along onshore cable route in up to two phases. Use same access points as were used for Norfolk Vanguard cable installation phases. Up to 20% of running track required to be reinstated to facilitate cable pulling.	Deliver, pull and joint cables along onshore cable route in up to two phases. Use same access points as for the duct installation. Up to 20% of running track required to be retained or reinstated following duct installation to facilitate cable pulling.
Cable pulling method	Pulled through installed ducts in a staged approach. Does not require trenches to be re-opened, however access to and from jointing pits would be required.	
Cable installation HVDC	Installed in up to 2 phases	
Link boxes	Approximately every 5km, on each circuit	
Jointing pits	Approximately every 800m, on each circuit	
Cable Logistics Area	During cable installation a cable logistics area (area of existing hardstanding at Oulton) will allow storage of cable drums, associated materials and may accommodate site offices, welfare facilities and other associated infrastructure.	
Site side access	To facilitate safe ingress and egress from public highways to the cable route for cable pulling and maintenance purposes.	To facilitate safe ingress and egress from public highways to the cable route or mobilisation areas through temporary slip roads. Expected at each mobilisation area and intersections between public highway and cable route. Certain locations also used for cable pulling and maintenance

		purposes.
Operation and maintenance	Annual access to link boxes (would not require excavation as accessible from ground level) and emergency repairs along the easement if required.	
Decommissioning	No decision – would be in line with relevant policy at the time. Likely cables removed from ducts and recycled, and transition pits and ducts sealed and left in situ.	
Onshore Project Substation		
Onshore project substation	1 required, with temporary construction compound. Access would be shared with Norfolk Vanguard and extended by approximately 300m.	1 required, with temporary construction compound. New junction and access from the A47 would be constructed.
Onshore project substation parameters	Length 300m Width 250m Tallest equipment 19 m (reactor hall) and tallest structure (lightening protection) up to 25m	
Onshore project substation control buildings and converter hall	Control buildings and converter hall will typically be constructed from a steel frame with cladding panels.	
Onshore project substation pre-construction	Pre-construction works would be required, including: Hedge and tree netting / removal; Ecological preparations; Archaeological preparations; and Pre-construction drainage.	Pre-construction works would be required, including: A47 junction improvement and installation of access road; Hedge and tree netting / removal; Ecological preparations; Archaeological preparations; and Pre-construction drainage.
Onshore project substation construction	Extend access road already installed by Norfolk Vanguard, construct temporary construction compound and a mobilisation area at Spicers Corner, construct onshore substation and install electrical equipment.	Construct access road, construct temporary construction compound and a mobilisation area at Spicers Corner and construct onshore substation and install electrical equipment.
Onshore substation Operation and maintenance	Periodic maintenance visits (1 per week).	
Onshore substation Decommissioning	Would comply with relevant policy at the time.	
Onshore 400kV cables from onshore project substation to Necton National Grid substation	Excavation of trenches and laying of cables between the onshore project substation and Necton National Grid substation. Allowance for cables to be directly buried or ducted underground.	
National Grid Substation Extension and Modifications		
National Grid substation extension	Extend Necton National Grid substation in an easterly direction to provide 5 new Air Insulated Switchgear (AIS) bays (135m x 150m)	Extend Necton National Grid substation in a westerly direction to provide 7 new AIS bays (200m by 150m)
Busbar extension	135m busbar extension required.	200m busbar extension required.
400kV interconnection works	Install 400kV switchgear in user bays at Necton National Grid substation.	

National Grid substation extension pre-construction	Pre-construction works would be required, including: Hedge and tree netting / removal; Ecological preparations; Archaeological preparations; and Pre-construction drainage.	
National Grid substation extension construction	Construct temporary construction compound, install temporary access road from existing access, construct extension and install electrical equipment.	
Overhead line modification works	Not required (completed by Norfolk Vanguard)	Removal of one existing pylon and construction of two new permanent pylons, so the net gain in pylon towers is one.
Overhead line modifications Operation & Maintenance	Periodic maintenance visits (1 per week).	
Overhead line modifications decommissioning	Would comply with relevant policy at the time.	

- 4.5 For the purposes of the Order, Scenario 2 (Norfolk Boreas delivered as an independent project) will need to utilise a greater extent of the Order limits than that needed for Scenario 1 (Norfolk Boreas delivered as a pull through operation). This is because Scenario 2 involves the consent of additional infrastructure that would not be required if enabling works are carried out for Norfolk Boreas by Norfolk Vanguard. For example, the modification to the overhead line at the National Grid substation near Necton is required for Scenario 2 but is not required for Scenario 1 because under Scenario 1 these works will be undertaken by Norfolk Vanguard.
- 4.6 Some of the infrastructure within the Order limits will be located in different locations and will therefore optimise different elements of the Order limits depending on which Scenario is taken forward. For example, under Scenario 1 an extension to the National Grid substation is required to the east whereas an extension is required to the west under Scenario 2. This is because Norfolk Vanguard will extend the National Grid substation to the west in Scenario 1 so Norfolk Boreas will need to extend it to the east. However, if only one extension is undertaken to the National Grid substation (as in Scenario 2), this will be carried out in the westerly location.
- 4.7 For the purposes of the Works Plans and the Land Plans, the fullest extent of the Order limits has been shown which combines the Order limits for Scenario 1 and Scenario 2. The widest extent of the Order limits is also shown in the figures for the ES and the other plans to be submitted with the application. This is necessary in order to show the fullest extent of the possible land in question. However, as only one scenario will be implemented an additional sub set of Works Plans and Land Plans are shown for both Scenario 1 and Scenario 2 of the onshore project substation and National Grid extension works. These can be seen at Sheet 40a and 40b, Sheet 41a and 41b, and Sheet 42a and 42b. In this way, there is clarity as to the extent of the Order limits in this location, together with the works descriptions and the nature of interests sought in whichever scenario is commenced. A sub set of plans for the cable route is not considered necessary, because the cable corridor follows the same Order limits and any differences between Scenario 1 and Scenario 2 are identified in the key. The differences between the works for each Scenario is also clarified in the Works description in the draft Order, which identifies and describes any change to the nature of the Works for Scenario 1 and Scenario 2. Where the nature of the works will not change as a result of the Scenarios, no reference to the Scenarios is made. Similar drafting is employed in the compulsory acquisition schedules to the Order, which includes separate tables setting out the

plots for which new permanent rights and temporary powers are required in each scenario (for instance, under Part 1 for Scenario 1 and under Part 2 for Scenario 2).

- 4.8 To ensure that only one scenario is implemented, and that the relevant local authority (and Marine Management Organisation) have notice of which scenario is implemented, a requirement to this effect is included in the draft Order and an equivalent condition is included in the relevant Deemed Marine Licences. This states that the undertaker may only implement one of the scenarios, and restricts implementation to Scenario 1 in the event that the Norfolk Vanguard DCO is commenced. It also requires the undertaker to notify which scenario is to be implemented prior to commencement of any works authorised under the Order. In practice a decision on which scenario is to be implemented will be made significantly in advance of commencement of the authorised development. However, the Applicant will not be in a position to make a decision on the appropriate scenario until post-consent.
- 4.9 If Norfolk Vanguard is commenced, only Scenario 1 can be implemented and, in any event, the scenario implemented will be apparent from the discharge of other Requirements under the Order. For example, the contents of the Code of Construction Practice will differ depending on whether a pull through scenario or an independent project is progressed. This is explained further within the outline Code of Construction Practice (document reference: 8.1). The outline plans have been drafted to clarify the matters that will be secured under both scenarios as well as any additional matters which would be secured under either Scenario 1 or Scenario 2. The final plans produced in accordance with the requirements of the DCO will depend on the scenario taken forward and, for example, will not need to refer to Scenario 2 if Scenario 1 is taken forward.
- 4.10 The inter-relationship between the Norfolk Vanguard and Norfolk Boreas infrastructure is described in more detail in the Inter-relationship Report (document reference: 3.4). This document sets out some of the efficiencies and synergies in the event that both projects are delivered by explaining the relationship with respect to the project infrastructure and Order limits. Whilst Scenario 2 envisages that Norfolk Boreas only may be delivered, the Applicant considered it important to explain the interaction that Norfolk Boreas would have with Norfolk Vanguard where both projects proceed to construction, particularly with respect to the onshore project substation area.
- 4.11 Whilst the above sections, including Table 1.1, describe some of the differences between the Scenarios it should be noted that the powers required under the DCO for each scenario are very similar and, in almost all cases, the same powers will be required and the same Requirements will apply, irrespective of which Scenario is taken forward. It is therefore considered appropriate to include both Scenarios within the same draft Order. The Applicant explains this in more detail within Section 8 below.
- 4.12 There is only one article, Article 4 (see sections 6.8 and 8 below), which is not required for both Scenarios and this is made clear in the drafting. Although the powers required for the Scenarios are generally the same, the extent of the works to be carried out under those powers may differ according to the Scenario. For this reason and to ensure clarity, separate Parts have been provided in the Schedules, where appropriate, relating to Scenario 1 and Scenario 2.

5 The need for flexibility in the Order

Phasing

- 5.1 Flexibility is sought in relation to phasing for the construction of the Project. The Applicant is considering constructing the Project in either one or two phases, with a maximum electrical export capacity of 1,800 MW.
- 5.2 This could include the option for shared infrastructure between the Project and Norfolk Vanguard, such as through the sharing of an offshore electrical platform and an onshore converter station which would be located within the onshore project substation. The combined export capacity between the Project and Norfolk Vanguard would be up to

3,600MW and the parameters assessed allow for a number of different transmission solutions to be used. For example, this could include:

- 5.2.1 Solution a): a four x 900MW solution, where each project has up to two offshore platforms (four platforms in total) and up to two buildings per project comprised in the two onshore substations. As this solution comprises two offshore electrical platforms (of 900MW each) to serve each project, an interconnector is not required in this case even if Scenario 1 is taken forward; or
 - 5.2.2 Solution b): a three x 1,200MW solution. This would allow one offshore electrical platform for Norfolk Boreas, one offshore electrical platform for Norfolk Vanguard and a third offshore electrical platform which would be shared between Norfolk Vanguard and Norfolk Boreas. Under this solution a project interconnector would also be required. The requirement for three buildings, one being shared, would also be replicated at the onshore substation where three buildings would be encapsulated within the two onshore project substations.
 - 5.2.3 Solution c): a two x 1,800MW solution, which allows a single offshore electrical platform for each project and a single building for each onshore substation. Under this solution, consent for a project interconnector would also be sought so that this could be installed from the Norfolk Boreas electrical platform to the Norfolk Vanguard electrical platform.
- 5.3 A variation of Solution (c) is also being considered. This variant would be similar to Solution (c) in electrical terms albeit the physical infrastructure would be more akin to Solution (a). This variation is within the terms of the EIA and assessed design envelope. Please see the EIA and DCO Reconciliation Document (document reference: 6.7) for a more detailed breakdown, together with visual representations, of the possible options associated with the overall maximum export capacity.
- 5.4 A solution which allows for shared transmission infrastructure between the Project and Norfolk Vanguard also, in accordance with the Guidance, offers scope to reduce the offshore impacts of projects within the former Zone. Subject to the maximum parameters (see Schedule 3 below), the number of offshore electrical platforms and onshore converter stations, and (if relevant) whether certain elements of that infrastructure may be shared between the Project and Norfolk Vanguard, will depend on the final design of the Project.
- 5.5 The Environmental Statement has assessed the worst case parameters from the phasing of construction on a case-by-case basis. The Order has therefore been drafted to reflect this approach, particularly with regard to maximum parameters and, for the offshore works, the structure of the deemed marine licences (**DMLs**). Implications of phasing on the drafting of the Order are considered further below.
- Structure of deemed marine licences
- 5.6 As drafted, the Marine and Coastal Access Act 2009 suggests that while a marine licence may be transferred in whole, it may not be transferred in part (or at least the drafting did not anticipate this). In light of this, the Applicant's proposed approach is to include separate generation and transmission DMLs. This will allow for the separate transfer of the transmission assets within the transmission DMLs to an Offshore Transmission Owner (**OFTO**) under The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2010 (SI 2010/1903). The generation assets within the generation DMLs can then be retained by the undertaker for generation.
- 5.7 This approach has been adopted on other offshore wind farms under the 2008 Act; most recently in the Norfolk Vanguard application and in the as made East Anglia THREE Offshore Wind Farm Order 2017 (**East Anglia THREE**). As with Norfolk Vanguard and East Anglia THREE, the number of generation and transmission DMLs are relevant to the number of phases in which the Project may be constructed. For example, if the Project is constructed in two phases, two separate transmission DMLs can be used to enable the transmission assets

for each phase to be transferred separately to an OFTO at different points in time and, if relevant, to different OFTOs.

- 5.8 It is not yet known how the phases will be constructed in terms of export capacity. The drafting approach used allows for flexibility whilst also restricting what can be constructed to what has been assessed in the Environmental Statement. For example, the drafting permits the Applicant to install:
- 5.8.1 A single phase with an export capacity of 1,800 MW. In this case only one generation DML and one transmission DML would be used under the Order, in addition to a DML for the Interconnector (as relevant for Scenario 1, see paragraph 5.10); or
 - 5.8.2 Two phases with a maximum export capacity of 1,800MW which, for example, may be comprised as two phases with an export capacity of 900MW each or two phases with an export capacity of 1,200 MW and 600MW respectively. In this case both sets of generation and transmission DMLs may be used under the Order in addition to the Project Interconnector DML (as relevant for Scenario 1, see paragraph 5.10). The DMLs are not prescriptive as to the amount of export capacity which must be brought forward under each phase, provided that the total export capacity does not exceed 1,800MW and the maximum parameters across both sets of DMLs (as assessed in the Environmental Statement) are not exceeded.
- 5.9 The DMLs also include a notification procedure to ensure that the Marine Management Organisation (**MMO**) is informed prior to commencement of construction as to whether a single phase or a two phase approach will be followed.
- 5.10 As outlined in paragraph 5.2 above, in the event of Scenario 1, the Project may need to connect the offshore electrical platforms to the offshore electrical platforms in Norfolk Vanguard. This will be done through project interconnection cables (the **Project Interconnectors**). In this event, the Project Interconnectors will require their own separate DMLs.
- 5.11 The approach has therefore provided for up to five separate DMLs as follows:
- 5.11.1 Licence 1 – generation assets (Phase 1)
 - 5.11.2 Licence 2 – generation assets (Phase 2)
 - 5.11.3 Licence 1 – transmission assets (Phase 1)
 - 5.11.4 Licence 2 – transmission assets (Phase 2).
 - 5.11.5 Licence 1 – Project Interconnector assets (Scenario 1).
- 5.12 Using this approach, it is possible to implement the development in one or two phases and to allow the transfer of the DMLs for each phase and type of asset (i.e. generation or transmission) to separate companies if necessary.
- 5.13 The table provided at Schedule 2 highlights the similarities and differences between the conditions in Part 4 of the generation, transmission, and Project Interconnector DMLs.
- Phasing of onshore construction works
- 5.14 Onshore construction works will be undertaken in one continuous construction period but will be phased to allow for the laying of ducts (in the event of scenario 2) separately to the pull through of cables and the construction of the onshore project substation. A single phase of duct installation works (in the event of scenario 2) is proposed irrespective of the approach to offshore phasing. However, phasing for the pulling of cables through the ducts and construction of the onshore project substation (in the event of scenario 1 and scenario 2) will be determined by the number of offshore phases taken forward. If one offshore phase is taken forward there will be a single phase of works to pull the cables through the ducts and a

single phase of works to construct the onshore project substation. If two offshore phases are undertaken, the cables will be pulled through the ducts in two separate phases and the onshore project substation will be constructed in two separate phases. The approach to phasing of construction works is set out more fully in the Project Description chapter (Chapter 5) of the Environmental Statement (document 6.1).

Offshore flexibility

- 5.15 The Order defines the generating station in paragraph 1 of Schedule 1, Part 1 (*Authorised development*). It is limited by the 1,800 MW electrical export capacity, which is expressed to be a maximum i.e. "up to 1,800 MW", and will be measured at the point of connection to the offshore electrical platform(s).
- 5.16 The constituent elements of the generating station are specified in Work No. 1, together with offshore associated development in Work Nos. 2 to 4A which are expressly limited to the Order limits seaward of Mean Low Water Springs (**MLWS**). Work No. 4B covers the intertidal area and Works Nos. 4C to 12B specify the onshore associated development linked to the NSIP within the Order limits landward of Mean High Water Springs (**MHWS**). Part 2 of Schedule 1 specifies the ancillary works. Work No. 4 has been split into three separate works (Work Nos. 4A, 4B and 4C). This enables the separation of Works within the MMO and North Norfolk District Council's jurisdiction. For instance, Work No. 4A falls solely within the jurisdiction of the MMO and Work No. 4C falls solely within the jurisdiction of North Norfolk District Council. Work No 4B relates to the intertidal area where both the MMO and North Norfolk District Council have jurisdiction.
- 5.17 Within the Order, flexibility has been provided in relation to the generating station and linked associated development, and in the view of the Applicant this flexibility, which has previously been critical to the development of offshore wind farms in the UK, is fundamental to whether the Order is fit for purpose.
- 5.18 The reasons for this principally relate to the need to manage and drive down the cost of offshore wind developments to justify equity investment and access debt funding in a competitive international market. This includes the need to maintain competitive tension in the procurement process driving down costs; the need to take advantage of new technology developments and emerging products in the market for offshore wind turbine generators and other equipment; and the need to drive down the cost of energy for the purposes of tendering for Contracts for Difference.
- 5.19 The final design of a wind farm depends on a number of factors which include the size, height and capacity of the chosen turbine type; electrical design; length of cables; areas where development is constrained; the outcomes of site investigations, and ongoing wind monitoring results. All these are considered post-consent at the stage of detailed design and optimisation when the final number and type of turbines and their location will be decided as a function of site constraints and viable layout. This final design will be approved under the provisions of the deemed marine licences.

Onshore flexibility

- 5.20 Similar flexibility is required for the onshore elements of the development. With regard to the onshore project substation, the optimal design will be determined through the contracting process. Each tenderer will offer different technologies, designs and layouts for the onshore project substation within the parameters of any consent obtained, which enables the optimal design solution to be chosen. Final detailed design of the onshore project substation will be agreed after the appointment of a contractor.
- 5.21 As a result, flexibility within the Order, both onshore and offshore, is needed to optimise the Project in the light of variable costs and supply chain availability; to accommodate technology development in turbines and other equipment; and to allow for optimal detailed design and procurement within the parameters of consents.

Policy support for flexibility

- 5.22 The use of flexibility in project details within an Order is expressly endorsed by National Policy Statements EN-1 (at paragraphs 4.2.7 to 4.2.10) and EN-3 (at paragraphs 2.6.42 to 2.6.45), provided the resulting variables are fully assessed in terms of worst case effects. Paragraph 4.2.9 of EN-1 explains that where flexibility is sought, it will be necessary to include appropriate requirements within the Order to ensure that the Project "envelope" is limited to that which has been assessed in the Environmental Statement.
- 5.23 This approach, known as the "Rochdale Envelope", has been followed numerous times in relation to large scale offshore wind farms consented under section 36 of the Electricity Act 1989 and the 2008 Act, and it is an approach which is well known and adopted by statutory consultees. Relevant statutory consultees have all been made aware of the parameters used in the Environmental Impact Assessment (**EIA**) and the Order.
- 5.24 By including scenarios within the Order, the Applicant is utilising synergies and efficiencies between Norfolk Vanguard and Norfolk Boreas. The Project envelope supports this flexibility and the Applicant has included appropriate requirements within Part 3 of Schedule 1 (together with appropriate conditions within the DMLs) to determine how this flexibility can be implemented within the parameters assessed in the Environmental Statement.

Parameters in the Order

- 5.25 The overall result of the wording in Part 1 of Schedule 1 (i.e. paragraph 1 and Work Nos. 1, 2 3A, 3B and 4A) and Requirement 2 (*Detailed offshore design parameters*) in Part 3 is to allow similar flexibility in the Order as in previous consents. In particular, the undertaker will have freedom, within the specified parameters, as to the number of wind turbines installed, the size of turbines, the resulting electrical export capacity of the generating station up to 1,800 MW, the extent to which the area within the Order limits is used, the precise layout of turbines, offshore service platform, meteorological masts, offshore electrical platforms and the arrangement of cabling between the turbines, offshore service platform, meteorological masts and offshore electrical platforms. The undertaker will also have flexibility with regard to the configuration and specification of the HVDC export infrastructure.
- 5.26 The Planning Inspectorate (**PINS**) has issued an Advice Note (Advice Note 9) which suggests (page 10) that a practical way forward in the use of the Rochdale Envelope would be for the Order application to "*set out specified maximum and minimum*" parameters, and gives possible examples, for offshore wind farms, of maximum/minimum turbine numbers; hub height and blade tip heights; minimum clearance above mean sea level; and separation distances between turbines. While these examples are not intended to be exhaustive for use by promoters, many of the fundamental parameters which define the majority of likely significant effects are included in the Advice Note, and each is considered further below, with reasoning provided for including, or not including, each parameter within the Order, or including parameters which are not included in the Advice Note.
- 5.27 The parameters included in the Order are set out in the Appendix to this Explanatory Memorandum for ease of reference.

Maximum capacity and maximum number of turbines

- 5.28 The total capacity of an offshore wind project, together with its project boundary, is an important defining characteristic. The maximum electrical export capacity of the Project is 1,800 MW measured at the point of connection to the offshore electrical platform(s). Export capacity at the point of connection, rather than capacity of the wind turbine generators, has been used in the description of the authorised development in the Order to allow for internal cable losses and potential turbine non-availability at the wind farm array. The total export capacity comprises the over-arching project description, and all other parameters are in effect subordinate to that description. It controls the maximum number of turbines that can be installed at any given turbine capacity, with an absolute maximum number of turbines for the Project set at 180.

Minimum number of turbines

- 5.29 Advice Note 9 suggests a minimum number of turbines should be specified. It is not considered that this would be a workable or appropriate parameter for the Applicant.
- 5.30 It is not necessary to impose a minimum to ensure that the project exceeds the NSIP threshold of 100 MW as that threshold turns on what the capacity of the scheme is expected to be at the point of application and consent. This is not in doubt – the expected electrical export capacity is 1,800 MW. While a lower figure may in fact be constructed once the turbine size/capacity has been decided and the scheme design optimised after the grant of consent, there is no basis to expect that the capacity constructed would be less than 100 MW.
- 5.31 Whether setting a minimum number of turbines as a parameter would either be reasonable or enforceable must be open to doubt. An offshore wind farm consent is a valuable asset, and if a developer chooses only to utilise part of it, there will invariably be very good commercial and technical reasons for this. The flexibility sought in a modern large scale development consent for a large offshore wind farm is fundamental to whether or not the project will be constructed at all, and goes to the heart of whether the consent is fit for purpose to permit a buildable, economically viable project. This may not be the case for other types of, particularly onshore, development, but it is the case for offshore wind farms.
- 5.32 There can be no EIA justification for seeking to impose a minimum turbine requirement, since the fewer the number of turbines, the lesser the impact.
- 5.33 To seek to impose a minimum number of turbines would also cut across a long standing principle of consents for development, namely that it is lawful for less than the full extent of the consent to be constructed, as long as what is constructed is in accordance with the requirements of the consent.
- 5.34 The other issue which arises is whether a minimum number of turbines is needed to address the point in the Advice Note that the project parameters should not be "*so wide ranging as to represent effectively different schemes*". The project is fundamentally defined by the Order limits, the nature of the development (an offshore wind farm) and the maximum 1,800 MW export capacity. It is inherent in this type of project that there will be variations in turbine numbers and scheme layout, as already explained, and it cannot properly be regarded as giving rise to "*effectively different schemes*" to the extent that an Order in these terms cannot lawfully be granted. Numerous large scale consents on an equivalent basis have already been granted under the Electricity Act 1989, and more recently under the 2008 Act, for offshore wind farms without a minimum number of turbines being specified.

Maximum and minimum hub height

- 5.35 It is accepted by the Applicant that maximum hub height is a parameter which is appropriate for inclusion in the Order. The maximum height (of 198.5 metres from HAT) serves to fix the Environmental Statement assessments and confirms the maximum height at which static (rather than rotating) elements of each turbine would be seen. However a minimum hub height is not necessary as this is inherently defined by the minimum blade clearance.

Maximum and minimum blade tip height and clearance to mean sea level

- 5.36 The maximum blade tip height is a fundamental parameter and has been fixed at 350 metres (above HAT). The minimum blade clearance to MHWS is set at 22 metres to reflect the long standing position of the Royal Yachting Association and the inclusion of this parameter in previous offshore wind farm consents.
- 5.37 A minimum blade tip height (i.e. the lowest level at which the highest blade could pass) is not referred to in any of the assessments and is inherently fixed by the minimum blade clearance. It is not therefore included as a proposed parameter.

Minimum separation distances between turbines

- 5.38 A minimum separation distance of 760m between turbines has been adopted. The separation is to allow time for the energy in the wind to recover. This approach of

applying minimum separation distances has been commonly used for Electricity Act 1989 and 2008 Act consents. This distance was updated at the start of the examination process to align with commitments made by the Norfolk Vanguard applicant and to simplify the worst case scenario position in relation to ornithology and commercial fisheries.

- 5.39 The number of variables affecting the final optimised layout, including the extent to which the area within the Order limits is used or not used, mean that a condition governing scheme layout which goes beyond the specified minimum separation distances is not appropriate. Whilst in practice most offshore wind farms have been built on a broad grid arrangement, there needs to be flexibility on this issue in the Order, to allow for detailed design and optimisation. This is governed through the design plan and the Development Principles (document reference 8.23) submitted under Condition 14 of the Generation DMLs (Schedule 9-10) and Condition 9 of the Transmission DMLs (Schedule 11-12).

Maximum rotor diameters

- 5.40 Whilst not mentioned as a parameter in the Advice Note, the Applicant considers that a parameter on maximum rotor diameter of 303 metres is necessary to ensure a robust EIA. The total blade swept area of the turbines is a key factor in different assessments. This approach also provides an indirect control over the capacity of turbines although the 1,800 MW maximum export capacity means that an individual limit on turbine capacity is not necessary, as it has no bearing on the assessments in the Environmental Statement.

Foundation parameters

- 5.41 It is fundamental to the Project that there should be flexibility to use different foundation types. Four different foundation types are provided for: monopile (piled or suction caisson), jacket (piled or suction caisson), gravity base or Tetra-base. The choice of foundations will be influenced by a variety of factors, as explained in the project description chapter of the Environmental Statement (chapter 5). In terms of the Order, the Applicant has considered which design parameters for each type of foundation are important to ensure a complete and robust EIA, and these have been included in the Order.

Offshore electrical platforms, offshore service platform, meteorological masts and buoys

- 5.42 The number of meteorological masts, offshore service platform and offshore electrical platforms will not exceed two, one and two respectively. The type of meteorological mast, offshore service platform, and offshore electrical platform will be determined as part of the post consent detailed design and optimisation process, and will depend on the final layout and electrical design considerations. For the reasons given above, the precise design of the meteorological masts, offshore service platform and offshore electrical platforms cannot be fixed at this time. Accordingly, parameters limiting their dimensions and foundation arrangements (where relevant) are included in the Order. Their final location within the Order limits will depend on post consent detailed design and optimisation.

Array, Interconnector, Project Interconnector and export cables

- 5.43 The precise number, layout and total length of the array, interconnector, Project Interconnector, and export cables cannot be fixed until post consent design optimisation. The key factor for assessment purposes is the total cable length, based on the maximum number of turbines and a worst case layout for cabling, and the maximum length has been included as a parameter in the Order, whether under a single phase or two phased approach.

Offshore Order limits and offshore plans

- 5.44 The final parameter is the Order limits. The nature of the flexibility sought necessarily means that the offshore Works Plan is simplistic. It is not possible to provide a more detailed plan, for the reasons given above. In this respect, it is worth noting that the offshore Project site, shown on the offshore Works Plan (document reference 2.4) and Figure 5.1 in the Environmental Statement (document reference 6.1), contains a small circular gap in the north-eastern part of the offshore Project site. This is for a meteorological mast (Met Mast) which is owned and operated by East Anglia Offshore Wind. The Met Mast and associated 250m

buffer is not part of the Norfolk Boreas Agreement for Lease nor is it included in the Order limits for Norfolk Boreas.

- 5.45 It is important to bear in mind that under the deemed marine licences contained in Schedules 9 to 13 of the Order, the undertaker must submit final construction details for approval by the MMO before construction. The MMO must ensure that final construction details conform with the description of Works Nos. 1 to 4B, and compliance with the design parameters in Part 4, in conditions 1 to 7 in the deemed marine licences for the generation assets; and in Part 4, in conditions 1 to 3 in the deemed marine licences for the transmission assets; and in Part 4, condition 2 of the Project Interconnector assets DML. Those submitted details will specify the number, dimensions and layout of the Wind Turbine Generators (**WTGs**), offshore service platform, offshore electrical platforms, meteorological masts and the network of cables. Hence, there will be a further stage of regulatory control of the final form of the development prior to construction.

6 Associated development

DCLG Guidance on associated development

- 6.1 Pursuant to section 115 of the 2008 Act, development consent can be granted for the NSIP and associated development. The Secretary of State for Communities and Local Government has issued guidance on associated development¹ (the **Guidance**) which sets out its defining characteristics and illustrates the types of development that may qualify. Associated development must not be an aim in itself. In most cases, it is of a type normally brought forward with the primary development² and must be subordinate to and necessary for the effective operation of the NSIP, and may include measures necessary to mitigate the effects of the primary development. It should be of a proportionate scale to the primary development. Examples given in the Guidance include grid connections (underground or overhead lines)³.
- 6.2 Work Nos. 2 to 12B in Part 1 of Schedule 1 of the Order include associated development for which consent is sought as part of the generating station NSIP. These works comprise:
- 6.2.1 the offshore electrical platforms (Work No. 2),
 - 6.2.2 subsea cables (Work Nos. 3A, 3B, 4A and 4B),
 - 6.2.3 transition jointing pits (where the offshore cables connect to the onshore cables), onshore underground cables to the onshore project substation, via jointing pits and associated accesses (Work Nos. 4C to 7),
 - 6.2.4 the onshore project substation and associated landscaping and grid connection (Work Nos. 8A to 10C),
 - 6.2.5 the overhead line pylon works and replacement works (Work No. 11A and Work No. 11B), and
 - 6.2.6 the permanent accesses from the A47 (Work No. 12A or 12B) together with various miscellaneous matters.
- 6.3 All these elements clearly fit within the definition of associated development in that they are not an aim in themselves but are required to receive and export the electricity generated by the generating station, with suitable electrical transformation at both the offshore electrical platforms and the onshore project substation. This is reinforced by the fact that these elements will, after construction, be transferred to potentially two or more (depending on whether the phased approach is adopted) new OFTOs. After such transfer, the works will be

¹ Planning Act 2008: associated development applications for major infrastructure projects (Published by Department for Communities and Local Government, April 2013)

² Guidance para. 5

³ Guidance Annex B

owned and operated completely separately from the generating station under a transmission licence issued under section 6 of the Electricity Act 1989.

- 6.4 The works are required to be within the Order limits but the detailed design of the associated development will be a matter for the Applicant. As with the WTGs, the precise number of offshore electrical platforms is not fixed at this stage, but is limited to a maximum of two by the wording of Work No. 2 and by Requirement 2 (*Detailed offshore design parameters*).
- 6.5 Similarly, in terms of the onshore associated development, Work Nos. 8A, 10A, 11A and 11B and Requirement 16 (*Detailed design parameters onshore*) control the parameters for the onshore infrastructure. Work No. 8A dictates the site of the onshore project substation. The precise nature and layout of the equipment in the compound will depend on the turbine(s) selected, the electrical design and other matters. Requirement 16 requires detailed approval of the layout, scale and external appearance of the onshore project substation, which are to be in accordance with the principles of the design and access statement, and limits the maximum height and footprint of the onshore project substation. It also limits the extent of the fenced compound area for the onshore project substation. Detailed approval for landscaping of the connection works, including the onshore project substation, must be sought under Requirement 18 (*Provision of landscaping*).
- 6.6 Work No. 10A dictates the site of the extension to the Necton National Grid substation. Requirement 16 specifies the maximum height of the external electrical equipment comprised in the extension, and restricts the size of the fenced compound area for the extension.
- 6.7 In the event of Scenario 2, Work No. 11A dictates the location of the permanent replacement towers and Work No. 11B is the replacement overhead line corridor. Requirement 16 requires details of the overhead line replacement works to be approved by the local planning authority and restricts the maximum height and footprint of the permanent replacement towers.
- 6.8 In the event of Scenario 2, Article 4 (Limits of deviation) restricts the maximum height of the replacement overhead line to no higher than 4m above the existing overhead line, and also allows a lateral limit of deviation of 25 metres either side of the existing overhead line. In accordance with *The Planning Act (Nationally Significant Infrastructure Projects) (Electric Lines) Order 2013*⁴, these replacement works do not meet the threshold for an NSIP under section 16 of the 2008 Act and are therefore included in the Application as associated development. The proposed overhead line works are to replace existing overhead lines and pylons which are to be slightly realigned. The replacement overhead line works fall within the exempt installations under Section 16, paragraph 3(c) of the 2008 Act as section 37(1) of the Electricity Act 1989 does not apply to it as a result of the *Overhead Lines (Exemption) (England and Wales) Regulations 2009*⁵ (the **2009 Regulations**). The 2009 Regulations state under Regulation 3 that Section 37(1) of the Electricity Act 1989 shall not apply in relation to the installation of an electric line which replaces an existing line whether or not it is installed in the same position as the existing line in question. This is subject to the following limitations as set out in Regulations 4 and 5:
- 6.8.1 the electric line does not have a nominal voltage greater than the nominal voltage of the existing line;
 - 6.8.2 any conditions contained in the section 37 consent applicable to the existing line are to be complied with in respect of the replacement line;
 - 6.8.3 the height above the surface of the ground of any support for the line will not exceed the height of the highest existing or replacement support by more than 10 per cent;

⁴ 2013/1479

⁵ 2009/640

- 6.8.4 the distance between any new small support (being a support not exceeding 10 metres in height) and the existing line will not exceed 30 metres and the distance between any other support and the existing line does not exceed 60 metres; and
- 6.8.5 where the electric line is to be installed in a different position from the existing line, the existing line will be removed within 12 months of completion of the new line.

The above conditions are met.

In addition, where the electric line is to be installed in a different position from the existing line or where the height of the supports for the electric line is to be greater than the existing or where the installation is to be in a National Park or area of outstanding natural beauty, the exemption does not apply if there is likely to be a significant effect on the environment as determined by the local planning authority. The relevant exemption here is that, whilst the electric line may be installed in a slightly different position from the existing line, there is not likely to be a significant effect on the environment.

7 Preliminary Provisions

Articles 1 and 2 of the Order contain preliminary provisions.

Article 1 (*Citation and commencement*) provides for the commencement and citation of the Order. It includes the date on which the Order comes into force, which may or may not be the date on which the Order is made.

Article 2 (*Interpretation*) provides for the interpretation of the Order. Amongst other things, the definition of Order limits includes cross reference to the works plan and to the grid coordinates for the offshore Order limits contained in Schedule 1 of the Order. The Article also defines the offshore electrical platforms and foundations and other structures such as wind turbine generators and the meteorological masts.

In the Order 'commence' is defined as follows:

(a) in relation to works seaward of MHWS, the first carrying out of any licensed marine activities authorised by the deemed marine licences, save for pre-construction surveys and monitoring approved under the deemed marine licences or

(b) in respect of any other works comprised in the authorised project, the first carrying out of 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, demolition work, archaeological investigations, environmental surveys, investigations for the purpose of assessing ground conditions, remedial work in respect of any contamination or other adverse ground conditions, diversion and laying of services, erection of any temporary means of enclosure, temporary hard standing, and the temporary display of site notices or advertisements.

However, requirements are specifically included in Schedule 1, Part 3 of the Order to ensure that certain pre-commencement works are carried out in accordance with relevant details contained in the certified outline

plans.

In the Order 'maintain' is defined to cover both the onshore works and the offshore works, but the definition used in the deemed marine licences is restricted to the offshore works only. However, the definitions have been aligned to maintain consistency.

In the Order, maintain is defined to include inspect, upkeep, repair, adjust, and alter, and this applies to all works. It is also defined to include remove, reconstruct and replace, but (1) only to the extent that this has been assessed in the environmental statement, and (2) only in connection with the following works:

(a) for ancillary works in Part 2 of Schedule 1;

(b) in respect of any cable; and

(c) for any component part of any wind turbine generator, offshore electrical substation, offshore service platform, meteorological mast, or the onshore transmission works.

In addition, maintenance consisting of removal, reconstruction, and/or replacement is expressly excluded from the definition for foundations and buildings associated with the onshore project substation.

The deemed marine licences have a separate definition of 'maintain'. This definition does, however, mirror that of the Order definition save that the definition refers only to the offshore works. In this context, maintenance consisting of alteration, removal, or replacement is excluded in relation to the offshore foundations.

8 Operative Provisions

Articles 3 to 43 of the Order contain provisions for and relating to the authorised project, and miscellaneous and general provisions.

Article 3 (*Development consent etc. granted by the Order*) would grant development consent for the authorised development within the Order limits, thereby authorising the construction of the main development, associated development and ancillary works. The authorised development means the development described in Part 1 of Schedule 1 (*Authorised development*). This includes further 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 describes the ancillary works. These are defined together as the authorised project. In identifying the development authorised by this Order, Article 3 also makes provision for the offshore and onshore works authorised by the Order to be constructed within the Order limits. All the authorised

development must be carried out in accordance with the requirements set out in Part 3 of Schedule 1 (*Requirements*). Article 3 is based on the Model Provisions and follows the approach taken for The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard draft DCO. As set out above, Scenario 1 and Scenario 2 are clearly described in Part 1 of Schedule 1, and shown on the related Work Plan and Land Plan.

Article 4

(Limits of deviation) As noted in section 2.2 and Table 1.1 above, the overhead line modification works will only be required in the event of Scenario 2 given that Norfolk Vanguard will carry out these works in the event of Scenario 1. This article would therefore only apply in the event of Scenario 2. In that case, it would allow for the vertical and lateral deviation of the overhead line replacement works as part of Work No. 11B, not exceeding 4 metres upwards or to any extent downwards and not exceeding 25 metres either side of the existing overhead line (as shown by the dotted line on the Works Plans).

An element of flexibility in deviation is required so that any construction can respond to ground conditions when the works are carried out. It is sought to provide the necessary (but proportionate degree of) flexibility when constructing that part of the authorised development, reducing the risk that the project as approved cannot later be implemented for unforeseen engineering or geological reasons.

A similar approach has been adopted on The National Grid (Hinkley Point C Connection Project) Order 2016 and The National Grid (Richborough Connection Project) Development Consent Order 2017. The Article is also based on the Model Provisions.

It should be noted that this article is the only instance in which a standalone article for Scenario 2 is required. The remaining articles are applicable under both Scenario 1 and Scenario 2.

Article 5

(Power to construct and maintain authorised project) makes provision for the construction and maintenance of the authorised project and follows the Model Provisions. It has been included in other offshore wind farm development consent orders including the recent as made East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard draft DCO.

Article 6

(Benefit of the Order) provides for the transfer of the whole or part of the benefit of the Order with the consent of the Secretary of State (the **SoS**), subject to certain exceptions. It also provides for the transfer of any of the deemed marine licences with the consent of the SoS. The requirement to obtain the SoS's consent is unnecessary in the circumstances referred to in sub paragraph (11) of the Article. These circumstances include where the transferee or lessee is a holder of a transmission licence under the Electricity Act 1989 and where the time limits for claims of compensation in respect of the acquisition of land or

effects upon land as a consequence of the Order has elapsed.

It is anticipated that National Grid will undertake Work Nos. 10A to 10C and, in the event of Scenario 2, the overhead line modification under Work No 11A and 11B in reliance on this sub-paragraph. National Grid is the holder of a transmission licence under the Electricity Act 1989 and therefore the Secretary of State's consent would not be required to transfer the benefit of the Order for these works to National Grid in order to allow National Grid to carry out these works. In view of National Grid's involvement with Work Nos. 10A-11B, National Grid have requested that the Secretary of State does not agree to the transfer of the Order (subject to the relevant exceptions) without National Grid's consent.

Article 6 includes a procedure to be adopted when making an application to the SoS for consent. The essential elements of this procedure are as follows:

- a) before any application is made to the SoS the Undertaker must consult with the SoS and the SoS will provide a response within four weeks of receipt of the notice;
- b) the SoS must not provide consent before consulting the MMO and National Grid respectively;
- c) the SoS must determine an application for consent under this article within 8 weeks commencing on the date the application is received. This period can be extended where agreed in writing with the Undertaker;
- d) prior to any transfer or grant taking effect the Undertaker is required to notify in writing the SoS and so far as relevant the MMO and the relevant planning authorities. Sub paragraphs 14 to 16 of the Article stipulate the notification requirements that apply. In particular the notice must be received by the recipient a minimum of five days prior to the transfer taking effect.
- e) The Undertaker may transfer without the SoS' consent to a transmission licence holder, as such parties are regulated by Ofgem and ensured to have strong covenant strength.
- f) The Undertaker may also transfer without the SoS' consent to any party, if the time limit for claims for the compulsory acquisition of land have elapsed, and any such claims have been resolved or withdrawn.
- g) The Undertaker has added an exception whereby it may transfer to any group company of Vattenfall AB without SoS' consent, but before transferring to any group company, the Undertaker must also provide evidence of the financial strength and sufficient funds of the transferee to the SoS. It is anticipated that this will take the form of a new Funding Statement and completed Funding Agreement to demonstrate availability of funds.

The wording of Article 6 is based on a number of offshore wind development consent orders including the East Anglia THREE Offshore Wind Farm Order 2017 and some of the more specific sections (mentioned in sub-paragraphs (e) to (g) above) have been updated as a result of the recent Norfolk Vanguard DCO examination.

Article 7

(Application and modification of legislative provisions) dis-applies legislative provisions as they would apply but for this article. Article 7(1) provides for the modification of Regulation 6(1)(j) of the Hedgerows Regulations 1997 to provide that removal of any hedgerow to which the Regulations apply is permitted for carrying out or maintenance of development which has been authorised by a development consent order made pursuant to the 2008 Act. This approach was taken on The East Anglia THREE Offshore Wind Farm Order 2017 in relation to the carrying out of development. However, Article 7(1) has been further amended to clarify that removal of hedgerows is also permitted for maintenance activities.

Article 7(2) dis-applies provisions of the Neighbourhood Planning Act 2017 (NPA 2017). This disapplication would provide that the temporary possession provisions in that enactment would not take effect at the expense of the temporary possession provisions contained in the Order. The provisions relating to temporary possession in the NPA 2017 have not yet come into force and regulations required to provide more detail on the operation of the regime have not yet been made.

Because of the uncertainty in relation to the detail around that regime, the Applicant has consulted on the long-standing process available under the Planning Act 2008. The Applicant additionally considers that if Parliament wished to apply NPA 2017 temporary possession regime to DCO projects it could have done so by effecting amendments to Part VII of the Planning Act 2008. It has not done so, and in the absence of the clarity this would provide, the Applicant proposes to proceed under the existing Planning Act 2008 procedure.

Paragraph 3 provides for the disapplication of various additional consents which would otherwise be required from the Environment Agency, internal drainage boards or lead local flood authorities under the Water Resources Act 1991 and the Land Drainage Act 1991. These are the requirements for consents to place structures on or over rivers under the Water Resources Act, the requirement for approval under flood defence and land drainage byelaws made or deemed to be made under the Water Resources Act, the prohibition on placing obstructions in waterways which are not main rivers under the Land Drainage Act and byelaws made under the Land Drainage Act regulating the use and obstruction of watercourses. The Order dis-applies this requirement for in-principle consent in order to ensure that the project can proceed and instead provides for approval of detailed plans in the protective provisions for the Environment Agency and the relevant drainage authorities in Schedule 17. This follows the approach taken in The Triton Knoll Electrical System Order 2016 and the Norfolk Vanguard Order. It should be noted that although these powers will be predominantly required for Scenario 2 (for installation of ducts), the powers may also be required for Scenario 1, where a running track will be installed/ re-installed for the cable pull operation.

Article 8

(Defence to proceedings in respect of statutory nuisance) provides that no-one shall be able to bring statutory nuisance proceedings under the Environmental Protection Act 1990 in respect of noise, if the noise is created in the course of carrying out or maintenance of the authorised project and for which notice has been given under section 60 or consent obtained under section 61 or 65 of the Control of Pollution Act 1974 or if the noise is unavoidable. As stated in the Statement of Engagement submitted with the Application (Document 5.2), it is not considered that any properties will be affected beyond statutory nuisance thresholds, as mitigation measures will be used to control noise emissions. However, the Applicant considers that this Article should be included in the event that proceedings are brought under Section 82 of the Environmental Protection Act 1990. This approach follows the Model Provisions and has been accepted in a number of offshore wind farm development consent orders including, most recently, The East Anglia THREE Offshore Wind Farm Order 2017. The Project comprises nationally significant infrastructure and as a result it is appropriate that the Project is protected.

Article 9

(Street works) confers authority on the undertaker to break up or open, tunnel or bore under, remove or use earth and materials in or under and place and maintain works under the streets specified in Schedule 2 *(Streets subject to street works)*, Part 1 in the event of Scenario 1, or Part 2 in the event of Scenario 2 within the Order limits and for the purposes of the authorised project.

In Scenario 1, given that Norfolk Vanguard will have proceeded and the cable ducts would have been installed underground, this Article is mainly relevant for the streets that are in the vicinity of the onshore project substation and/or Necton National Grid extension. These works will necessitate the powers to (a) break up or open the street, or any sewer, drain or tunnel within or under it (b) tunnel or bore under the street, (c) remove or use all the earth in or under the street, and (d) maintain apparatus under the street. However, this Article is also relevant for Scenario 1 as it applies in order to allow an undertaker to maintain apparatus under a street, which will include the apparatus associated with the onshore cable route.

In the event of Scenario 2, in addition to the works at the Onshore Project Substation and the Necton National Grid extension, Norfolk Boreas will be constructing its own cable corridor and installing its own cable ducts under streets.

As a result, all of the powers under this Article will be required under each of Scenario 1 or Scenario 2. The exact streets in question are outlined in the respective Part of Schedule 2 (Part 1 for Scenario 1 and Part 2 for Scenario 2).

The authority given by this right is a statutory right for the purposes of sections 48(3) (streets, streets works and undertakers) and 51(1) (prohibition of unauthorised street works) of the New Roads and Street

Works Act 1991. The undertaker needs the power to remove or use earth and materials in or under the streets in order to lay the cables for the authorised project under the streets. This approach follows the Model Provisions and a similar approach has been taken on offshore wind farm development consent orders, including The East Anglia ONE Offshore Wind Farm Order 2014 and the Norfolk Vanguard draft DCO. The Article also closely follows the drafting of the more recent National Grid (Richborough Connection Project) Development Consent Order 2017.

Article 10

(Public rights of way) allows the temporary stopping up of public rights of way during the construction of the onshore part of the authorised development. It refers to Schedule 3 (*Public rights of way to be temporarily stopped up*), Part 1 in the event of Scenario 1, or Part 2 in the event of Scenario 2, which lists those rights of way which may be stopped up temporarily. Although these powers will be predominantly required for Scenario 2 (for installation of ducts) they may also be required for Scenario 1 where, for example, the undertaker may need to temporarily stop up a public right of way near a joint bay in order to facilitate cable pulling. Therefore this Article is required in both Scenarios.

This is not based on the Model Provisions but does follow the approach taken in other offshore wind farm development consent orders, most recently in The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard draft DCO.

Article 11

(Stopping up of streets) provides for the temporary stopping up, diversion or alteration of streets. It refers to Schedule 4 (*Streets to be stopped up*), Part 1 in the event of Scenario 1, or Part 2 in the event of Scenario 2, which lists those streets which may be stopped up temporarily. These are the streets which the Applicant anticipates it will need to temporarily stop up, alter or divert. Due to the nature of the works associated with the cable pull through under Scenario 1, the extent of the temporary stopping up under Scenario 1 (Part 1 of Schedule 4) involves less streets and private tracks compared to that under Scenario 2 (Part 2 of Schedule 4).

Where the street is specified in Part 1 and Part 2 of Schedule 4, there is a requirement to consult the street authority, but there is no need to obtain its consent. In addition, Article 11 allows for the stopping up, alteration or diversion of any other street (i.e. a street not referenced in Schedule 4) for the purposes of carrying out the authorised project, subject to the consent of the street authority which may attach reasonable conditions to any such consent. This Article broadly follows the approach taken in the Model Provisions, but more closely follows the approach taken in The East Anglia THREE Offshore Wind Farm Order 2017 and the Hornsea Two Offshore Wind Farm Order 2016.

In the event of Scenario 1, Article 11 also includes the power to permanently stop up a private access track at the Necton National Grid

Substation. This is needed in the event of Scenario 1 as the footprint associated with the National Grid extension under Work No. 10A and 10B will need to be extended in an easterly direction because the Norfolk Vanguard extension will occupy land to the west. It refers to Part 3 of Schedule 4 (permanent stopping up of private means of access for which a substitute is to be provided) and provides that the private access track can only be stopped up if a new private access track is first constructed and substituted for it, or a temporary route is provided whilst the alternative route is constructed. This part of the Article and Part 3 of Schedule 4 follows the approach taken on the Highways England M20 Junction 10a Order 2017.

Article 12 (*Access to works*) authorises accesses to and from public highways to be created at locations specified in Schedule 5 (*Access to works*), Part 1 in the event of scenario 1, or Part 2 in the event of scenario 2.

The power is needed in both Scenarios given that the undertaker will, for example, require access to the running track for the purposes of cable pull-through under Scenario 1 and for the construction of the running track and installation of cables and ducts in the event of Scenario 2.

Any other access not referenced in Schedule 5 will need the approval of the planning authority (subject to a 28 day approval period) after consulting the highway authority. It therefore streamlines matters for the undertaker to require only one approval from the relevant authority.

This Article broadly follows the approach taken in the Model Provisions, but more closely follows the approach taken in The East Anglia THREE Offshore Wind Farm Order 2017 and the Hornsea Two Offshore Wind Farm Order 2016.

Article 13 (*Agreements with street authorities*) authorises street authorities and the undertaker to enter into agreements relating to any temporary stopping up, alteration or diversion of a street authorised by the Order, or the carrying out of works in the streets referred to in Article 9 (*Street works*). This Article broadly follows the approach taken in the Model Provisions, but more closely follows the approach taken in The East Anglia THREE Offshore Wind Farm Order 2017 and the Hornsea Two Offshore Wind Farm Order 2016.

Article 14 (*Application of the 1991 Act*) provides that some provisions of the New Roads and Street Works Act 1991 apply to the carrying out of street works under Article 9 (*street works*) and the temporary stopping up, diversion or alteration of a street under Article 11 (*temporary stopping up of streets*). The relevant provisions are listed in sub-paragraph 2 of the article. Although this is not a Model Provision, comparable provisions are commonly included in Transport and Works Act Orders and have also been consented in the Hornsea Two Offshore Wind Farm

Order 2016 and the Hornsea One Offshore Wind Farm Order 2014.

Article 15 (*Discharge of water and works to watercourses*) enables the undertaker to discharge water into any watercourse, public sewer or drain in connection with the construction and maintenance of the authorised project with the approval and superintendence (if provided) of the authority to which the watercourse, public sewer or drain belongs (such approval not to be unreasonably withheld) and subject to other conditions. This element of the Article follows the Model Provisions and The East Anglia THREE Offshore Wind Farm Order 2017.

The Article has been further modified to make it clear that the undertaker will have powers to alter watercourses, with the consent of the Environment Agency or the Internal Drainage Board or Norfolk County Council as appropriate.

Article 16 (*Authority to survey and investigate the land onshore*) confers upon the undertaker a power to survey and investigate land, including the ability to make trial holes, to use and leave apparatus on the land in question and to enter onto land. The Article also makes provision in relation to the payment of compensation and the notice period that must be given to owners and occupiers of land ahead of any surveys. The Article follows the Model Provisions but with modifications which follow the approach taken in the East Anglia THREE Offshore Wind Farm Order 2017. In addition, the purpose for which a survey or investigation might be carried out also includes purposes required by the assessment carried out in the Environmental Statement for the authorised project.

Article 17 (*Removal of human remains*) enables the undertaker to remove human remains from the Order limits, and provides a process for notification and identification of the human remains as well as their re-internment or cremation. The undertaker would be required to pay the reasonable expenses associated with this process.

There is a non-designated old Quaker burial ground at North Walsham, where the potential for impacts has been minimised as far as possible. However, whilst it is not anticipated that any human remains will be encountered during construction works, it is possible that human remains could be found within close proximity to the old burial ground or within the wider Order limits such as, for example, at the onshore project substation (which would therefore be relevant under both Scenario 1 and Scenario 2).

This Article follows the Model Provisions, save that the Article applies to the entire Order limits rather than a defined area. In this regard, the Article follows the approach taken on the Knottingley Power Plant Order 2015 where it also applied across the entirety of the Order limits.

Article 18 (*Compulsory acquisition of land*) confers on the undertaker powers of compulsory acquisition of so much of the Order land as is required for the authorised project or to facilitate it, or is incidental to it. The article

provides broad powers. It is considered necessary to make it clear in this provision that the whole of the Order land is potentially subject to powers of compulsory acquisition. In practice, however, pursuant to the other Articles, the powers of compulsory acquisition are limited, and for the great majority of the Order land, will be restricted to some combination of the acquisition of specified new rights (Article 20), and specified powers of temporary possession. The Article broadly follows the Model Provisions and follows the approach taken in the more recent East Anglia THREE Offshore Wind Farm Order 2017.

Article 19 (*Time limit for exercise of authority to acquire land compulsorily*) imposes a time limit of five years from the coming into force of the Order for the exercise of powers relating to the compulsory acquisition of land. This follows the Model Provisions.

Article 20 (*Compulsory acquisition of rights*) enables the undertaker to acquire rights over land, including new rights and existing rights if applicable. It also provides for the extinguishment or overriding of existing rights in land subject to the provisions of the Article in combination with Article 21 (Private rights). The Article is drafted so as to allow the undertaker flexibility to acquire new rights in the Order land if appropriate rather than outright acquisition under Article 18 (*Compulsory acquisition of land*). This flexibility allows the undertaker, if it is possible, to reduce the areas required for freehold acquisition and rely on new, permanent rights instead where appropriate. This flexibility is appropriate to allow for continued negotiations with owners of Order Lands. It broadly follows the Model Provisions and is a provision that is usual in Transport and Works Act Orders and hybrid bills. An example can be found in Article 19 of the Network Rail (Nuneaton North Chord Order) 2010 and Part 3 of Schedule 6 to the Crossrail Act 2008. It was also accepted in the East Anglia THREE Offshore Wind Farm Order 2017.

The Article is subject to Schedule 6, Part 1 in the event of scenario 1, or Part 2 in the event of scenario 2, and states that in the case of land scheduled in Column 1 of that Schedule, the new rights that may be acquired are limited to the new rights (and restrictive covenants where relevant) set out in Column 2 of the Schedule. The great majority of the plots in the Order are restricted in this way.

Reference is also made to Schedule 7 (*Modification of compensation and compulsory purchase enactments for creation of new rights*) in the modifications of compulsory purchase legislation to apply appropriate provisions regarding material detriment etc. to the acquisition of new rights.

Further, it is to be noted that the undertaker is seeking to impose new restrictive covenants as scheduled in Schedule 6 (*Land in which only new rights etc. may be acquired*) to the Order for the protection of the onshore cables, jointing bays and any ducts that will be installed as part of the authorised development. Such protection has been given in Transport and Works Orders (notably relating to Docklands Light

Railway) to protect the structure of subterranean development such as tunnels. It was also included in the Rampion Offshore Wind Farm Order 2014 and the East Anglia THREE Offshore Wind Farm Order 2017. It is considered that the nature of the authorised development is appropriate for such restrictive covenants and the predominantly agricultural nature of the Order lands would not be unduly burdened by the imposition of restrictive covenants, particularly on the basis that where restrictive covenants are being sought, a right of access for maintenance purposes over the same area is also being sought.

Article 21

(Private rights) applies to all private rights over land subject to compulsory acquisition under Article 18 (*Compulsory acquisition of land*) and Article 20 (*Compulsory acquisition of rights*). It provides that where land is compulsorily acquired, such private rights or restrictive covenants are suspended and unenforceable or (where the beneficiaries are notified by the undertaker), extinguished as far as their continuance would be inconsistent with the acquisition of the land; where new rights or restrictive covenants are acquired over land, private rights cease to have effect in so far as their continuance would be inconsistent with the exercise of the right or compliance with the restrictive covenant; and where temporary possession of land is taken, private rights are suspended and unenforceable, in so far as their continuance would be inconsistent with the purpose for which temporary possession is taken for as long as the undertaker remains in lawful possession of the land.

Reference to section 152 of the 2008 Act is included in paragraph (4) to confirm that compensation payable under this Article is in accordance with the principles for the payment of compensation for injurious affection to land that would ordinarily apply to schemes where statutory authority is relied upon and a claim under section 10 of the Compulsory Purchase Act 1965 arises. Such claims instead arise under section 152 of the 2008 Act rather than section 10 of the Compulsory Purchase Act 1965 as a result of the contents of section 152 of the 2008 Act. Paragraphs 6 and 7 allow the undertaker to provide notice to the contrary to the provisions of the Article, allowing the undertaker to confirm to the relevant owner of a dominant tenement that the rights that would by operation of this Article be suspended and unenforceable are not so suspended or unenforceable. The Article follows the Model Provisions and was included in the East Anglia THREE Offshore Wind Farm Order 2017.

Article 22

(Application of the Compulsory Purchase (Vesting Declarations) Act 1981) provides for the Order to apply as if it were a compulsory purchase order for the purposes of the Compulsory Purchase (Vesting Declarations) Act 1981 and provides for that Act to have effect subject to certain modifications. It gives the undertaker the option to acquire land by this method rather than through the notice to treat procedure. This Article is based on the Model Provisions and has been updated to reflect the changes brought about by the Housing and Planning Act

2016. It follows the approach taken on the East Anglia THREE Offshore Wind Farm Order 2017. In addition the Article also reflects recent amendments to the Compulsory Purchase (Vesting Declarations) Act 1981, and provides that where the making of the Order is subject to a statutory challenge, the deadline for the exercise of compulsory acquisition powers under the Compulsory Purchase (Vesting Declarations) Act 1981 is increased by a period equivalent to the period beginning with the day the application is made, and ending on the day it is withdrawn or finally determined (or if shorter, one year).

Article 23

(Application of Part 1 of the Compulsory Purchase Act 1965) applies Part 1 of the Compulsory Purchase Act 1965 to the Order with certain modifications in relation to section 125 of the 2008 Act. This provision reflects recent changes introduced by the Housing and Planning Act 2016. Paragraphs (1) to (3) amend the provisions of the Compulsory Purchase Act 1965 so that they are consistent with the terms of the Order and paragraph (4) makes it clear that the notice periods introduced by the Housing and Planning Act 2016 do not apply to the temporary possession or use of land under articles 26 or 27 of the Order. Whilst this is not a Model Provision, there are precedents for this in, for example, the High Speed Rail (London – West Midlands) Act 2017. This approach is also followed in The Wrexham Gas Fired Generating Station Order 2017.

In addition, the Article also reflects recent amendments to the Compulsory Purchase Act 1965 providing that where the making of the Order is subject to a statutory challenge, the deadline for the exercise of compulsory acquisition powers under the Compulsory Purchase Act 1965 is increased by a period equivalent to the period beginning with the day the application is made, and ending on the day it is withdrawn or finally determined (or if shorter, one year).

This Article also clarifies, by applying an amendment for the purposes of the Order to Schedule 2A of the Compulsory Purchase Act 1965, that the counter-notice provisions in that schedule that are available to landowners where part only of land is acquired compulsorily do not apply where the land has only been taken possession of under the temporary possession powers set out in Article 26 or Article 27.

Article 24

(Acquisition of subsoil or airspace only) authorises the undertaker to acquire the subsoil in any Order land without acquiring the whole of that land. In certain cases it may be necessary only to acquire a stratum of land below the surface and in the absence of this article the undertaker would be obliged to acquire the whole interest in the land. This is a Model Provision and there are precedents for this in, for example, the Glasgow Airport Rail Link Act 2007.

This article also authorises the undertaker to acquire interests in or rights over airspace a certain height above ground. This is particularly relevant in the context of overhead electricity lines, and therefore the overhead line modification works under Scenario 2. An example can be

found at Article 28 of the National Grid (North London Reinforcement Project) Order 2014.

Article 25

(Rights under or over streets) provides that the undertaker may use the subsoil or air-space over a street within the Order limits for the authorised project without being required to acquire any part of the street or any easement or right in the street, which is particularly necessary for the National Grid overhead line works as part of Work No 11A and 11B in Scenario 2, but may also be required for the areas around the onshore project substation (Work No. 8), National Grid substation extension (Work No. 10), and the landfall works (Work No. 4B and 4C) in the event of Scenario 1 (and Scenario 2). Provision is made for the payment of compensation to an owner or occupier of land where their interest in land is not acquired and who suffers loss as a result. The Article follows the Model Provisions and the approach taken in the East Anglia THREE Offshore Wind Farm Order 2017.

Article 26

(Temporary use of land for carrying out the authorised project)

The power to temporarily possess "any other Order land" (in respect of which notice of entry has not yet been served under Section 11 of the Compulsory Purchase Act 1965 and no vesting declaration has been made under the Compulsory Purchase (Vesting Declarations) Act 1981), in addition to the land specified in Schedule 8, is unlikely to be exercised for the Project, as all of the Order land, save for the freehold plots is included in Schedule 8 for some purpose (either for access, use for temporary construction compounds, or for purposes of construction of the authorised project). The freehold plots are as follows:

Plots 40/14a, 40/14a, 40/14a, 40/14b, 41/23a, 41/24, 41/25, 41/26a, 41/26b, 41/26e, 41/26e, 41/28c, 41/23, 41/24, 41/25, 41/26, 41/26d, 41/23a, 41/24, 41/25, 41/26a, 41/26b, 41/28b, 41/28c, 41/28d, 41/26e, 41/26g, 41/28d, 40/12c, 40/14a, 40/14b, 40/12d, 40/14c, 40/16, 40/16a, 40/16c, 40/12a, 40/16b and 40/24b in Scenario 1; and

Plots 40/17, 40/21, 40/21, 41/28a, 41/29, 41/30a, 41/30a, 41/31, 41/34, 41/35, 41/37, 41/38, 41/38, 41/38, 41/38, 40/13, 40/15, 40/15, 40/14a, 40/14b, 40/14b, 40/19, 40/19, 40/25, 40/29, 42/01, 42/01, 42/01, 42/01, 42/01, 42/01, 41/19, 41/20, 41/21, 41/36, 41/26, 41/26a, 41/04, 41/06, 41/38, 41/38, 41/06b, 42/01, 42/01, 42/01, 41/28a, 41/28a, 41/29, 41/29, 41/30a, 41/30a, 41/30a, 41/31, 41/31, 41/31, 41/34, 41/34, 41/35, 41/35, 41/37, 41/37, 40/19, 40/19, 40/25, 40/25, 40/29, 40/30, 42/01, 42/01, 40/14a, 40/19, 40/17, 40/16, 40/17, 40/18, 40/21, 40/21, 40/22, 40/22, 40/24, 41/02, 40/13, 40/15, 40/14b, 40/14c, 40/16c, 40/24c, 40/24d, 40/22 and 40/22a in Scenario 2.

The Article clarifies that unless permanent interests have been acquired in any land that the undertaker has taken temporary possession of, the undertaker must remove any temporary works and restore the land to the reasonable satisfaction of the owners of the land, but is not required to remove certain works such as drainage works or road surfacing.

In all cases where powers of temporary possession are exercised, validly evidenced compensation must be paid to the landowner and any occupiers for loss or damage arising from their exercise where claimed.

Article 27 (*Temporary use of land for maintaining authorised project*) provides that the undertaker may take temporary possession of land within the Order limits required for the purpose of maintaining the authorised project, and to construct such temporary works as may be reasonably necessary for that purpose for a period of five years from the date on which that part of the authorised development is first used. Provision is made for notice and compensation. This power does not apply with respect to houses, gardens or any other buildings for the time being occupied. Provision is also made for taking temporary possession without notice, or at a shorter notice than is usually permitted in an emergency. This is based on, but modifies, the Model Provisions but does follow the approach taken on The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard Order.

Article 28 (*Extinguishment of private rights and restrictive covenants relating to apparatus removed from land subject to temporary possession*) is included in relation to the works to overhead lines, on land in which National Grid owns apparatus. It provides that where National Grid apparatus is removed from land that the undertaker has only taken temporary possession of (and not, necessarily, compulsorily acquired a permanent interest in land), any private rights and restrictive covenants in relation to that apparatus can be permanently extinguished if the parties so agree. In addition, there is no liability or requirement to remove any foundations from the land when giving up temporary possession.

This is intended to allow the Applicant, if appropriate, to remove redundant apparatus where that or other apparatus is altered or relocated, and to facilitate the relevant land being burdened only with interests that are appropriate to the new or altered apparatus with the intention of assisting National Grid. This follows the approach taken on other connection projects including The National Grid (Richborough Connection Project) Development Consent Order 2017.

Article 29 (*Statutory undertakers*) authorises the undertaker to acquire land and new rights in land belonging to statutory undertakers as shown on the land plans within the limits of the land to be acquired or used and described in the book of reference. This is a Model Provision which has been modified in accordance with the approach taken on other offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard Order.

Article 30 (*Recovery of costs of new connections*) provides for compensation to owners or occupiers of property to which the apparatus of a public utility undertaker was connected, where that apparatus is removed in

accordance with Article 29 (*Statutory undertakers*). This is a Model Provision and has been included on offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard Order.

Article 31 (*Operation of generating station*) authorises specifically the undertaker to operate the authorised project in accordance with the provisions of this Order or an agreement made under this Order. This aspect is included pursuant to section 140 of the 2008 Act. Although not a Model Provision, this Article has been included on other offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard Order.

Article 32 (*Deemed marine licences under the Marine and Coastal Access Act 2009*) provides for five deemed marine licences, the terms of which are set out in Part 1 of Schedules 9 to 13, required for the deposit at sea within the Order limits of the specified substances and articles and the construction of works in or over the sea and/or on or under the seabed. As explained above, the approach of splitting the deemed marine licences into four separate licences is to provide for a situation where generation or transmission assets will be held by different companies (including OFTOs) post-construction. Although not a Model Provision, this Article has been included on other offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017.

Article 33 (*Application of landlord and tenant law*) overrides the application of landlord and tenant law in so far as it may prejudice the operation of any agreement for leasing the whole or part of the authorised project or the right to operate the same and any agreement for the construction, maintenance, use or operation of the authorised project or any part of it entered into by the undertaker. This is a Model Provision and has been included on other offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard Order.

Article 34 (*Operational land for the purposes of the 1990 Act*) provides that for the purposes of section 264(3) of the Town and Country Planning Act 1990 the development consent granted by the Order shall be treated as a specific planning permission. This is a Model Provision and has been included on other offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard draft DCO.

Article 35 (*Felling or lopping of trees and removal of hedgerows*) enables the undertaker to fell or lop trees and shrubs for the purposes of preventing obstruction or interference with the authorised project and danger to the authorised project. Provision is included for the payment of compensation for loss and damage.

It enables the undertaker to remove the hedgerows specified in the various Parts in Schedule 14, which include:

(a) in the event of Scenario 1, the important hedgerows specified in Part 1, and the hedgerows specified in Part 2; and

(b) in the event of Scenario 2, the important hedgerows specified in Part 3, the hedgerows specified in Part 5, and the potentially important hedgerows specified in Part 4.

There are a number of hedgerows that are considered potentially important because the Applicant has not yet assessed these hedgerows. These hedgerows will either be classed as 'Important Hedgerows' or 'Hedgerows' once they have been assessed. The reason that there are no potentially important hedgerows under Scenario 1 is because the Applicant has already assessed hedgerows in the vicinity of the onshore project substation and/or connected with the National Grid extension works (Work No.8A – Work No 10C), which has allowed the Applicant to determine whether the hedgerow falls into the category of an 'Important Hedgerow' or a 'Hedgerow'. Along the cable route, cable ducts will have been installed by Norfolk Vanguard under Scenario 1, such that any potentially important hedgerows will have been assessed and removed (where necessary) by Norfolk Vanguard. Under Scenario 1, it is also envisaged that any gaps in hedgerows (required for the running track during the cable pull through operation) will be retained from Norfolk Vanguard, such that no hedgerows will need to be removed from these locations. Norfolk Boreas would reinstate these hedgerows following completion of the cable pull through operation and removal of the running track.

The Article broadly follows the Model Provisions but more closely follows the approach in The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard draft DCO.

Article 36

(Trees subject to tree preservation orders) enables the undertaker to fell or lop the roots of any tree which is subject to a tree preservation order to prevent it obstructing or interfering with the construction, maintenance or operation of the authorised project. Compensation is payable if loss or damage is caused.

The Article is a Model Provision save that it applies generally to any tree subject to a tree preservation order made before and after the date of the Order coming into effect and either within or overhanging the Order limits. The approach follows that taken on the Hornsea Two Offshore Wind Farm Order 2016.

Article 37

(Certification of plans etc) requires the undertaker to submit copies of the documents, plans and sections referred to in the Order to the decision maker, for certification as true copies following the making of the Order. This is a Model Provision and has been included on offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard draft

DCO.

Article 38 (*Arbitration*) makes provision for any dispute arising under the provisions of the Order and, unless otherwise provided for, to be settled by arbitration. A saving provision has been included for Trinity House, and it will not apply for the Secretary of State, or the Marine Management Organisation (MMO). The concept derives from the Model Provisions but changes, including the addition of a new schedule, have been made to provide a more bespoke and relevant arbitration process which is necessary in the context of offshore wind farm developments. The MMO would instead be subject to an appeal process similar to the Marine Licensing (Licence Application Appeals) Regulations 2011 (2011 Regulations) which would apply to any refusal or non-determination under the DMLs in Schedule 9-12. This appeal process in the 2011 Regulations is subject to certain modifications, provided in Part 5 of the respective DMLs, including a reduction in the time limit to lodge an appeal from six to four months, and provision for time periods for various stages of the appeal process.

This approach is currently unprecedented in as made Orders. However, this matter has been the subject of extensive analysis and discussion throughout the Hornsea Project Three, Thanet Extension Offshore Wind Farm, and the Norfolk Vanguard examinations. The Examining Authority in the Norfolk Vanguard examination, proposed an appeal mechanism following the modified 2011 Regulations in the Examining Authority's schedule of changes to the draft DCO published on the 9 May 2019. This latest approach has been used in the Norfolk Vanguard final draft DCO and as an option in the final draft DCO for Hornsea Project Three.

Article 39 (*Procedure in relation to certain approvals etc.*) provides a mechanism for securing any consent or approval from a consenting body required by the provisions of the Order. It applies Schedule 16 (*Procedure for discharge of Requirements*), which sets out the procedure for the discharge of requirements contained in Part 3 of Schedule 1. This is not a Model Provision but a similar approach was followed on the Hinkley Point C (Nuclear Generating Station) Order 2013 and the Norfolk Vanguard draft DCO.

Article 40 (*Abatement of works abandoned or decayed*) authorises the Secretary of State to issue a written notice to the undertaker requiring the repair, restoration or removal of Works No. 1(a) to 1(d) or Work No. 2 where they have been abandoned or allowed to fall into decay. This power is stated to be without prejudice to any notice served under section 105(2) of the Energy Act 2004 requiring the submission of a decommissioning scheme. Although not a Model Provision it has been included on a number of offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017.

Article 41 (*Saving provisions for Trinity House*) is a standard provision included for offshore wind farms, including that for Scarweather Sands. It is in the

Model Provisions for Harbours and has been included on offshore wind farm development consent orders including The East Anglia THREE Offshore Wind Farm Order 2017.

Article 42 (*Crown rights*) protects the Crown's position in relation to its own estates, rights, powers, privileges, authorities and exemptions. The Crown's written consent is required where any land, hereditaments or rights of the Crown are to be taken, used, entered or interfered with as a result of granting of the Order, although there is no conditionality in respect of third party interests in Crown land. Although not a Model Provision, the approach taken follows the approach for The East Anglia THREE Offshore Wind Farm Order 2017 and the Norfolk Vanguard draft DCO.

Article 43 (*Protective provisions*) gives effect to the protective provisions in Schedule 17 (*Protective provisions*).

9 Schedules

Schedule 1 (*Authorised Project*) Part 1 of Schedule 1 specifies the authorised development comprising the scheduled works. This consists of the work packages (Work No.1 to 12B) and works in connection with them that fall within the scope assessed by the Environmental Statement. Removal of static fishing equipment is one example of a work associated with Work No.1 to 4B that may be required. The expectation would be that the Applicant would have reached agreement for removal of all static gear prior to construction of offshore activities. However, in the event that this is not possible, the power may be required to remove static fishing equipment that are impeding the safe passage of vessels and/or the safety of construction operations.

The ancillary works are set out in Part 2.

Part 3 sets out certain requirements that the undertaker must meet in relation to the construction and operation of the authorised project. These requirements take a similar form to planning conditions.

With regard to the structure of the onshore requirements, it should be noted that the principles informing the proposed onshore mitigation are largely set out in a number of outline documents submitted with the Application.

Requirements: the Requirements apply to both Scenario 1 and Scenario 2 unless stated otherwise within the Requirements. This is because, as explained in Section 4 above, the Requirements will apply irrespective of the Scenario implemented, and any differences in the scope of the outline plans is detailed within the documents or plans to be submitted pursuant to the respective Requirement.

Requirement 1 (*Time limits*) specifies the time limit for commencing the authorised development as 5 years from the date of the Order, as provided for in Regulation 3 of the Infrastructure Planning

(Miscellaneous Prescribed Provisions) Regulations 2010.

Requirements 2 to 11 (*Detailed offshore design parameters*) set out the detailed design parameters within which the authorised development must be constructed. Requirements 2 and 3 deal with the dimensions and other characteristics of WTGs. Requirement 4 limits the dimensions of the offshore electrical platforms, offshore service platform and meteorological masts. Requirement 5 limits the total length of export, array and interconnector cables and specifies the maximum amounts (in area and volume) of cable protection. Requirement 5(5) also makes clear that Work No. 3A and Work No. 3B are mutually exclusive. Work No. 3B will not be applicable under Scenario 2 as it concerns Project Interconnector cables with offshore electrical platforms in Norfolk Vanguard. However, in the event of Scenario 1, as explained in paragraph 5.2 above, the Applicant will have the option as to whether to connect into an offshore electrical platform in Norfolk Vanguard West or Norfolk Vanguard East (Work No. 3B). If the Applicant does not connect into Norfolk Vanguard West or Norfolk Vanguard East with a Project Interconnector cable then the Applicant will need to connect the subsea cables into an offshore electrical platform within the Norfolk Boreas site pursuant to Work No. 3A. Accordingly, Requirement 5(5) provides that in the event of scenario 1, only Work No. 3A or Work No. 3B may be commenced.

Requirements 6 to 11 restrict the dimensions of the different foundation types and Requirement 11 limits the amount of scour protection (in area and volume) for the various structures. The purpose of these various restrictions is to ensure that the authorised development is restricted to that which has been assessed in the Environmental Statement.

Requirement 12 (*Aviation safety*) provides that lighting must be used as determined necessary for aviation safety. It also requires notification of certain information to the Defence Infrastructure Organisation at least 14 days prior to commencement of the offshore works, on completion of the offshore works and of any changes to the information supplied.

Requirement 13 (*Ministry of Defence surveillance operations*) has been included to ensure appropriate mitigation to prevent or remove any adverse effects which the operation of the authorised development will have on the air defence radar at Remote Radar Head (RRH) Trimingham and the Ministry of Defence's air surveillance and control operations.

Requirement 14 (*Offshore decommissioning*) requires a decommissioning programme to be agreed with the Secretary of State prior to the commencement of the offshore works and replicates the wording used on consents for offshore wind farms granted under the Electricity Act 1989 (and now the 2008 Act) following the relevant provisions of the Energy Act 2004 coming into force.

Requirement 15 (*Stages of authorised development onshore*) requires

confirmation of whether the onshore works will be constructed in a single operation to pull the cables through the ducts and construct the onshore project substation, or whether the onshore works will be constructed in two phases of two separate operations to pull the cables through the ducts and two separate onshore project substation construction operations. This will be dependent upon the number of offshore phases.

Requirement 15 also requires confirmation of whether the undertaker will commence Scenario 1 or Scenario 2. This will give the relevant planning authorities notice of the intended Scenario, which will then be captured in the written scheme setting out all the stages of the onshore transmission works before commencement of any onshore works.

Requirement 16 (*Detailed design parameters onshore*) requires approval of details of the proposed works at the onshore project substation, for the extension to the National Grid substation at Necton and, in the event of Scenario 2, the overhead line replacement works by the relevant planning authority. It specifies parameters in terms of the maximum size of the equipment and buildings for the onshore project substation and the National Grid extension works and (in the event of scenario 2) the maximum height of the overhead line replacement pylons.

In addition, in the event of scenario 2, this requirement commits the Applicant to use trenchless installation techniques to install the ducts in the locations specified in the Requirement including at certain rivers and wildlife sites. Taken together these restrictions ensure that the impact of the onshore works is minimised in line with the assessment and commitments contained in the Application.

Finally the requirement commits the undertaker to only installing a maximum of two ducts at the landfall.

Requirement 17 (*Landfall method statement*) requires approval of a method statement for the construction of the works at the landfall. It specifies that the method statement must include measures for horizontal directional drilling below the coastal shore platform and cliff base at the landfall. This commitment ensures that the impact of the landfall works is minimised in line with the assessment and commitments contained in the Application.

The Requirement also stipulates the need for ongoing inspection of the cables at the landfall and reporting of results to North Norfolk District Council, in consultation with Natural England, during the operation of the authorised project. In the event of cable exposure throughout the operation of the Project, the Applicant must submit proposals to North Norfolk District Council (in consultation with Natural England (referred to as the statutory nature conservation body within the DCO)) for remedial measures to protect the cables at the landfall. This commitment ensures that the impact of the landfall works is minimised in line with the assessment and commitments contained in the Application.

Requirement 18 (*Provision of landscaping*) provides that the relevant stage of the transmission works shall not commence until a landscaping management scheme for that stage (which accords with the outline landscape and ecological management strategy) has been submitted and approved by the relevant planning authority. The scheme must be implemented as approved.

Requirement 19 (*Implementation and maintenance of landscaping*) requires the undertaker to implement the approved landscaping management schemes and to replace trees or shrubs which die along the cable route within five years of planting.

Requirement 20 (*Code of construction practice*) provides that the relevant stage of the transmission works must not commence until a code of construction practice for that stage (which accords with the outline code of construction practice) has been submitted and approved by the relevant planning authority in consultation with Norfolk County Council, the Environment Agency and the relevant statutory conservation body (Natural England). The code must be implemented as approved. The code includes details on matters such as fencing, external lighting and control of artificial light, contaminated land and groundwater, construction noise and vibration and surface water and drainage.

As with the other plans secured pursuant to the Requirements, the Outline Code of Construction Plan currently includes the detail of the practices applicable under each Scenario. This detail will be refined further prior to commencement of development as, at that stage, the Applicant will know whether Scenario 1 or Scenario 2 will be commenced.

Requirement 21 (*Traffic*) requires that the relevant stage of the transmission works shall not commence until a traffic management plan (in accordance with the outline traffic management plan), a travel plan (in accordance with the outline travel plan) and an access management plan (in accordance with the outline access management plan) for that stage have been submitted to and approved by the relevant highway authority. The plans must be implemented on commencement of the relevant stage of transmission works.

Requirement 22 (*Highway accesses*) requires that the access management plan submitted for approval under requirement 22 (*traffic*) includes details of any permanent or temporary means of access to a highway, or any alteration to an existing means of access, by the relevant planning authority in consultation with the relevant highway authority.

Requirement 23 (*Archaeological written scheme of investigation*) requires that the relevant stage of the transmission works shall not commence until an archaeological written scheme of investigation for that stage (which accords with the outline written scheme of investigation (onshore)) has been submitted to and approved by the

relevant planning authority, following consultation with Historic England and Norfolk County Council. Construction works must be undertaken in accordance with the approved scheme.

Requirement 24 (*Ecological management plan*) requires that the relevant stage of the transmission works shall not commence until an ecological management plan for that stage (which accords with the outline landscape and ecological management strategy as appropriate for that stage) has been approved by the relevant planning authority, following consultation with Norfolk County Council, the Environment Agency, relevant drainage authorities (as defined), and Natural England. Construction works must be undertaken in accordance with the approved scheme. The Requirement also notes that construction works within 5km of the Broadland Special Protection Area and Ramsar site must be carried out in accordance with specific onshore ornithology mitigation contained in the outline landscape and ecological management strategy, which mitigation must be incorporated into the ecological management plan.

Requirement 25 (*Watercourse crossings*) requires that no stage of the transmission works involving crossing or diverting of a main river or watercourse shall commence until a scheme and programme for that crossing, diversion and subsequent reinstatement has been approved by the relevant planning authority, following consultation with Natural England. Works to cross, divert and then reinstate the main river or watercourse must then be undertaken in accordance with the approved scheme and programme. During construction, all ditches, watercourses, field drainage systems and culverts are to be maintained to ensure that the flow of water and drainage are not impaired.

Requirement 26 (*Construction hours*) provides for construction hours for the transmission works on specified days, with none on Sundays or bank holidays. However, the requirement does allow certain continuous operations, such as construction works at the landfall to be undertaken outside of these times, although the exact duration and timing of the works must first be agreed with the relevant planning authority. Emergency works and non-intrusive works (such as start-up and shut down operations) can be carried out outside of the times specified without further approval.

Requirement 27 (*Control of noise during operational phase*) limits the noise rating levels during operation of the onshore project substation, and requires a scheme for monitoring compliance with the noise rating levels to be submitted to and approved by the relevant planning authority.

Requirement 28 (*European protected species onshore*) provides that no stage of the transmission works shall be commenced until a final pre-construction survey has been carried out for that stage to establish whether there are any European protected species present, or likely to be affected by the works. If so the requirement provides that the relevant stage of the works shall not commence until a scheme for

protection and mitigation has been approved, which shall be implemented as approved.

Requirement 29 (*Onshore decommissioning*) provides that within six months of the permanent cessation of commercial operation of the onshore transmission works, an onshore decommissioning plan must be submitted to the relevant planning authority for approval. The plan must then be implemented as approved. The undertaker is also required to notify the relevant planning authority within 28 days of permanent cessation.

Requirement 30 (*Requirement for written approval*) provides that where any requirement requires the approval of the Secretary of State or the relevant planning authority such approval shall be in writing.

Requirement 31 (*Amendments to approved details*) provides that any details approved pursuant to any requirement shall be taken to include any amended details which are subsequently approved, provided that any amendments to or deviations from the approved details are in accordance with the principles set out in the Environmental Statement.

Requirement 32 (*Operational drainage plan*) provides that the works at the onshore project substation and the Necton National Grid substation extension must not commence until a written plan for the drainage during operation has been submitted to and approved by the relevant planning authority after consultation with Norfolk County Council and the Environment Agency.

Requirement 33 (*Skills and employment strategy*) provides that, in the event of Scenario 2, prior to commencement of the onshore transmission works, a skills and employment strategy must be submitted to and approved by Norfolk County Council, after consultation with North Norfolk District Council, Broadland District Council, Breckland District Council, Norfolk County Council and the New Anglia Local Enterprise Partnership.

This plan is only required in the event of Scenario 2 as the undertaker under the Norfolk Vanguard Order will have provided a strategy to account for the effects of both Norfolk Vanguard and Norfolk Boreas prior to commencement of the Norfolk Vanguard Order. This same requirement is proposed to be secured pursuant to Requirement 33 of the Norfolk Vanguard draft DCO.

Requirement 34 (*Cromer Primary Surveillance Radar*) has been included to secure appropriate mitigation to prevent or remove any adverse effects which the operation of the authorised development will have on NATS' ability to provide safe and efficient air traffic services/operation. This wording has been agreed as part of the Norfolk Vanguard DCO examination.

Requirement 35 (*Reuse of temporary works in the event of scenario 1*) provides that temporary works carried out pursuant to the Norfolk Vanguard Offshore Wind Farm may be reused under Scenario 1

provided that a scheme for their re-use has been submitted and approved by the relevant planning authority.

- Schedule 2* (*Streets subject to street works*) sets out those streets which are to be the subject of street works – part 1 in the event of Scenario 1, and part 2 in the event of Scenario 2.
- Schedule 3* (*Public rights of way to be temporarily stopped up*) sets out those public rights of way which are to be temporarily stopped up – part 1 in the event of Scenario 1, and part 2 in the event of Scenario 2.
- Schedule 4* (*Streets to be stopped up*) sets out those streets which are to be temporarily stopped up, altered or diverted (part 1 in the event of Scenario 1, and part 2 in the event of Scenario 2) and sets out the private access track which is to be permanently stopped up under Scenario 1 (part 3).
- Schedule 5* (*Access to works*) sets out details of access points to the Works– part 1 in the event of Scenario 1, and part 2 in the event of Scenario 2.
- Schedule 6* (*Land in which only new rights etc may be acquired*) sets out details of such land over which new rights may be acquired (part 1 in the event of Scenario 1, and part 2 in the event of Scenario 2). It sets out the purposes for acquisition of new rights over specified plots. In accordance with the Guidance issued by the Secretary of State, it specifies rights that apply to the relevant plots set out in the Book of Reference, and also details, where relevant, the restrictive covenants that apply to the relevant plots to protect the installed cables.
- Schedule 7* (*Modification of compensation and compulsory purchase enactments for creation of new rights*) sets out changes to the operation of the legislation relating to compulsory purchase, principally the material detriment provisions contained in Section A of the Compulsory Purchase Act 1965.
- Schedule 8* (*Land of which temporary possession may be taken*) sets out details of such land that may be occupied under temporary powers – part 1 in the event of Scenario 1, and part 2 in the event of Scenario 2.
- Schedule 9* (*Deemed licence under the 2009 Act – generation assets (licence 1 – phase 1)*) sets out the deemed licence for phase 1 of the generation assets within the authorised project.

Standard provisions and structure for deemed marine licences have been developed and included within Orders granted under the 2008 Act. The draft deemed licences comprise two generation licences and two transmission licences within this Order and have been developed by the Applicant in discussion with the MMO, Maritime and Coastguard Agency and Trinity House.

The licences are deliberately drafted to be standalone documents. This

reflects the fact that they will have a wide distribution to contractors and agents, being an audience that may be confused by cross references to the main Order. Also, they are documents which, based on past experience, are likely to be varied from time to time. Such variations will be much easier to follow if the licences have been prepared on a standalone basis. As a result, there is intentional repetition from the main Order of various definitions and the description of the authorised works. Where definitions from the main Order are not included, this is because such definitions only relate to the onshore transmission works and are therefore not relevant for the licences.

Unless otherwise stated, the provisions below relate to all of the deemed marine licences, although condition numbering varies between the deemed marine licences for the generation assets and transmission assets. A table which compares the numbering across the generation, transmission and project interconnector licences is included at Schedule 2 for ease of reference.

Part 1 – Interpretation

Paragraphs 1-4 (*Interpretation*) provides interpretation of certain words and phrases used in the licence and contact details for key organisations relevant to the content of the licence. Many of the definitions (including the different types of foundations and other structures such as wind turbine generators and the meteorological masts) are identical to those used in the main Order.

Part 2 – Licensed Marine Activities – General

Paragraph 1 confirms that the deemed marine licence shall remain in force until the scheme has been decommissioned.

Paragraph 2 confirms that section 72(7) (*Variation, suspension, revocation and transfer*) of the 2009 Act is dis-applied in relation to transfer of the deemed marine licences. Section 72(7) permits the licensing authority to transfer a marine licence to another person. Section 72(8) provides that "*a licence may not be transferred except in accordance with subsection 7*". Article 6 (*Benefit of the Order*) however provides for the transfer to take place in a different way to section 72(7). Since Article 6 is different from the precise wording of section 72(7) of the 2009 Act it is necessary to dis-apply section 72(7) in those limited circumstances to enable Article 6 to operate. Without such a disapplication, Article 6 might be claimed to be inoperative because of adopting a different wording from section 72(7).

Paragraph 3 confirms that where any condition requires the licensed activities be carried out in accordance with the plans, protocols or statements approved under the licence, the approved details, plan or scheme are taken to include any amendments that may subsequently be approved by the MMO.

Paragraph 4 notes that any amendments to approved details must fall

within what has been assessed in the Environmental Statement.

Paragraph 5 sets out the substances or articles authorised for deposit at sea.

Paragraph 6 sets out the grid coordinates for those works within the deemed marine licence.

Part 3 – Details of Licensed Marine Activities

Paragraphs 1-2 specify the licensable marine activities which are authorised by the licence in connection with the construction and operation of the generating station (generation assets licences), offshore associated development (transmission assets) and project interconnector (project interconnector assets). The section deliberately repeats in full the description of the relevant works from Part 1 of Schedule 1. Reference is also included to disposal of material as a result of preparation works for construction of the generating station and associated development (as appropriate).

Part 4 – Conditions

Conditions 1 to 7 (*Design parameters*) repeat the design parameters from requirements 2 to 10 of Part 3 of Schedule 1. This has the effect of putting beyond doubt the fact that when considering approvals under the licence, the details of proposed works must comply with these constraints under the deemed marine licence as well as under the Order.

Condition 8 (*Phasing of the authorised scheme*) restates the maximum numbers of wind turbines and other infrastructure for the authorised scheme. The maximum parameters listed must be taken together with the works authorised pursuant to the phase 2 licence (if relevant). For instance, if the scheme is developed in two phases then the maximum parameters will need to be split (albeit not necessarily evenly) across both phases. It also requires the undertaker to notify the MMO regarding whether the authorised scheme will be constructed in one or two offshore phases, together with a notification provision as to whether Scenario 1 or Scenario 2 will be commenced.

Condition 9 (*Notifications and inspections*) provides for a system of supplying copies of the licence to agents and contractors, restricting the use of contractors and vessels to those notified to the MMO, and publicising commencement and progress of the licensed activities.

Conditions 10-11 (*Aids to navigation and Colouring of Structures*) provide for various matters to aid navigation in the vicinity of the authorised scheme, including the provision of various navigation aids and notices to mariners; the ongoing availability of the aids to navigation; notification of the progress of works to Trinity House and the MMO and the colouring of structures. These are all standard provisions from previous Electricity Act consents for offshore wind farms and have been incorporated into recently granted Orders under the 2008 Act.

Condition 12 (*Chemicals, drilling and debris*) restricts the use of chemicals and other substances and provides for the disposal of certain drilling arisings and the monitoring of construction materials so as to identify those which may accidentally fall into the sea, which shall then be investigated and, where identified, recovered. The undertaker must inform the MMO of the location and quantities of material disposed of under the licence and, in the event that no activities have taken place during the reporting period, the undertaker must provide a null (0) return to the MMO.

Condition 13 (*Force majeure*) provides for the notification of deposits made in an emergency.

Condition 14 (*Pre-construction plans and documentation*) provides for the submission for approval, before the commencement of licensed activities, of a plan showing the proposed location, dimensions and choice of foundation of all elements of the authorised scheme to ensure that the licensed activities conform with the description of Work No. 1 and the design parameters in conditions 1 to 7. It also provides for submission for approval of a construction programme and monitoring plan, a construction method statement, a project environmental management plan (including a fisheries liaison and co-existence plan), a scour protection and cable protection plan, a marine mammal mitigation protocol (in the event that piled foundations are proposed), a cable specification, installation and monitoring plan, an archaeological written scheme of investigation, a mitigation scheme for habitats of principal importance, an offshore operations and maintenance plan, an aids to navigation management plan, an ornithological monitoring plan and a site integrity plan. It also stipulates the maximum amount of hammer energy that can be used in the event that driven or part-driven pile foundations are used.

Condition 15 requires any archaeological reports produced in accordance with Condition 14 to be agreed with the MMO in consultation with Historic England. It also requires each of the documents for approval under Condition 14 to be submitted for approval at least 4 months prior to the intended start of construction. An appeal mechanism is also included in the event that the MMO refuse or do not determine an application for approval within 4 months of receipt of the application. This approach has been included in the final draft of the Norfolk Vanguard DCO and the final draft of the Hornsea Project Three DCO.

Finally, it states that no part of the authorised scheme may commence until the MMO has confirmed that the undertaker has taken into account and adequately addressed MCA recommendations as appropriate contained within MGN543.

Condition 16 (*Post-construction plans and documents*) requires a swath bathymetric survey to be undertaken in the areas where construction works were carried out and for the data and survey reports to be

provided to the MMO, the MCA and UKHO.

Condition 17 (*Reporting of engaged agents, contractors and vessels*) requires the undertaker to provide to the MMO details of agents and contractors engaged to carry out the licensed activities, and a weekly update as to which vessels are being used during construction.

Condition 18 (*Pre-construction monitoring*) specifies the manner in which the undertaker must discharge its obligation under Condition 14 to put forward proposals for pre-construction surveys/monitoring, and provides an indicative list of the expected pre-construction surveys.

Condition 19 (*Construction monitoring*) specifies the manner in which the undertaker must discharge its obligation under Condition 14 to put forward proposals for construction surveys/monitoring, and specifically requires certain noise monitoring. It provides for the MMO to require further noise monitoring depending on the results; the Applicant must cease piling activities if the noise assessments show significantly different impacts to those assessed in the ES until an update to the marine mammal mitigation protocol has been agreed with the MMO (in consultation with Natural England).

Condition 20 (*Post construction*) specifies the manner in which the undertaker shall discharge its obligation under Condition 14 to put forward proposals for post-construction surveys/monitoring, and provides an indicative list of the expected post-construction surveys. The transmission licences do not require construction monitoring to include marine traffic monitoring or ornithological monitoring.

Condition 21 (*Reporting of impact pile driving*) provides that the undertaker must provide information of the expected location, start and end dates of impact pile driving to the MMO.

Condition 22 (*Reporting of cable protection*) requires details of the location and volumes of cable protection used to be set out in a report to be sent to the MMO and relevant statutory nature conservation bodies within four months following completion of construction.

Part 5 – Procedure for Appeals

Paragraphs 1 to 2 set out the process for appeal in the event that the MMO refuses, or fails to determine within the timeframes, a plan or document submitted to it in accordance with condition 15.

Schedule 10

(Deemed licence under the 2009 Act – generation assets (licence 2 – phase 2))

This deemed marine licence relates to phase 2 of the generation assets only and its provisions duplicate the generation assets deemed marine licence at Schedule 9 of the draft Order save that some of the notification conditions – for instance the notification under Condition 9 governing which scenario the undertaker will be commencing – are not relevant for Phase 2 as they will have already been carried out under

the Phase 1 licence.

Schedule 11 (Deemed licence under the 2009 Act – transmission assets (licence 1 – phase 1))

This deemed marine licence relates to phase 1 of the transmission assets only and its provisions largely duplicate the generation assets deemed marine licence at Schedule 9 of the draft Order. However, in addition to the plans listed for approval in Schedule 9, Schedule 11 also requires submission and approval of a site integrity plan in respect of the Haisborough, Hammond and Winterton Special Area of Conservation. Schedule 11 also includes an additional condition (condition 19) which secures mitigation for red throated diver during cable installation in the January - March period.

As the cable corridor for the Project overlaps with the Norfolk Vanguard Order limits, Condition 18 (Coordination with Norfolk Vanguard) is also included in the transmission asset DMLs to require the undertaker to provide a copy of plans submitted under the DMLs to the undertaker of the Norfolk Vanguard offshore wind farm. Both parties must also participate in liaison meetings with the MMO to consider matters relating to the efficient operation of the offshore element of the authorised project. This condition has precedent in the East Anglia Three Offshore Wind Farm Order 2017. It should be noted that no co-operation condition is included in the generation asset DMLs because the Norfolk Boreas array area does not overlap with the Norfolk Vanguard Order limits.

Schedule 12 (Deemed licence under the 2009 Act– transmission assets (licence 2 – phase 2))

This deemed marine licence relates to phase 2 of the transmission assets only and its provisions largely duplicate the transmission assets deemed marine licence at Schedule 11 of the Order save that some of the notification conditions – for instance the notification under Condition 4 governing which Scenario the undertaker will be commencing – are not relevant for Phase 2 as they will have already been carried out under the Phase 1 licence.

Schedule 13 Deemed Licence under the 2009 Act – Project Interconnector assets (Licence 1 – Scenario 1)

This deemed marine licence relates to the project interconnector assets in the event of Scenario 1 only and its provisions largely duplicate the transmission assets deemed marine licence at Schedule 11 of the Order save that certain conditions in relation to shipping and navigation are not required in this DML given that the infrastructure will only consist of underground cables. This is different from the approach in Schedules 9-12, which all contain infrastructure above sea level such as the wind turbine generators and the offshore electric platform(s).

Similar to the transmission asset DMLs, the project interconnector

assets of the Project overlap with the Norfolk Vanguard Order limits, and for that reason a co-operation condition (similar to that contained in the transmission asset DMLs) has been included at Condition 15.

Schedule 14 (*Hedgerows*) sets out those potentially important hedgerows; important hedgerows; and hedgerows to be removed under each scenario.

Schedule 15 (*Arbitration rules*) sets out further details of the arbitration process. The exact wording in Schedule 15 is not found in any previously made development consent orders, but the applicant considers that it is important to provide a robust process within which substantive differences between the parties can be resolved. The intention is to achieve a fair, impartial and binding award on substantive differences between the parties; these changes have been made to provide a more bespoke and relevant arbitration process for a project of this nature - for instance, the intention is to receive determination within 4 months from the date the arbitrator is first appointed, which allows disputes to be resolved quickly. With the wider context, as exemplified in the National Policy Statements, surrounding the need for new power projects, it is necessary that disputes are resolved promptly to enable the Authorised Project to be delivered in as timely a manner as possible.

Schedule 15 refers to the person who commenced the arbitration as the Claimant and the other party as the Respondent.

The timetable for the process is as follows:

(a) Within 14 days of the Arbitrator being appointed the Claimant shall serve on the Respondent and the Arbitrator a statement of case and all supporting evidence to support the claim.

(b) Within 14 days of receipt of the Claimant's statement of case and supporting evidence the Respondent will serve a statement of defence and all supporting evidence to support its defence, together with any objections to the Claimant's documentation.

(c) Within 7 days of receipt of the Respondent's documentation the Claimant may make a Statement of Reply.

The costs of the arbitration will be awarded by the arbitrator and the principle that costs will follow the event will be adopted. Costs will include the arbitrator's costs together with the reasonable legal fees and other costs incurred by the other party.

Schedule 16 (*Procedure for discharge of requirements*) sets out the process to be followed in relation to applications made to a discharging authority for any agreement or approval required by a requirement in the Order.

Schedule 17 (*Protective provisions*) sets out protective provisions for statutory undertakers affected by the authorised development. The protective provisions are for the benefit of general gas, electricity, water and sewerage undertakers affected by the authorised development (Part 1),

National Grid (Part 2), Cadent Gas (Part 3), Operators of Electronic Communications Code Networks (Part 4), Network Rail (Part 5), and Anglian Water (Part 6). The Environment Agency and drainage authorities also have the benefit of protective provisions at Part 7 as a result of the disapplication of certain legislative provisions (*Article 7 - Application and modification of legislative provisions*) in relation to works within watercourses. Ørsted Hornsea Project Three (UK) Ltd will have the benefit of protective measures at Part 8 and Norfolk Vanguard Limited have the benefit of protective provisions at Part 9.

Schedule 1

Table of comparison with the Model Provisions and other DCOs

Article in the draft DCO	Similarity to General Model Provisions (Article number in the Model Provisions)	Precedence in other DCOs
1 Citation and commencement	No	Yes – The East Anglia THREE Offshore Wind Farm Order 2017
2 Interpretation	1 – Yes, but with project specific differences (the Model provision has citation, commencement and interpretation included all under article 1).	Some similarities with The East Anglia THREE Offshore Wind Farm Order 2017, however with necessary project specific definitions
3 Development consent etc. granted by the Order	2 – Yes, but with necessary project specific differences to make clear the distinction between the offshore Order limits and the onshore Order limits and their associated work packages.	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order.
4 Limits of deviation	6 – Yes (Model Provisions for Railways). This adopts the approach used for limits of deviation in relation to the overhead line replacement works	Yes – The National Grid (Hinkley Point C Connection Project) Order 2016 and The National Grid (Richborough Connection Project) Order 2017 and the draft Norfolk Vanguard Order (in the event of Scenario 1).
5 Power to construct and maintain authorised project	3 - Yes	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order.
6 Benefit of the Order	4 and 5 – Yes, but with necessary project specific differences added to address the position in relation to the Deemed Marine Licences and to make clear where the Secretary of State's (SoS) consent may not be necessary or required (for instance, where	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and, in part with regards to the process for the SoS consent, the draft Hornsea Project Three Offshore Wind Farm Order and the draft Norfolk Vanguard Order.

Article in the draft DCO	Similarity to General Model Provisions (Article number in the Model Provisions)	Precedence in other DCOs
	the transferee or lessee is a holder of an Electricity Act 1989 licence).	
7 Application and modification of legislative provisions	6 – Yes, but with necessary project specific differences in relation to the Neighbourhood Planning Act 2017 and land and drainage consents.	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 in relation to the Hedgerow Regulations 1997, and The Triton Knoll Electrical System Order 2016 and the draft Norfolk Vanguard Order in relation to Land Drainage Consents and consents under the Water Resources Act 1991
8 Defence to proceedings in respect of statutory nuisance	7 – Yes. The article is drafted partially based on the model provision and partially based on the East Anglia THREE Offshore Wind Farm Order 2017.	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order.
9 Street works	8 - Yes	Yes – in part on The East Anglia ONE Offshore Wind Farm Order 2014, but more recently (and more closely) on The National Grid (Richborough Connection Project) Order 2017 and the draft Norfolk Vanguard Order.
10 Public rights of way	10 – This article is not a model provision, but the concept has precedence from the East Anglia Three Offshore Wind Farm Order 2017.	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order.
11 Stopping up of streets	11 – Yes, the model provision has been adapted slightly based on a combination of the East Anglia THREE Order and Hornsea Offshore Wind Farm (Project Two)	Yes - The East Anglia THREE Offshore Wind Farm Order 2017 and The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order and, in relation to the permanent stopping up of streets, the Highways England M20 Junction 10a Order 2017.
12 Access to works	12 – Yes, the model provision has been adapted slightly based on additions made	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and The Hornsea Two Offshore

Article in the draft DCO	Similarity to General Model Provisions (Article number in the Model Provisions)	Precedence in other DCOs
	through the East Anglia THREE Offshore Wind Farm Order	Wind Farm Order 2016 and the draft Norfolk Vanguard Order
13 Agreements with street authorities	13 - Yes	Yes – The East Anglia THREE Offshore Wind Farm Order 2017, The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
14 Application of the 1991 Act	No, but comparable provisions are commonly included in Transport and Works Act Orders	Yes – The Hornsea One Offshore Wind Farm Order 2014, The Hornsea Two Offshore Wind Farm Order 2016, and the draft Norfolk Vanguard Order
15 Discharge of water and works to watercourses	14 – Yes, this is a modified model provision but with necessary amendments in view of the repeal of s.85 of the Water Resources Act 1991, and project specific differences to alter watercourses linked to requirements within the DCO (requirement 17 and 26)	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 (however not in relation to powers to alter watercourses) and the draft Norfolk Vanguard Order.
16 Authority to survey and investigate the land onshore	16 – Yes but modified for necessary project specific reasons such as restricting trial holes from being made in land forming a railway held by or in right of the Crown without the consent of Network Rail or the Crown respectively	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
17 Removal of human remains	17 – Yes, save that the power applies across the Order limits rather than to a discrete area within the Order limits	Yes - The Knottingley Power Plant Order 2015 and the draft Norfolk Vanguard Order
18 Compulsory acquisition of land	18 – Yes, this article broadly follows the model provisions but with amendments by way of cross-reference to the compulsory acquisition of rights (article 20) and temporary use of land for carrying out the authorised project (article 26)	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order

Article in the draft DCO	Similarity to General Model Provisions (Article number in the Model Provisions)	Precedence in other DCOs
19 Time limit for exercise of authority to acquire land compulsorily	20 - Yes	Yes – various including The East Anglia THREE Offshore Wind Farm Order 2017 and The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
20 Compulsory acquisition of rights	21 – Yes, however with variations from the model provisions to provide flexibility, which is necessary to allow the undertaker to potentially reduce the areas required for freehold acquisition and rely on new, permanent rights instead, where appropriate.	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and similar provisions can be found in Article 19 of The Network Rail (Nuneaton North Chord Order) 2010 and Part 3 of Schedule 6 to The Crossrail Act 2008, and the draft Norfolk Vanguard Order
21 Private rights	22 – Yes	Yes – The East Anglia THREE Offshore Wind Farm Order 2017, The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
22 Application of the Compulsory Purchase (Vesting Declarations) Act 1981	23 – Yes, this article has been updated to reflect the changes brought about by the Housing and Planning Act 2016.	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
23 Application of Part 1 of the Compulsory Purchase Act 1965	No - this article has been added to reflect the changes brought about by the Housing and Planning Act 2016.	Yes – The Wrexham Gas Fired Generating Station Order 2017 and the draft Norfolk Vanguard Order.
24 Acquisition of subsoil or airspace only	24 – Yes, similar provisions can be found in Article 24 of the Model Provisions	Yes – The National Grid (North London Reinforcement Project) Order 2014 and the draft Norfolk Vanguard Order
25 Rights under or over streets	27 - Yes	Yes – various including The East Anglia THREE Offshore Wind Farm Order 2017, The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order

Article in the draft DCO	Similarity to General Model Provisions (Article number in the Model Provisions)	Precedence in other DCOs
26 Temporary use of land for carrying out the authorised project	28 – Amendments due to project specific differences and additions to introduce greater flexibility for the undertaker and to limit the amount of land to be acquired, or over which new rights are acquired, from landowners.	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
27 Temporary use of land for maintaining authorised project	29 – Yes but with modifications based on recent Orders	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
28 Extinguishment of private rights and restrictive covenants relating to apparatus removed from land subject to temporary possession	No – this is project specific in relation to works to overhead lines on land in which National Grid owns apparatus.	Yes - National Grid (Richborough Connection Project) Order 2017 and the draft Norfolk Vanguard Order
29 Statutory undertakers	31 – Yes, but with some amendments in relation to removal of (c) from the Model Provisions	Yes – various including The East Anglia THREE Offshore Wind Farm Order 2017, The Hornsea Two Offshore Wind Farm Order 2016, and the draft Norfolk Vanguard Order
30 Recovery of costs of new connections	33 – Yes	Yes – various including The East Anglia THREE Offshore Wind Farm Order 2017, The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
31 Operation of generating station	No – added due to project specific reasons and required as per section 140 of the 2008 Act and based on recent Orders	Yes – The East Anglia THREE Offshore Wind Farm Order 2017, The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
32 Deemed marine licences under the 2009 Act	No - added due to project specific reasons and as per section 149A of the 2008 Act and based on recent Orders	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and The Hornsea Two Offshore Wind Farm Order 2016 and the

Article in the draft DCO	Similarity to General Model Provisions (Article number in the Model Provisions)	Precedence in other DCOs
		draft Norfolk Vanguard Order
33 Application of landlord and tenant law	35 - Yes	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
34 Operational land for purposes of the 1990 Act	36 - Yes	Yes – various including The East Anglia THREE Offshore Wind Farm Order 2017 and The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
35 Felling or lopping of trees and removal of hedgerows	39 – Yes, the first paragraphs are taken from the model provision; the paragraphs in relation to hedgerows are taken from previous projects including East Anglia THREE Offshore Wind Farm Order 2017	Yes – various including The East Anglia THREE Offshore Wind Farm Order 2017 and The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
36 Trees subject to tree preservation orders	40 – Yes, the article is a model provision save that it will also apply to tree preservation orders made after the last assessment for the Environmental Statement.	Yes – The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
37 Certification of plans etc	41 – Yes, subject to project specific plans.	Yes – similar plans in The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
38 Arbitration	42 – Yes, the concept derives from the Model Provisions but the changes, including the addition of a new schedule, have been made to provide a more bespoke and relevant arbitration process	Yes – the draft Norfolk Vanguard Order
39 Procedure in relation to certain approvals etc	No – but this is necessary for project specific approvals and a similar approach was followed on The Hinkley Point C (Nuclear Generating Station) Order 2013.	Yes – The Hinkley Point C (Nuclear Generating Station) Order 2013 and the draft Norfolk Vanguard Order

Article in the draft DCO	Similarity to General Model Provisions (Article number in the Model Provisions)	Precedence in other DCOs
40 Abatement of works abandoned or decayed	No – but this is required for project specific purposes and supplement the Energy Act 2004	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
41 Saving provisions for Trinity House	53 – Yes (Model Provisions for Harbours). This provision is commonly used for projects of this nature	Yes – various including The East Anglia THREE Offshore Wind Farm Order 2017 and The Hornsea Two Offshore Wind Farm Order 2016 and the draft Norfolk Vanguard Order
42 Crown rights	No - but this provision is project specific and generally reflects section 135 of the 2008 Act	Yes – The National Grid (Hinkley Point C Connection Project) Order 2016 and The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order
43 Protective provisions	Yes, the concept of signposting the protection offered for statutory undertakers is taken from the model provisions	Yes – The East Anglia THREE Offshore Wind Farm Order 2017 and the draft Norfolk Vanguard Order

Schedule 2
Comparison Table of DML Conditions

	Generation Assets DMLs Schedules 9 and 10, Part 4	Transmission Assets DMLs Schedules 11 and 12, Part 4	Project Interconnector Assets DMLs Schedules 13, Part 4
Effect of this license	-	-	1
Design parameters	1(1)(a)-(e)-(2) (wind turbine generator)	1(1)-(2)(a)-(c) (offshore electrical platform)	-
	2(1) (offshore service platform) 2(2)-(3) (meteorological mast)	-	-
	3 (cables)	2 (cables)	2 (cables)
	4(1)(a)-(c), 4(2)(a)-(e), (3) (wind turbine generator foundations)	-	-
	5(1)(a)-(c)-(2) (meteorological mast foundations)	-	-
	6(1)(a)-(b)-(2) (offshore service platform foundations)	-	-
	7(1)-(3) (measurement buoys)	-	-
Phasing of the authorised scheme	8(1)(a)-(j)-(2)(a) (Additional paragraphs cover additional generation assets (wind turbine generators, offshore service platform, meteorological masts, measurement buoys and scour protection for the same).	3(1)(a)-(e)- (2)(a) (Phasing relates only to offshore electrical platforms.)	-

Notifications and inspections	9(1)-(12) (in respect of Work No. 1)	4(1)-(12) (in respect of Work No.2. A second notice is also required advising of the start date for Work No.s 3A, 4A and 4B and route of the sub-sea cables and fibre optic cables)	3(1) – (11) (in respect of Work No. 3B. A second notice is also required advising of the start date for Work No. 3B and route of the sub-sea cables and fibre optic cables)
Aids to navigation	10(1)-(5)	5(1)-(5)	4 (1)-(5)
Colouring of structures	11(1)-(2)	6(1)-(2)	-
Chemicals, drilling and debris	12(1)-(10) (Condition 12(1) also includes chemical agents placed within any monopile void)	7(1)-(11) (Additional condition 7(8) relates to obstructions resulting from Work No.s 4A or 4B)	-
Force majeure	13(1)-(2)	8(1)-(2)	6(1) - (2)
Pre-construction plans and documents	14(1)(a)-(m) (Condition 14(1)(c)(iii) requires a construction method statement; Condition 14(1)(l) requires an ornithological monitoring plan. Condition 14(1)(m) requires a site integrity plan in the event that piled foundations are proposed to be used.)	9(1)(a)-(m) (Condition 9(1)(g)(iv) requires the cable specification, installation and monitoring plan to include methods of trawl or drift net for Work No.s 4A and 4B. Condition 14(1)(h) also includes North Norfolk District Council to be consulted, if relevant, for the archaeological written scheme of investigation (offshore). Condition 14(1)(m) requires a site integrity plan to secure the mitigation associated with the Haisborough Hammond and Winterton SAC.)	7(1)(a) – (j)

	14(2)	9(2)	2(2)
	15(1)-(8)	10(1)-(8)	8(1)-(7)
Post construction plans and documents	16	11	9
Reporting of engaged agents, contractors and vessels	17(1)-(2)	12(1)	10(1)
Pre-construction monitoring and surveys	18(1)-(3) (Condition 18(2)(c) requires pre-construction surveys to have regard to ornithological monitoring required by the ornithological monitoring plan.)	13(1)-(3)	11(1)-(3)
Construction monitoring	19(1)-(5) (Additional condition 19 (4) relates to traffic monitoring.)	14(1)-(4)	12(1)-(2)
Post construction	20(1)-(4) (Additional condition 20(2)(c) relates to ornithological monitoring and 20(2)(d) relates to traffic monitoring.)	15(1)-(4)	13(1)-(4)
Reporting of impact pile	21(1)-(3)	16(1)-(3)	-

driving			
Reporting of cable protection	22(1)-(2)	17(1)-(2)	14(1)-(2)
Coordination with Norfolk Vanguard Offshore Wind Farm	-	18(1)-(2)	15(1)-(2)

Schedule 3
Norfolk Boreas Offshore Wind Farm
List of Order parameters

Component	Specifications	Parameters	DCO Reference
Structures			
Wind Turbine Generators	Total installed export capacity at the point of connection to the offshore electrical platform(s)	1,800MW	Schedule 1, Part 1, Work No. 1 Schedules 9 & 10, Part 3, paragraph 2 Schedule 9 & 10, Part 4, condition 8
	Maximum number	180	Schedule 1, Part 1, Work No. 1 Schedule 1, Part 3, Requirement 3 Schedules 9 & 10, Part 3, paragraph 2 Schedules 9 & 10, Part 4, condition 8
	Maximum tip height from HAT	350m	Schedule 1, , Part 3, Requirement 2 Schedules 9 & 10, Part 4, condition 1
	Maximum hub height from HAT	198.5m	Schedule 1, Part 3, Requirement 2 Schedules 9 & 10, Part 4, condition 1
	Maximum rotor diameter	303m	Schedule 1, part 3, Requirement 2 Schedules 9 & 10, Part 4, condition 1
	Minimum spacing crosswind	760m	Schedule 1, Part 3, Requirement 2 Schedules 9 & 10, Part 4, condition 1
	Minimum spacing downwind	760m	Schedule 1, Part 3, Requirement 2 Schedules 9 & 10, Part 4, condition 1

Component	Specifications	Parameters	DCO Reference
	Minimum air draft from MHWS	22m	Schedule 1, Part 3, Requirement 2 Schedules 9 & 10, Part 4, condition 1
	Foundation types	Monopile (piled or suction caisson) Jacket (piled or suction caisson) Gravity base Tetrabase (piled or suction caisson)	Schedule 1, Part 1, Work No. 1 Schedules 9 & 10, Part 3, paragraph 2
Offshore Electrical Platform – export capacity of 1,800MW at the point of connection to the offshore electrical platform(s)	Maximum number	2	Schedule 1, Part 1, Work No. 2 Schedule 1, Part 3, Requirement 3 Schedules 11 & 12, Part 3, Work No. 2 Schedules 11 & 12, Part 4, condition 3
	Maximum height from HAT	100m	Schedule 1, Part 3, Requirement 4 Schedules 11 & 12, Part 4, condition 1
	Maximum length	120m	Schedule 1, Part 3, Requirement 4 Schedules 11 & 12, Part 4, condition 1
	Maximum width	80m	Schedule 1, Part 3, Requirement 4 Schedules 11 & 12, Part 4, condition 1
	Foundation types	Jacket (piled or suction caisson) Gravity base	Schedule 1, Part 1, Work No. 2 Schedules 11 & 12, Part 3, paragraph 2
Offshore Service Platform	Maximum number	1	Schedule 1, Part 1, Work No. 1 Schedule 1, Part 3, Requirement 3

Component	Specifications	Parameters	DCO Reference
			Schedules 9 & 10, Part 3, paragraph 2 Schedules 9 & 10, Part 4, condition 8
	Maximum height from HAT	100m	Schedule 1, Part 3, Requirement 4 Schedules 9 & 10, Part 4, condition 2
	Maximum length	90m	Schedule 1, Part 3, Requirement 4 Schedules 9 & 10, Part 4, condition 2
	Maximum width	60m	Schedule 1, Part 3, Requirement 4 Schedules 9 & 10, Part 4, condition 2
	Foundation types	Jacket (piled or suction caisson) Gravity base	Schedule 1, Part 1, Work No. 1 Schedule 1, Part 1, Work No. 2 Schedules 9 & 10, Part 3, paragraph 2
Meteorological Mast	Maximum number	2	Schedule 1, Part 1, Work No. 1 Schedule 1, Part 3, Requirement 3 Schedules 9 & 10, Part 3, paragraph 2 Schedules 9 & 10, Part 4, condition 8
	Maximum height from HAT	200m	Schedule 1, Part 3, Requirement 4
	Foundation types	Monopile (piled or suction caisson) Jacket (piled or suction caisson) Gravity base	Schedule 1, Part 1, Work No. 1 Schedules 9 & 10, Part 3, paragraph 2
Lidar Measurement Buoys	Maximum number	2	Schedule 1, Part 1, Work No. 1

Component	Specifications	Parameters	DCO Reference
			Schedule 1, Part 3, Requirement 3 Schedules 9 & 10, Part 3, paragraph 2 Schedules 9 & 10, Part 4, condition 8
	Foundation types	Monopile (piled) Floating	Schedule 1, Part 1, Work No. 1 Schedules 9 & 10, Part 3, paragraph 2
Wave Measurement Buoys	Maximum number	2	Schedule 1, Part 1, Work No. 1 Schedule 1, Part 3, Requirement 3 Schedules 9 & 10, Part 3, paragraph 2 Schedules 9 & 10, Part 4, condition 8
	Foundation types	Floating	Schedule 1, Part 1, Work No. 1 Schedules 9 & 10, Part 3, paragraph 2
Offshore Cables			
Array Cables	Maximum length	600km	Schedule 1, Part 3, Requirement 5
	Maximum cable protection	400,000m ² 204,000m ³	Schedule 1, Part 3, Requirement 5
Interconnector Cables	Maximum length	90km	Schedule 1, Part 3, Requirement 5
	Maximum cable protection	34,000m ² 17,000m ³	Schedule 1, Part 3, Requirement 5
Export Cables	Maximum length	500km	Schedule 1, Part 3, Requirement 5
	Maximum cable protection	132,086m ² 76,436m ³	Schedule 1, Part 3, Requirement 5
	Maximum number	4	Schedule 1, Part 1, Work No. 4A

Component	Specifications	Parameters	DCO Reference
			Schedule 1, Part 1, Work No. 4B Schedules 11 & 12, Part 3, paragraph 2
Project Interconnector Cables	Maximum length	180km	Schedule 1, Part 3, Requirement 5
	Maximum cable protection	74,000m ² 41,000m ³	Schedule 1, Part 3, Requirement 5
	Maximum number	3	Schedule 1, Part 1, Work No. 3B
Foundations (Wind Turbine Generators)			
Piled Foundation	Maximum number of piles per foundation	4	Schedule 1, Part 3, Requirement 6 Schedules 9 & 10, Part 4, condition 4 Schedules 9 & 10, Part 4, condition 19
	Maximum pile diameter (single pile)	15m	Schedule 1, Part 3, Requirement 6 Schedules 9 & 10, Part 4, condition 4
	Maximum pile diameter (multiple piles)	5m	Schedule 1, Part 3, Requirement 6 Schedules 9 & 10, Part 4, condition 4
All Foundations	Maximum seabed footprint area (excluding scour protection) of single foundation	1,963m ²	Schedule 1, Part 3, Requirement 6 Schedules 9 & 10, Part 4, condition 4
Foundations (Meteorological Mast)			
Piled Foundation	Maximum number of piles	4	Schedule 1, Part 3,

Component	Specifications	Parameters	DCO Reference
			Requirement 7 Schedules 9 & 10, Part 4, condition 5
	Maximum pile diameter (single pile)	10m	Schedule 1, Part 3, Requirement 7 Schedules 9 & 10, Part 4, condition 5
	Maximum pile diameter (multiple piles)	3m	Schedule 1, Part 3, Requirement 7 Schedules 9 & 10, Part 4, condition 5
All Foundations	Maximum seabed footprint area (excluding scour protection)	314m ²	Schedule 1, Part 3, Requirement 7 Schedules 9 & 10, Part 4, condition 5
Foundations (Offshore Electrical Platform)			
Piled Foundation	Maximum number of piles	18	Schedule 1, Part 3, Requirement 8 Schedules 11 & 12, Part 4, condition 1
	Maximum pile diameter (jacket)	5m	Schedule 1, Part 3, Requirement 8 Schedules 11 & 12, Part 4, condition 1
All Foundations	Maximum seabed footprint area (excluding scour protection)	15,000m ²	Schedule 1, Part 3, Requirement 8 Schedules 11 & 12, Part 4, condition 1
Foundations (Offshore Service Platform)			
Piled Foundation	Maximum number of piles	6	Schedule 1, Part 3, Requirement 9 Schedules 9 & 10, Part 4, condition 6
	Maximum pile diameter (jacket)	3m	Schedule 1, Part 3,

Component	Specifications	Parameters	DCO Reference
			Requirement 9 Schedules 9 & 10, Part 4, condition 6
All Foundations	Maximum seabed footprint area (excluding scour protection) per foundation	7,500m ²	Schedule 1, Part 3, Requirement 9 Schedules 9 & 10, Part 4, condition 6
Foundations (Buoys)			
Wave buoy	Maximum seabed footprint area	150m ² per buoy and 300 m ² in total	Schedule 1, Part 3, Requirement 10 Schedules 9 & 10, Part 4, condition 7
Lidar buoy	Maximum pile diameter	10m	Schedule 1, Part 3, Requirement 10 Schedules 9 & 10, Part 4, condition 7
	Maximum seabed footprint area (excluding scour protection)	157m ²	Schedule 1, Part 3, Requirement 10 Schedules 9 & 10, Part 4, condition 7
Total Scour Protection			
Wind turbine generators, Offshore service platform Meteorological masts, offshore electrical platforms and Lidar buoys	Maximum scour protection	5,453,903m ² 27,369,513m ³	Schedule 1, Part 3, Requirement 11
Licensed Marine Activities			
Wind turbine generators	Maximum inert material disposed	1,767,146m ³	Schedules 9 & 10, Part 3, paragraph 1
Offshore service platform	Maximum inert material disposed	37,500 m ³	Schedules 9 & 10, Part 3, paragraph 1
Meteorological masts	Maximum inert material disposed	12,566m ³	Schedules 9 & 10, Part 3, paragraph 1

Component	Specifications	Parameters	DCO Reference
Array cable	Maximum inert material disposed	36,000,000m ³	Schedules 9 & 10, Part 3, paragraph 1
Offshore electrical platforms	Maximum inert material disposed	75,000m ³	Schedules 11 & 12, Part 3, paragraph 1
Interconnector cables	Maximum inert material disposed	3,600,000m ³	Schedules 11 & 12, Part 3, paragraph 1
Project Interconnector cables	Maximum inert material disposed	7,200,000m ³	Schedule 13, Part 3, paragraph 1
Export cables (excluding SAC area)	Maximum inert material disposed	3,100,000m ³	Schedules 11 & 12, Part 3, paragraph 1
Export cables (SAC area)	Maximum inert material disposed	500,000m ³	Schedules 11 & 12, Part 3, paragraph 1
Drill arisings in connection with foundation drilling	Maximum inert material disposed	413,913m ³	Schedules 9 & 10, Part 3, paragraph 1 and Schedules 11 & 12, Part 3, paragraph 1
Onshore Parameters			
Onshore Project Substation	Maximum number of buildings housing the principal electrical equipment	2	Schedule 1, Part 3, Requirement 17
	Maximum height of buildings	19m	Schedule 1, Part 3, Requirement 17
	Maximum height of external electrical equipment	25m	Schedule 1, Part 3, Requirement 17
	Maximum footprint of each building	110m (length) x 70m (width)	Schedule 1, Part 3, Requirement 17
	Maximum fenced compound area (excluding accesses)	250m (length) by 300m (width)	Schedule 1, Part 3, Requirement 17
Extension to the existing Necton National Grid substation	Maximum height of external electrical equipment	15m	Schedule 1, Part 3, Requirement 17
	Maximum fenced compound area (excluding accesses)	135m (length) by 150m	Schedule 1, Part 3,

Component	Specifications	Parameters	DCO Reference
Overhead line replacement pylons(in the event of Scenario 2)	under Scenario 1	(width)	Requirement 17
	Maximum fenced compound area (excluding accesses) under Scenario 2	200m (length) by 150m (width)	Schedule 1, Part 3, Requirement 17
	Maximum height	55m	Schedule 1, Part 3, Requirement 17
Underground cable ducts at the landfall	Maximum number of ducts	2	Schedule 1, Part 3, Requirement 17