The Planning Inspectorate
Yr Arolygiaeth Gynllunio

SCOPING OPINION

Proposed Hornsea Three Offshore Wind Farm

Planning Inspectorate Reference: EN010080

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TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

1 INTRODUCTION 5

BACKGROUND 5
THE SECRETARY OF STATE'S CONSULTATION 6
STRUCTURE OF THE DOCUMENT 7

2 THE PROPOSED DEVELOPMENT 8

INTRODUCTION 8
THE APPLICANT'S INFORMATION 18
THE SECRETARY OF STATE'S COMMENTS 23

3 EIA APPROACH AND TOPIC AREAS 23

INTRODUCTION 23
EU DIRECTIVE 2014/52/EU 24
NATIONAL POLICY STATEMENTS (NPS) 23
ENVIRONMENTAL STATEMENT APPROACH 24
ENVIRONMENTAL STATEMENT STRUCTURE 25
MATTERS TO BE SCOPED IN/OUT 26
TOPIC AREAS 32

4 OTHER INFORMATION 56

APPENDIX 1 – PRESENTATION OF THE ENVIRONMENTAL STATEMENT

APPENDIX 2 – LIST OF CONSULTATION BODIES FORMALLY CONSULTED

APPENDIX 3 – RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

EXECUTIVE SUMMARY

This is the Scoping Opinion (the Opinion) provided by the Secretary of State in respect of the content of the Environmental Statement for Hornsea Project Three Offshore Wind Farm located off the North Norfolk coast.

This report sets out the Secretary of State's Opinion on the basis of the information provided in Dong Energy's ('the Applicant') report entitled Hornsea Project Three Offshore Wind Farm Environmental Impact Assessment Scoping Report ('the Scoping Report'). The Opinion can only reflect the proposals as currently described by the applicant.

The Secretary of State has consulted on the Scoping Report and the responses received have been taken into account in adopting this Opinion. The Secretary of State is satisfied that the topic areas identified in the Scoping Report encompass those matters identified in Schedule 4, Part 1, paragraph 19 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended).

The Secretary of State draws attention both to the general points and those made in respect of each of the specialist topic areas in this Opinion. The main potential issues identified are:

- Adequacy of baseline data,
- Scope of the cumulative effects assessment,
- Effects on benthic ecology,
- Effects on fish and shellfish
- Effects on marine mammals,
- Effects on offshore ornithology,
- Effects on marine archaeology,
- Effects on the seascape and visual resources,
- Effects on onshore ecology and nature conservation and
- Effects on the historic environment.

Matters are not scoped out unless specifically addressed and justified by the Applicant, and confirmed as being scoped out by the Secretary of State.

The Secretary of State notes the potential need to carry out an assessment under The Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations).

1 INTRODUCTION

Background

1.1 On 26 October 2016, the Secretary of State received the Scoping Report submitted by Dong Energy under Regulation 8 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (SI 2263) (as amended) (the EIA Regulations) in order to request a Scoping Opinion for the proposed Hornsea Project Three Offshore Wind Farm ('the proposed development'). This Opinion is made in response to this request and should be read in conjunction with the Applicant's Scoping Report.

1.2 The Applicant has formally provided notification under Regulation 6(1)(b) of the EIA Regulations that it proposes to provide an ES in respect of the proposed development. Therefore, in accordance with Regulation 4(2)(a) of the EIA Regulations, the proposed development is determined to be EIA development.

1.3 The EIA Regulations enable an Applicant, before making an application for an order granting development consent, to ask the Secretary of State to state in writing their formal opinion (a 'Scoping Opinion') on the information to be provided in the environmental statement (ES).

1.4 Before adopting a Scoping Opinion the Secretary of State must take into account:

(a) the specific characteristics of the particular development;

(b) the specific characteristics of the development of the type concerned; and

(c) environmental features likely to be affected by the development'.

(EIA Regulation 8 (9))

1.5 This Opinion sets out what information the Secretary of State considers should be included in the ES for the proposed development. The Opinion has taken account of:

- The EIA Regulations;
- The nature and scale of the proposed development;
- The nature of the receiving environment; and
- Current best practice in the preparation of an ES.

1.6 The Secretary of State has also taken account of the responses received from the statutory consultees (see Appendix 3 of this Opinion). The matters addressed by the Applicant have been carefully considered and use has been made of professional judgement and

experience in order to adopt this Opinion. It should be noted that when it comes to consider the ES, the Secretary of State will take account of relevant legislation and guidelines (as appropriate). The Secretary of State will not be precluded from requiring additional information if it is considered necessary in connection with the ES submitted with that application when considering the application for a development consent order (DCO).

1.7 This Opinion should not be construed as implying that the Secretary of State agrees with the information or comments provided by the Applicant in their request for an opinion from the Secretary of State. In particular, comments from the Secretary of State in this Opinion are without prejudice to any decision taken by the Secretary of State (on submission of the application) that any development identified by the Applicant is necessarily to be treated as part of a nationally significant infrastructure project (NSIP), or associated development, or development that does not require development consent.

1.8 Regulation 8(3) of the EIA Regulations states that a request for a scoping opinion must include:

> *(d) a plan sufficient to identify the land;*
>
> *(e) a brief description of the nature and purpose of the development and of its possible effects on the environment; and*
>
> *(f) such other information or representations as the person making the request may wish to provide or make.*
>
> *(EIA Regulation 8 (3))*

1.9 The Secretary of State considers that this has been provided in the Applicant's Scoping Report.

The Secretary of State's Consultation

1.10 The Secretary of State has a duty under Regulation 8(6) of the EIA Regulations to consult widely before adopting a Scoping Opinion. A full list of the consultation bodies is provided at Appendix 2. The Applicant should note that whilst the Secretary of State's list can inform their consultation, it should not be relied upon for that purpose.

1.11 The list of respondents who replied within the statutory timeframe and whose comments have been taken into account in the preparation of this Opinion is provided at Appendix 2 along with copies of their comments at Appendix 3, to which the Applicant should refer in undertaking the EIA.

1.12 The ES submitted by the Applicant should demonstrate consideration of the points raised by the consultation bodies. It is recommended that a table is provided in the ES summarising the scoping responses

from the consultation bodies and how they are, or are not, addressed in the ES.

1.13 Any consultation responses received after the statutory deadline for receipt of comments will not be taken into account within this Opinion. Late responses will be forwarded to the Applicant and will be made available on the Planning Inspectorate's website. The Applicant should also give due consideration to those comments in carrying out the EIA.

Structure of the Document

1.14 This Opinion is structured as follows:

- **Section 1:** Introduction
- **Section 2:** The proposed development
- **Section 3:** EIA approach and topic areas
- **Section 4:** Other information.

1.15 This Opinion is accompanied by the following Appendices:

- **Appendix 1:** Presentation of the ES
- **Appendix 2:** List of Consultation Bodies formally consulted
- **Appendix 3:** Respondents to consultation and copies of replies.

2 THE PROPOSED DEVELOPMENT

Introduction

2.1 The following is a summary of the information on the proposed development and its site and surroundings prepared by the Applicant and included in their Scoping Report. The information has not been verified and it has been assumed that the information provided reflects the existing knowledge of the proposed development and the potential receptors/resources.

The Applicant's Information

Overview of the proposed development

2.2 Hornsea Project Three Offshore Wind Farm zone lies east of both Hornsea Project One and Hornsea Project Two offshore wind farms (both consented DCO's) (Figure 1.1), approximately 120 km north-east off the coast of Norfolk and approximately 160 km east off the coast of Yorkshire. It covers an area of approximately 696 km^2.

2.3 The proposed development comprises up to 400 wind turbines, producing up to 2400MW, inter-array and export cables and associated onshore developments. The onshore grid connection is located at the existing Norwich Main National Grid substation.

Description of the proposed development

Offshore

2.4 The proposed development consists of:

- Up to 400 wind turbines producing up to 2400 MW. The proposed turbines will have a maximum rotor diameter of 265m, and a maximum rotor tip height of 325m above Lowest Astronomical Tide (LAT). Minimum distance from the water surface will be 34.97m LAT;
- A number of foundation options have been identified, these are explained from paragraph 3.7.10 onwards of the Scoping Report and could consist of; monopole, piled jacket; suction bucket jacket; monosuction bucket; gravity base and floating foundations;
- Offshore export cables – up to six, total length of all cables 1,038 km;
- Offshore transformer substations (OTS) – up to 12 for High Voltage Direct Current (HVDC);
- Offshore converter stations– up to four, HVDC only;

- Offshore High Voltage Alternating Current (HVAC) booster stations – there are three options proposed for the booster stations, which would only be required if HVAC is progressed: surface (up to four), subsea (up to four) and onshore (see below);
- Offshore accommodation platforms – up to three;
- Offshore interconnector cables; and
- Scour protection is likely to be required. The chosen design for scour protection will depend upon matters such as final project design process, ground conditions and scour assessments. The applicant requires a degree of flexibility between the use of rock armouring and mattresses. Maxima for scour protection are set out in Table 3.9 of the Scoping Report; 3,390,000m^2 over the whole wind farm development covering 1.7km^2 of the seabed.

2.5 The proposed development will be seeking consent for flexibility in the transmission type with either HVAC or HVDC proposed. The components required for each transmission type are set out in Table 3.12 of the Scoping Report.

2.6 A location plan is provided at Figure 1.1. This also shows the relationship of the proposed development to the Hornsea One and Hornsea Two wind farms.

2.7 Section 3.7 of the Scoping Report describes the above offshore components of the proposed development in greater detail.

Landfall and onshore

2.8 The onshore elements of the proposed development will be located within north Norfolk and consist of onshore cabling, coming ashore on the coast north of Cromer, between Sheringham and Clay next the Sea, north north-east of Norwich. The proposed underground onshore export cable route (ECR corridor) then follows a route south around Norwich to the west and connecting to the Main National Grid substation south of Norwich. The key onshore components would consist of the following:

- Landfall site to bring ashore the offshore cables and connect to the onshore cables;
- Onshore cabling – up to six export cables requiring up to six trenches;
- Joint bays every 1 – 2.5km along the route;
- Transition jointing bays (TJBs) – up to eight;
- Onshore HVAC booster station (not required for HVDC);
- Onshore substation in proximity to the grid connection location at the existing Norwich Main National Grid substation consisting of

up to five buildings within the site and if HVDC is the chosen transmission, converter equipment will be housed;

- 400kV cables between the new onshore substation and the existing Norwich Main National Grid substation; and
- Temporary construction compounds and access roads.

2.9 Section 3.8 of the Scoping Report describes the above ground onshore components of the proposed development in greater detail.

Description of the application site and surrounding area

Offshore

2.10 The agreement for lease (AfL) from the Crown Estates for Hornsea Project Three is 696km^2, this covers the area where the wind turbines generators, offshore substations and array cables will be sited. The Applicant does not currently have an AfL for the offshore ECR corridor. However, the Applicant has stated their intent to apply for this once the offshore ECR corridor is refined.

2.11 The nearest operational Offshore Wind Farm is Sheringham Shoal, 108.8km from the proposed array area and 1.2km from the offshore ECR corridor search area. The nearest Offshore Wind Farm under Construction is Dudgeon at 87km from the array area and 4.1km from the offshore ECR corridor search area.

2.12 The Scoping Report gives two slightly different ranges for water depth in the array area but the general range appears to be between 30 mLAT to 70 mLAT. The Scoping Report states that 84% of the of the Hornsea Project Three array area is located within the Dogger Deep Water Channel and 16% in the East Midlands Offshore Gas Fields. Whereas 55% of the offshore ECR corridor search area is within the East Midlands Offshore Gas Fields, 15% within the Norfolk Coastal Waters, 26% in the Dogger Deep Water Channel and 3% in East Midlands Coastal Waters.

2.13 Deposits on the seabed across the offshore Hornsea Project Three development area comprise a mix of sand and gravels. According to the Simplified Folk Classification, the predominant sediment type is sand and muddy sand sediments with coarse sediment.

2.14 Sediment contaminants in the array area are noted in the Scoping Report to be below guideline concentrations with the exception of Arsenic, which at different locations was above the guideline concentrations.

2.15 Benthic subtidal and intertidal ecology related international designations include:

- The North Norfolk Sandbanks and Saturn Reef candidate Special Area of Conservation (cSAC) (coincident with the Hornsea Three offshore ECR corridor search area);
- The Wash and North Norfolk Coast Special Area of Conservation (SAC) (coincident with the Hornsea Three offshore ECR corridor search area);
- North Norfolk Coast SAC/Ramsar site (coincident from the Hornsea Three offshore ECR corridor search area);
- Haisborough, Hammond and Winterton Site of Community Importance (SCI) (3km from the Hornsea Three offshore ECR corridor search area); and
- Klavebank SCI (11km from the Hornsea Three offshore ECR corridor search area).

2.16 National designations include:

- North Norfolk Coast Site of Special Scientific Interest (SSSI) (coincident with the Hornsea Three Offshore ECR corridor search area);
- Cromer Shoal Chalk beds Marine Conservation Zone (MCZ) (coincident with the Hornsea Three Offshore ECR corridor search area);
- Markham's Triangle recommended MCZ (rMCZ) (coincident with the Hornsea Three Array Area); and
- Wash Approach rMCZ (10km from the Hornsea Three offshore ECR corridor search area).

2.17 The Humber Estuary SAC/Ramsar site, Humber Estuary SSSI and Markham's Triangle MCZ have been identified in the Scoping Report as being located within the surrounding area and relevant to the project in terms of fish and shellfish ecology.

2.18 Grey seal and harbour seal are both present in the North Sea. In addition to these, six cetacean species are found including; harbour porpoise, bottlenose dolphin, white–beaked dolphin, Atlantic white-sided dolphin, minke whale and killer whale. Grey seal and harbour seal, harbour porpoise, white–beaked dolphin and minke whale are identified specifically as important receptors.

2.19 Relevant designations identified for marine mammals within the Hornsea Project Three search area include the:

- Southern North Sea possible Special Area of Conservation (pSAC);
- The Wash and North Norfolk Coast SAC;

2.20 There are a further 11 internationally designated sites and 21 nationally designated sites for marine mammals in the surrounding cable and array area (Table 8.11 of the Scoping Report).

2.21 The Scoping Report notes that 123 wrecks have been identified in the Hornsea Three proposed offshore ECR corridor search area and six in the array area. The Scoping Report notes that 29 obstructions were found throughout the area, 12 were considered 'dead' (i.e. not seen in repeated surveys) and 17 designated 'live', which should be assumed to be present in or on the seabed at or near positions given. The National Record for Historic Environment (NRHE) notes a further 50 recorded positions within the area of search.

2.22 There are no weather radar stations within 20km of the Hornsea Three offshore area.

2.23 A Coal Mining Report Area is located to the east of the ECR corridor search area, with its north eastern tip overlapping. The nearest disposal site to the ECR corridor search area is Babbage, 68.6km to the west. There are a variety of oil and gas operations in the area including eleven oil and gas licenced blocks and four gas fields that overlap with the Hornsea Three array area. There are also 25 oil and gas licenced blocks that are within the offshore ECR corridor search area search area.

2.24 There is one gas platform within 9 nautical miles (nm) of the array area, eight active gas platforms and one proposed gas platform within the offshore ECR corridor search area.

2.25 There is one sub-sea structure in the proposed cable corridor. There is one suspended well and 13 plugged and abandoned wells. There are 38 completed wells, 10 suspended wells and 66 plugged wells in the offshore ECR cable search area.

2.26 There are no pipelines in the array area and 47 active pipelines in the ECR corridor search area.

Landfall and Onshore

2.27 The coastal landfall site currently extends from Weybourne to West Runton along the north Norfolk coast and will be narrowed down as the project develops. The landfall area consists of a steep shingle beach and 'fronting eroding maritime cliffs'.

2.28 From north to south, the onshore ECR of the proposed development would cross the local authority boundaries of North Norfolk District Council, Broadland District Council, South Norfolk District Council and Norwich City Council. The proposed development is wholly within the local authority jurisdiction of Norfolk County Council.

2.29 The area surrounding the onshore ECR corridor is predominantly rural with the exception of the Norwich conurbation. The Broads National

Park lies to the east and the Norfolk Coast Area of Outstanding Natural Beauty (AONB) to the north and partly within the onshore ECR. The rural area is interspersed with market towns and village settlements. The County town of Norwich sits to the south of the landing point of the onshore ECR corridor, to the east of the onshore ECR area for a majority of its length and to the north at its terminus.

2.30 The onshore ECR corridor passes through the following areas:

- Norfolk Coast AONB;
- Access Land at Upper Sheringham and High Kelling;
- Registered Common Land in a number of rural settlements (set out in Table 12.7 of the ES); and
- Airfields at Felthorpe and Weybourne.

2.31 The Scoping Report references sites that are internationally designated for reasons of ecology:

- River Wensum SAC;
- Norfolk Valley Fens SAC; and
- North Norfolk Coast Special Protection Area (SPA) and Ramsar site

2.32 There are ten sites of national importance for biological features:

- Weybourne Cliffs SSSI;
- North Norfolk Coast SSSI;
- Kelling Heath SSSI;
- Holt Lowes SSSI;
- Edgefield Little Wood SSSI;
- River Wensum SSSI;
- Booton Common SSSI;
- Whitwell Common SSSI;
- Alderford Common SSSI; and
- Swannington Upgate Common SSSI.

2.33 There are also 33 sites of regional importance within the onshore ECR corridor (Table 11.1). The Scoping Report states that preliminary ecological surveys have not yet been undertaken.

2.34 The Scoping Report does not identify designations outside of the onshore ECR corridor in relation to ecology and nature conservation.

2.35 The Scoping Report identifies the following sites of value for geological features within the ECR corridor:

- Weybourne Cliffs SSSI;
- Weybourne Town Pit SSSI;
- Kelling Heath SSSI; and
- Caistor St Edmund Chalk Pit.

2.36 The Scoping Report identifies that the onshore ECR would cross a number of watercourses, including the following rivers:

- Bure (Fluvial);
- Glaven;
- Tas;
- Tiffey;
- Tud;
- Wensum;
- Yare;
- Weybourne;
- Whitewater;
- Mulbarton Reach 1; and
- Mulbarton Reach 2.

2.37 Other watercourses, streams and drains are also present in the onshore ECR corridor. The River Wensum SAC and SSSI is within the onshore ECR corridor and is, along with flood zones, relevant to the project for hydrological and flood risk matters (Table 10.3). The proposed cable corridor contains areas in Flood Zones 1 to 3.

2.38 Table 12.1 notes that there are eight national 'landscape designations' identified within the onshore ECR corridor (Table 12.1). The table identifies a further 22 landscape designations within 12km of the onshore ECR corridor.

2.39 The list of historic environment designations in Table 12.4 includes 20 single or grouped Scheduled Monuments listed in the Scoping Report and a number of listed buildings within the onshore ECR corridor.

2.40 The onshore ECR corridor and substation comprises land classified as Grade 2 through to Grade 4 in accordance with the Agricultural Land Classification (ALC) method. There are number of Public Rights of Way (PRoWs) and cycle routes within the onshore ECR corridor.

2.41 The Scoping Report identifies the Tas Valley Way and Boudicca Way PRoWs as also being present within the onshore ECR corridor along with Sheringham Country Park, the North Norfolk Railway, the Royal Norfolk showground as well as golf courses and country parks.

2.42 The Falkenham to Harwich National Cycle Network, connecting Dover to the Shetland Islands is located in the area of the onshore ECR corridor along with Regional Route 30 Eastern Route and a local route west of Norwich.

2.43 The onshore ECR corridor would potentially cross the Peddars Way and Norfolk Coast Path National Trail and through a section of the England Coast Path as well as other tourist attractions including:

- Sheringham Park;
- The North Norfolk Railway;
- The North Norfolk Showground;
- Sheringham Golf course; and
- A blue flag beach.

2.44 The proposed onshore ECR corridor would cross, pass under or be adjacent to major infrastructure including road and railways.

Proposed access

Offshore

2.46 Access during construction is not described in detail within the Scoping Report e.g. which ports would be used. The Scoping Report is clear at paragraph 3.7.32 that access to the wind farm array is required during operation. This will be achieved by vessels and helicopters to the accommodation platforms.

Onshore

2.47 Access will be required via temporary roads or access tracks for the construction traffic to access the onshore ECR, connecting the compounds and the construction sites to existing roads.

Alternatives

2.48 The Applicant discusses alternatives to the proposed development at Section 4 of the Scoping Report. The array area within the wider Hornsea Zone was identified in response to a number of environmental constraints identified in paragraph 4.2.6 of the Scoping Report. These include shipping, commercial fishing, military installations and practice areas, helicopter main routes, marine infrastructure such as oil and gas installations and cables, protected wrecks, waste disposal and dredging sites, recreational users, designated wildlife sites, fish spawning and nursery areas, geological and metocean information and design considerations.

2.49 The Applicant is currently considering the use of HVAC or HVDC cable connections. Further narrowing down of the proposed cable corridor will take place prior to submission of a DCO application. This will be

carried out by engineering and environmental appraisal as set out in paragraph 4.2.18 of the Scoping Report.

2.50 The potential landfall site was established by using selection criteria as set out in paragraph 4.2.22 of the Scoping Report. The criteria includes topography, designated nature conservation sites and important habitats, Grade 1 agricultural land, land used for defence purposes, residential and industrial areas. These were considered in relation to design and construction requirements. Each constraint was ranked using a traffic light system. The assessment has been described but not included in the Scoping Report.

2.51 In relation to the onshore grid connection site, the Applicant discussed options with National Grid and a connection agreement was signed enabling connection to the Norwich Main National Grid substation. This will require the building of a new HVAC/HVDC substation. The final location of this is not yet determined; however, the Scoping Report sets out that this will be in the identified onshore ECR corridor and as close the Norwich Main National Grid substation as possible. The criteria used to undertake this assessment is set out at paragraph 4.2.11 of the Scoping Report. In addition to the criteria assessment, the Applicant intends to undertake constraints mapping, survey data, stakeholder feedback and informal consultation.

2.52 Should HVAC be chosen as the method of electricity transmission, a booster station may additionally be required. The location for this will be determined through constraints mapping, preliminary surveys, technical feasibility studies, consultation feedback and the consideration of criteria set out in paragraph 4.2.30 of the Scoping Report.

Construction

Offshore

2.53 Offshore construction is due to commence in the second year of the construction period (2022). This will continue for four years with the construction of the wind turbine generators being scheduled for the end of the construction period.

2.54 The Scoping Report sets out that the construction period is likely to be phased; however, the phasing is not described in the Scoping Report. Construction methods are set out in the Scoping Report at Sections 3.7, 3.8 and 3.9.

2.55 The wind turbine and substation foundation structures will use either:

- monopoles;
- mono-suction buckets;
- suction-buckets;

- jacket foundations;
- piled jacket foundations;
- gravity base structures; or
- floating foundations.

2.56 Depending on the method chosen, this will involve piling, drilling, dredging and the use of scour protection. Specialist boats will be required with four being present on site at any one time. Of the four vessels, two will be operating simultaneously.

2.57 The offshore export cables and array cables will be installed using a range of methods:

- trenching;
- dredging;
- jetting;
- ploughing;
- vertical injection;
- rock cutting; and
- scour and/or mattressing may be required in places.

Landfall and Onshore

2.58 The construction programme is set out in Figure 3.12. Onshore construction is set to commence in 2021 and last for approximately 4 years for the substation and two years for the onshore export cables. There is an 18 month overlap between these, bringing the overall construction period to approximately four and half years. This timescale does not include preliminary site preparation.

2.59 The proposed development is anticipated to be constructed in phases, with some overlapping and potentially some gaps between phases. The Scoping Report does not contain any further information regarding the details of the construction programme.

2.60 The Scoping Report identifies open cut trenching and horizontal direction drilling (HDD) as options for the installation of the onshore cables. No construction information is provided for the onshore HVAC booster station, jointing bays, link boxes or the onshore substation.

Operation and maintenance

2.61 Figure 3.12 shows that the operation and maintenance period is not due to commence until 2025. Further detail regarding this phase will be set out in the ES. The Scoping Report notes that the operation and maintenance programme will be finalised once the layout of the array, operation and maintenance onshore base location and

technical specification of the array including turbine type and electrical export cable option is decided. The Scoping Report does not provide detailed information regarding the operation and maintenance stage.

Offshore

2.62 The Scoping Report notes that preventative and corrective works will be required on the array and platforms and hence the need for accommodation platforms.

Onshore

2.63 The operation and maintenance activities required onshore are expected by the Applicant to be largely corrective ones with infrequent on-site inspections. The onshore infrastructure will be monitored remotely and operation and maintenance staff may undertake regular visits to the onshore substation.

Decommissioning

2.64 The decommissioning phase will commence at the cessation of Hornsea Project Three. Further detail regarding this phase will be set out in the ES.

2.65 The Scoping Report sets out that any above ground infrastructure following cessation of the project will be removed. Furthermore, to comply with the Energy Act 2004, a decommissioning plan will be submitted to the relevant Secretary of State prior to construction. This will then be updated through the life of the project.

The Secretary of State's Comments

Description of the application site and surrounding area

2.66 In addition to detailed baseline information to be provided within topic specific chapters of the ES, the Secretary of State would expect the ES to include a section that summarises the site and surroundings. This would identify the context of the proposed development, any relevant designations and sensitive receptors. This section should identify land that could be directly or indirectly affected by the proposed development and any associated auxiliary facilities, landscaping areas and potential off site mitigation or compensation schemes.

2.67 The description should be consistent throughout the ES. The Scoping Report appears to suggest two slightly different ranges of water depth for the array area (26 mLAT to 73mLAT and 30 mLAT to 70 mLAT). This should be clarified in the ES.

2.68 It is important for the Applicant to set out clearly, the position with the Crown Estate regarding the AfL for the array area and offshore ECR.

Description of the proposed development

2.67 The Applicant should ensure that the description of the proposed development that is being applied for is as accurate and firm as possible as this will form the basis of the environmental impact assessment. As the Applicant intends to use a Rochdale Envelope to enable flexibility, it is vital that descriptions are clear, for example, when substations are referred to it should be clear which type is being referred to.

2.68 There are a number of variables within the proposed development and a clear description is important to avoid uncertainty on what the proposed development is and what has been assessed. An example of this is the potential for a number of scenarios relating to transformer/substations within the wind farm array. Furthermore, reference appears to be made in an interchangeable manner between cables and circuits. The description should be consistent within in the ES. It is also unclear why if six export cables are required there should be a need for 8 transition joint bays. This should be clarified in the ES project description.

2.69 It is understood that at this stage in the evolution of the proposed development the description of the proposals and even the location of key components are not yet confirmed. The Applicant should be aware; however, that the description of the development in the ES must be sufficiently certain to meet the requirements of paragraph 17 of Schedule 4 Part 1 of the EIA Regulations and therefore more certainty should be obtained by the time the ES is submitted with the DCO.

2.70 When a draft DCO is submitted, the Applicant should clearly define what elements of the proposed development are integral to the NSIP and which is 'associated development' under the Planning Act 2008 (PA 2008) or is an ancillary matter. Associated development is defined in the Planning Act as development which is associated with the principal development. Guidance on associated development can be found in the DCLG publication 'Planning Act 2008: Guidance on associated development applications for major infrastructure projects'.

2.71 Any proposed works and/or infrastructure required as associated development, or as an ancillary matter, (whether on or off-site) should be assessed as part of an integrated approach to environmental assessment.

2.72 The Secretary of State recommends that the ES should include a clear description of all aspects of the proposed development, at the construction, operation and decommissioning stages, and include:

- Land use requirements, permanent and temporary including the area of the offshore elements;
- Site preparation;
- Construction processes and methods;
- Emissions during construction- water, air and soil pollution, noise, vibration, light, heat, radiation;
- Transport routes, temporary and permanent;
- Maintenance activities including any potential environmental or navigation impacts; and
- Operational requirements including the main characteristics of the production process and the nature and quantity of materials used, as well as waste arisings and their disposal

2.73 The environmental effects of all wastes to be processed and removed from the site should be assessed. The ES will need to identify and describe the control processes and mitigation procedures for storing and transporting waste off site. All waste types should be quantified and classified.

Grid connection

2.73 The connection of a proposed offshore wind farm into the relevant electricity network is an important consideration. The Secretary of State welcomes the intention to include within the proposed DCO application the export cable to shore, the onshore cabling, the converter and collector stations and substations (depending on option chosen) as part of the overall project so that all potential effects can be assessed within the accompanying ES.

2.74 The Secretary of State considers; however, that potential impacts resulting from alternative connection points/cable routes should also be assessed.

2.75 The Secretary of State notes that in the absence of a detailed onshore connection route proposal, a broad indicative corridor has been identified. Such uncertainty over the physical extent of the proposed development makes a robust assessment of its potential effects difficult to undertake.

2.76 The Secretary of State recommends that careful consideration should be given as to how the Applicant meaningfully consults on, and properly assesses, the likely impacts arising from the onshore ECR corridor. It is envisaged that the adoption of a robust iterative EIA approach will result in a more specific cable route being proposed.

Flexibility

2.77 The Applicant's attention is drawn to Advice Note nine 'Using the 'Rochdale Envelope' which is available on the Planning Inspectorate's website and to the 'Flexibility' section in Appendix 1 of this Opinion which provides additional details on the recommended approach.

2.78 As noted above, to limit any confusions regarding assessment, the Applicant should make every attempt to narrow the range of options and explain clearly in the ES which elements of the proposed development have yet to be finalised and provide the reasons. At the time of application, any proposed scheme parameters should not be so wide ranging as to represent effectively different schemes. The scheme parameters will need to be clearly defined in the draft DCO and therefore in the accompanying ES. It is a matter for the Applicant, in preparing an ES, to consider whether it is possible to robustly assess a range of impacts resulting from a large number of undecided parameters. The description of the proposed development in the ES must not be so wide that it is insufficiently certain to comply with requirements of paragraph 17 of Schedule 4 Part 1 of the EIA Regulations.

2.79 It should be noted that if the proposed development changes substantially during the EIA process, prior to application submission, the Applicant may wish to consider the need to request a new scoping opinion.

Proposed access

2.80 Whilst the Scoping Report notes that access will be required for both the onshore and offshore aspects of the proposed development, details of these access routes, types of vehicle and numbers of personnel have not be provided. This will need to be considered and assessed as part of the ES.

Alternatives

2.81 The EIA Regulations require that the Applicant provide 'An outline of the main alternatives studied by the Applicant and an indication of the main reasons for the Applicant's choice, taking into account the environmental effects' (See Appendix 1). The Secretary of State welcomes the statement in the Scoping Report that the ES will contain information on the main alternatives considered and the rationale for the final choices in relation to the onshore and offshore ECR corridors and the landfall site.

Construction

2.83 The Scoping Report refers to the possibility that the construction of Hornsea Three may be split into two or more phases. The ES should provide information on the phasing of the construction. If the

Applicant is seeking flexibility on the phasing of the proposed development then the ES should describe and assess the different scenarios that would be consented under the DCO.

2.84 It is noted that the high-level indicative construction programme does not include preliminary site preparation. It is not clear what the Scoping Report means by preliminary site preparation. The description of construction activities in the ES should clearly define these activities.

2.85 The Secretary of State notes that no information has been provided in the Scoping Report regarding the size and location of construction compounds. Whilst is it appreciated that this information may not be available at this stage in the evolution of the proposed development, Applicants are reminded that this information will be required and should be included in the DCO boundary.

2.86 The Secretary of State considers that information on construction including: phasing of programme; construction methods and activities associated with each phase; siting of construction compounds (including on and off site); lighting equipment/requirements; and number, movements and parking of construction vehicles (both HGVs and staff) should be clearly indicated in the ES.

Operation and maintenance

2.85 Information on the operation and maintenance of the proposed development should be included in the ES and should cover, but not be limited to, such matters as: the number of full/part-time jobs; the operational hours and if appropriate, shift patterns; the number and types of vehicle movements generated during the operational stage.

Decommissioning

2.86 In terms of decommissioning, the Secretary of State acknowledges that the further into the future any assessment is made, the less reliance may be placed on the outcome. However, the purpose of such a long term assessment is to enable the decommissioning of the works to be taken into account in the design and use of materials such that structures can be taken down with the minimum of disruption. The process and methods of decommissioning should be considered and options presented in the ES. The Secretary of State encourages consideration of such matters in the ES.

2.87 The Scoping Opinion notes that it is a condition of the Crown Estate lease for the wind farm site that the proposed development be decommissioned at the end of its operational lifetime. To this end a decommissioning plan will need to be prepared.

2.88 The Scoping Report does not describe the lifespan of the proposed development. The Secretary of State recommends that the EIA

covers the lifespan of the proposed development, including construction, operation and decommissioning.

3 EIA APPROACH AND TOPIC AREAS

Introduction

3.1 This section contains the Secretary of State's specific comments on the approach to the ES and topic areas as set out in the Scoping Report. General advice on the presentation of an ES is provided at Appendix 1 of this Opinion and should be read in conjunction with this Section.

EU Directive 2014/52/EU

3.2 The Secretary of State draws the Applicant's attention to European Union (EU) Directive 2014/52/EU (amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment) which was made in April 2014.

3.3 Under the terms of the 2014/52/EU Directive, Member States are required to bring into force the laws, regulations and administrative provisions necessary to comply with the directive by 16 May 2017.

3.4 Whilst transitional provisions will apply to such new regulations, the Applicant is advised to consider the effect of the implementation of the revised Directive in terms of the production and content of the ES.

3.5 On 23 June 2016, the UK held a referendum and voted to leave the EU. There is no immediate change to infrastructure legislation or policy. Relevant EU directives have been transposed in to UK law and those are unchanged until amended by Parliament.

National Policy Statements (NPS)

3.6 Sector specific NPSs are produced by the relevant Government Sector specific NPS' are produced by the relevant Government Departments and set out national policy for NSIPs. They provide the framework within which the Examining Authority will make their recommendations to the relevant Secretary of State and include the Government's objectives for the development of NSIPs.

3.7 The relevant NPS' for the proposed development are the Overarching NPS for Energy (EN-1), the NPS for Renewable Energy Infrastructure (EN-3) and the NPS for Electricity Networks (EN-5), which set out both the generic and technology-specific impacts that should be considered in the EIA for the proposed development. When undertaking the EIA, the Applicant must have regard to both the generic and technology-specific impacts and identify how these impacts have been assessed in the ES.

3.8 The relevant Secretary of State must have regard to any matter that the Secretary of State thinks is important and relevant to the Secretary of State's decision. This could include the draft NPS, if the relevant NPS has not been formally designated.

Environmental Statement Approach

3.9 The information provided in the Scoping Report sets out the proposed approach to the preparation of the ES. Whilst early engagement on the scope of the ES is to be welcomed, the Secretary of State notes that the level of information provided at this stage is not always sufficient to allow for detailed comments from either the Secretary of State or the consultees.

3.10 The ES should not be a series of separate reports collated into one document, but rather a comprehensive assessment drawing together the environmental impacts of the proposed development. This is particularly important when considering impacts in terms of any permutations or parameters to the proposed development.

3.11 The Secretary of State suggests that the Applicant ensures that appropriate consultation is undertaken with the relevant consultees in order to agree wherever possible the timing and relevance of survey work as well as the methodologies to be used. The Secretary of State notes and welcomes the intention to finalise the scope of investigations in conjunction with ongoing stakeholder liaison and consultation with the relevant regulatory authorities and their advisors.

3.12 The Secretary of State recommends that the physical scope of the study areas should be identified under each of the environmental topics considered and should be sufficiently robust in order to undertake the assessment. The definitions of some of the study areas in the Scoping Report are surprisingly vague and use phrases such as 'an area which has the potential to be affected by the Hornsea Three array area…' without explaining how this area would be identified. The extent of the study areas should be on the basis of recognised professional guidance, whenever such guidance is available. The study areas should also be agreed with the relevant consultees and, where this is not possible, this should be stated clearly in the ES and a reasoned justification given. The scope should also cover the breadth of the topic area and the temporal scope, and these aspects should be described and justified.

3.13 The Secretary of State notes the description of the overall approach to cumulative effect assessment (CEA) in section 5.4 of the Scoping Report and the references to the Planning Inspectorate's advice note seventeen. The Scoping Report states that the 'CEA long list' produced by the Southern North Sea Offshore Wind Forum will be one of the key information sources used to identify projects that could have a cumulative impact with Hornsea Three. It is not clear to the

Secretary of State whether this list covers both onshore and offshore plans and projects. The Applicant is strongly advised to refer to the comments from consultees in Appendix 3 of this Scoping Opinion on the various plans and projects they think should be included in the CEA. The Applicant is advised to seek agreement on the scope of the CEA with the relevant stakeholders wherever possible.

3.14 The Secretary of State recommends that in order to assist the decision making process, the Applicant may wish to consider the use of tables:

(a) to identify and collate the residual impacts after mitigation on the basis of specialist topics, inter-relationships and cumulative impacts;

(b) to demonstrate how the assessment has taken account of this Opinion and other responses to consultation;

(c) to set out the mitigation measures proposed, as well as assisting the reader, the Secretary of State considers that this would also enable the applicant to cross refer mitigation to specific provisions proposed to be included within the draft DCO; and

(d) to cross reference where details in the HRA (where one is provided) such as descriptions of sites and their locations, together with any mitigation or compensation measures, are to be found in the ES.

Environmental Statement Structure

3.15 Although the Scoping Report does not specifically identify a list of the topics that will be covered in the ES, the Scoping Report contains a description of the proposed assessment of effects for the following topics:

- Offshore Physical Environment
  - marine processes
  - subsea noise
  - airborne noise
  - offshore air quality
- Offshore Biological Environment
  - benthic subtidal and intertidal ecology
  - fish and shellfish ecology
  - marine mammals
  - ornithology
- Offshore Human Environment Commercial Fisheries

  - shipping and navigation
  - aviation, military and communications
  - civil and military radar
  - communications
  - marine archaeology
  - seascape and visual resources
  - infrastructure and other users
- Onshore Physical Environment
  - geology and ground conditions
  - hydrology and flood risk
- Onshore Biological Environment
  - ecology and nature conservation
- Onshore Human and Socio-economic Environment
  - landscape and visual resources
  - historic environment
  - land use, agriculture and recreation
  - traffic and transport
  - noise and vibration
  - air quality and health
  - socio-economics

3.16 The Secretary of State recommends that the ES should also include a description of the proposed construction programme and methods.

Matters to be Scoped in/out

3.17 Each of the topic chapters in the Scoping Report contains a table explaining which, if any, effects they are seeking to scope out of further assessment. Table 13.1 of the Scoping Report summarises the full list of effects to be scoped out.

3.18 Matters are not scoped out unless specifically addressed and justified by the Applicant, and confirmed as being scoped out by the Secretary of State.

Airborne noise

3.19 Table 7.5 of the Scoping Report proposes scoping out all airborne noise impacts from activities taking place seaward of the Mean High Water Springs (MHWS) during construction, notably piling. This also applies to decommissioning activities (which would not involve piling). This is on the grounds that the assessments for the Hornsea Two

wind farm predicted negligible effects on receptors and also because Hornsea Three would be even further away from receptors than Hornsea Two.

3.20 The Secretary of State agrees that the characteristics of the receptors in the offshore environment seaward of the MHWS are broadly the same in respect of Hornsea Three and that the construction operation and maintenance will be comparable. On that basis the Secretary of State is content that airborne noise seaward of MHWS can be scoped out of the assessment. However, the proposed cable landfall location for Hornsea Three will be different. Therefore, the ES should give further consideration to (and if necessary assess) the potential for significant effects from airborne noise due to activities seaward of MHWS for receptors at the coastline.

Offshore air quality

3.21 Table 7.6 of the Scoping Report proposes that all the effects on offshore air quality should be scoped out. This is on the grounds that aerial emissions will be rapidly dispersed offshore, the proposed wind farm would be a long way from any static sources of emissions and aerial emissions from vessel and helicopter movements associated with the development are small compared with total emissions for the southern North Sea. The Secretary of State agrees that significant effects are unlikely to occur and that this aspect can be scoped out.

Benthic subtidal and intertidal ecology

3.22 Table 8.5 of the Scoping Report proposes that remobilisation of contaminated sediments during construction and decommissioning is scoped out. The justification for this is that the surveys for Hornsea One and Hornsea Two showed low levels of sediment contamination. However, the Secretary of State notes that paragraph 8.1.11 of the Scoping Report refers to elevated levels of arsenic found during previous sampling. Natural England (NE) have advised that that evidence should be included within the ES to demonstrate that these elevated levels are due to the presence of natural sources. Therefore, the Secretary of State does not agree that this topic should be scoped out of the ES (but see comments below on scoping matters out following agreement with the relevant consultees).

Fish and shellfish ecology

3.23 Table 8.10 of the Scoping Report proposes that effects from remobilisation of sediments during construction and decommissioning should be scoped out. For the reasons given above the Secretary of State does not agree that this effect should be scoped out.

3.24 Table 8.10 of the Scoping Report also proposes that effects from changes in fishing pressure within and outside the array during operation should be scoped out. This is on the basis that no

restrictions were applied to the Hornsea Project Two and this would also be the case for Hornsea Three, plus the magnitude of such an impact would be difficult to quantify.

3.25 The Secretary of State does not consider that the justification provided in the Scoping Report is sufficiently clear or robust to support a decision to scope out. It is therefore, recommended that the Applicant makes further effort to agree with the Marine Management Organisation (MMO), NE and Cefas how best to address this issue in the ES.

Offshore ornithology

3.26 The Scoping Report states in Table 8.21 that permanent habitat loss will be addressed in the operational phase rather than the construction or decommissioning phases. While noting that habitat loss will begin during the construction phase, the Secretary of State recognises that the operational phase will represent the greatest permanent habitat loss and therefore can be viewed as an assessment of the worst case scenario. Taking NE's advice into account (see Appendix 3), the Secretary of State agrees that permanent habitat loss during construction and decommissioning can be scoped out of the EIA. The ES should nonetheless explain the rationale for only assessing the effects attributable to the operational phase.

3.27 Table 8.21 of the Scoping Report seeks to scope out effects from accidental pollution on offshore ornithology for all phases of the proposed development. This is on the grounds that various plans such as the Code of Construction Practice (CoCP) will avoid significant effects on the environment. The Secretary of State is not satisfied at this stage that reliance on 'appropriate' plans which are not presented within the Scoping Report provides sufficient evidence that significant effects on the environment can be avoided. Taking NE's advice into account, the Secretary of State does not agree these effects can be scoped out.

3.28 Table 8.21 proposes that indirect habitat loss and effects on prey availability during the operation and maintenance phase should be scoped out. The Secretary of State does not consider that sufficient information has been provided to demonstrate that indirect habitat loss and changes to prey availability can be scoped out of the operational phase and this view is endorsed by NE (see Appendix 3).

3.29 The Secretary of State is not satisfied that sufficient evidence has been provided to support the scoping out of lighting effects in the array area during operation. The assumption in the ES is that the lighting requirements for the proposed development will be the same as for the Hornsea One and Hornsea Two wind farms which may not be the case. NE in their consultation response has also highlighted the potential for lighting to affect migratory bird species. Therefore

the Secretary of State does not agree that lighting effects can be scoped out of the assessment.

Commercial fisheries

3.30 Table 9.2 of the Scoping Report proposes that the potential need for longer steaming distances should be scoped out for all phases of the development. This is on the grounds that effects from construction and decommissioning would be temporary. Fishing activity would be able to resume during operation so the presence of the wind farm would not affect steaming distances.

3.31 The Secretary of State agrees with the MMO in their consultation response (see Appendix 3) that the potential impact of longer steaming distances to alternative fishing grounds during construction of the export cable should be scoped in to the impact assessment. The MMO has raised concerns that smaller, beach-launched vessels are likely to be limited in terms of where they can relocate their gear during the construction due to vessel limitations. The impact on such receptors could therefore be great, even where the period of time may be relatively short. The Secretary of State does not agree that this aspect can be scoped out.

3.32 The Secretary of State agrees that in principle effects during operation and decommissioning can be scoped out. However the Applicant is first advised to consult with commercial fishermen, the Eastern Inshore Fisheries Conservation Authority (IFCA) and the MMO. It should be noted that commercial fishermen and the IFCA have not been consulted as part of the Secretary of State' Scoping Opinion.

3.33 Table 9.2 also proposes scoping out interference to fishing activity as a result of changes to shipping routes and construction vessel traffic leading to increased vessel traffic in fishing grounds for all phases of the development. The Secretary of State agrees that in principle these effects can be scoped out but as noted above, the Applicant should first consult with commercial fishermen, the Eastern IFCA and the MMO.

Aviation, military and communications

3.34 Table 9.9 of the Scoping Report proposes that the physical impact of the Hornsea Three array on military ATC radar and landing aids, meteorological radar and cellular telephones should be scoped out for the operational phase of the proposed development.

3.35 The Secretary of State agrees that effects on cellular phone coverage can be scoped out as there is no coverage in the vicinity of the proposed wind farm array. However the Scoping Report provides insufficient information to support a decision to scope out the effects on military ATC radar and meteorological radar at this stage. The

Applicant is strongly advised to seek agreement from relevant consultees on scoping out these matters.

Seascape and visual resources

3.36 Tables 9.11, 9.12 and 9.13 propose to scope out elements from the seascape and visual resources assessment for all phases of the development. The Secretary of State considers that insufficient information has been provided at this stage to support this outcome. The Secretary of State does not agree therefore to scope out; night time change in the existing visual scenario during all stages of the proposed development; change to the existing present day seascape character in relation to construction of the offshore export cable; daytime change in the existing visual scenario in relation to construction of the offshore export cable and temporary change of the existing Historic Seascape Character (HSC) through the introduction of new or uncharacteristic elements/features during construction. The Applicant's attention is also drawn to the comments from Historic England and NE in this regard.

Infrastructure and other users

3.37 The displacement of recreational vessels, kite surfing, kayaking, surfing and diving from the area of the wind farm array is proposed to be scoped out (Table 9.19 of the Scoping Report) on the grounds that the array is so far from shore that these users are unlikely to be present. With the exception of recreational vessels, the Secretary of State agrees that these effects can be scoped out in relation to activities within the array area. However the Secretary of State does not agree that the displacement of recreational vessels, kite surfing, kayaking, surfing and diving effects can be scoped out for activities associated with export cable.

Landscape and visual resources

3.38 Table 12.3 of the Scoping Report proposes scoping out any indirect impacts that fall outside the influence of the Zone of Theoretical Visibility for all phases of the development. Visual impacts from the offshore HVAC booster stations are scoped out on the grounds that they are too far offshore to have any visual impacts onshore. Impacts of the onshore ECR corridor are scoped out for the operational stage on the grounds that there would be no significant changes to landscape character or visual amenity as the cable would be buried underground. The Secretary of State agrees that the matters identified in Table 12.3 can be scoped out of the landscape and visual impact assessment.

Historic environment

3.39 Table 12.6 proposes scoping out impacts on the historic landscape from the operation and maintenance of the landfall and onshore cable

on the grounds that impacts are unlikely. The Secretary of State agrees in principle to this impact being scoped out but advises the Applicant to consult with Norfolk County Council.

3.40 The table also proposes to scope out effects on buried archaeological remains from the decommissioning of the landfall, onshore cable, onshore HVAC/HVDC substation and onshore HVAC booster station. The Secretary of State does not consider that there is sufficient information at this stage to scope out these effects and notes that Historic England has also raised concerns on this point (see Appendix 3).

Traffic and transport

3.41 Table 12.10 of the Scoping Report proposes that traffic generated by routine checks and maintenance should be scoped out on the grounds that it is unlikely to have a significant effect on local traffic. The Secretary of State agrees in principle to this effect being scoped out but advises that the Applicant seeks agreement with Norfolk County Council and the district authorities before confirming this.

Noise and vibration

3.42 Table 12.12 proposes that noise and vibration from the operation and maintenance of the landfall cable, the HVAC/HVDC substation and onshore HVAC booster station be scoped out. The Secretary of State considers that there is potential for these activities to create noise that may disturb birds using the intertidal area and therefore does not agree to this aspect being scoped out.

Air quality and health

3.43 The Secretary of State notes the intention to scope out the health impacts due to EMF exposure for all phases of the development. The Applicant is advised to have regard to NPS EN-5 and the need to demonstrate how connecting infrastructure will comply with current public exposure guidelines. Public Health England has made comments relating to this point (see Appendix 3). The Applicant is also advised to consider the need for a Health Impact Assessment (see section 4 of this Scoping Opinion).

3.44 Table 12.14 also proposes to scope out impacts due to traffic movements during the operational phase and effects on dust sensitive receptors. The Secretary of State agrees in principle to this matter being scoped out but advises that the Applicant seeks agreement with Norfolk County Council and the district authorities before confirming this. However the Secretary of State does not consider there is sufficient evidence to scope out effects from decommissioning at this stage.

3.45 Whilst the Secretary of State has not agreed to scope out certain topic or matters within the Opinion on the basis of the information available at the time, this does not prevent the Applicant from subsequently agreeing with the relevant consultees to scope matters out of the ES, where further evidence has been provided to justify this approach. This approach should be explained fully in the ES.

3.46 In order to demonstrate that topics have not simply been overlooked, where topics are scoped out prior to submission of the DCO application, the ES should still explain the reasoning and justify the approach taken.

Topic Areas

Offshore Physical Environment

Marine processes (see Scoping Report Section 7.1)

3.47 Paragraph 7.1.4 of the Scoping report explains the definition of the study area which is the area of the array, the landfall, the offshore ECR corridorsearch area and 'the seabed and coastal areas surrounding these areas that may be influenced by changes to marine processes due to Hornsea Three'. It is noted that the Scoping Report explains how designated sites which could be affected have been identified (Scoping Report paragraph 7.1.38). The ES will need to explain how it has been determined and which areas of seabed and coastal areas outside designated sites would be affected by the proposed development. The Applicant's attention is drawn to the comments from NE on the potential for effects beyond the ECR corridor search area.

3.48 It is noted that although additional surveys have been carried out for the array area and the offshore ECR corridor search area, the overall approach to the assessments in this chapter relies heavily on previous baseline data and modelling. This is based on the assumption that the effects from the proposed development will be broadly similar to previous projects, particularly the Hornsea One and Hornsea Two wind farms.

3.49 While the Secretary of State recognises that this approach may be appropriate in some cases, the Applicant should be careful to ensure that their ES adequately assesses the effects from the proposed development. Where previous assessments are relied on, the ES will need to provide clear justification that the previous assessments are fit for purpose. This is particularly important in relation to effects from the cable connection to land which follows a quite different route to the routes of the cables for Hornsea One and Hornsea Two. The Applicant is referred to the comments from NE on sandwave clearance and other topics that should be included in the assessment.

The Applicant is strongly advised to agree the approach to modelling marine processes with the MMO and NE.

3.50 The Scoping Report refers to scour protection, a cable installation plan and possible additional measures if these are required. The Applicant's attention is drawn to the comments from NE in Appendix 3 in relation to scour protection.

3.51 The MMO have raised concerns about the decision to screen out transboundary effects on marine processes. They point out that the Dutch Economic Exclusion Zone (EEZ) is 10 km from the proposed development. The Applicant is advised to consider these comments and to revisit their approach to transboundary screening if necessary.

Subsea noise (see Scoping Report Section 7.2)

3.52 The Secretary of State welcomes the provision of a subsea noise assessment to inform the assessment of noise impacts on fish and shellfish, marine mammals, commercial fisheries; and infrastructure and other users.

3.53 Paragraph 7.2.2 of the Scoping Report refers to vibration; however, there is no further reference to the assessment of impacts from vibration within the chapter. The ES should consider the potential impacts of subsea vibration in addition to those of subsea noise.

3.54 It is unclear from the Scoping Report how the baseline environment will be determined. The methodology for doing so should be set out within the ES and potential noise and vibration impacts should be assessed against the established baseline. The methods and modelling software used to estimate noise levels should be agreed with relevant consultees (including the MMO, the EA and NE) and detailed within the ES; along with the project specific detail that it utilises.

3.55 The 'relevant published injury and behaviour thresholds' used for the assessment of impacts on marine mammals and fish should be detailed within the ES. The Applicant's attention is drawn to the comments of Natural England (see Appendix 3) regarding thresholds for permanent threshold shift onset in marine mammals.

3.56 The cumulative subsea noise assessment should not be limited to other offshore wind farm developments, but should consider any other impulsive noise activities in the marine environment.

Airborne noise (see Scoping Report Section 7.3)

3.57 See comments above under 'Matters to be scoped in/out' for airborne noise from activities taking place seaward of the MHWS.

Offshore air quality (see Scoping Report Section 7.4)

3.58 See comments above relating to 'Matters to be scoped in/out' for offshore air quality.

Offshore biological environment

Benthic subtidal and intertidal ecology (see Scoping Report Section 8.1)

3.59 In respect of sources of baseline data, and as noted by NE in their response (see Appendix 3), more recent information in respect of UK Offshore Energy Strategic Environmental Assessment 3 (OESEA3) is available from: https://www.gov.uk/government/consultations/uk-offshore-energy-strategic-environmental-assessment-3-oesea3. The Applicant's attention is also drawn to the MMO's recommendation in Appendix 3 to review the Cefas 2012 Southern North Sea Synthesis Harmon grab data, which partly covers both the array area and offshore ECR corridor. Samples collected for the Humber Regional Environmental Characterisation and the Southern North Sea Synthesis are also stated to fall within the array area and could aid site characterisation (see Scoping Report paragraph 8.1.15). The Applicant is advised to explore these additional data sources to maximise the site characterisation.

3.60 The Applicant's attention is drawn to NE's recommendation in Appendix 3 that Table 8.2 of the Scoping Report should also include reference to the North Norfolk Coast Special Protection Area (SPA) and the Greater Wash potential SPA (pSPA). NE also advises that use be made of NE's advice on operations (link provided in NE's response at Appendix 3) for assessments on designated sites. The Secretary of State recommends that NE's online advice in respect of operations be reviewed and considered as part of the Applicant's assessment of impacts on designated sites.

3.61 In respect of the impact assessment methodology, NE has provided an up-to-date reference for the benthic studies at aggregate sites (see Appendix 3). The Applicant is advised to use to most up-to-date, relevant impact assessment methodologies for their ES.

3.62 The Secretary of State notes that the Applicant does not intend to undertake further site-specific benthic ecology surveys across the Hornsea Project Three Array area. The Applicant must ensure that they have sufficient information for the purpose of the EIA, including adequate information to characterise the benthic ecology receptors likely to be affected by the proposed development. The Applicant is directed to the comments made by the MMO and NE at Appendix 3, which note gaps in the existing survey data for the eastern portion of the array area, together with potential concerns regarding the sampling spacing, and the potential need to have sufficient data to inform any potential impacts on the Markham's Triangle rMCZ. The

Secretary of State recommends that the Applicant discuss the need (or otherwise) for further site-specific benthic ecology surveys at the array site, including the methodology for such surveys, with NE and the MMO at the earliest opportunity. The Applicant's attention is drawn to the comments of NE in Appendix 3 which state that NE would like to agree the rationale and prioritisation of sample locations for the benthic survey along the offshore ECR corridor and the array area prior to the surveys being undertaken.

3.63 The Secretary of State welcomes the Applicant's intention to undertake site-specific surveys along the offshore ECR corridor and at the landfall area (Table 8.4, Impact 1). The Applicant's attention is drawn to the comments of NE in Appendix 3 in respect of sandwave clearance, which states that if sandwave clearance is likely to be needed for cable installation then this should be explicitly stated and assessed in the ES.

3.64 It is noted that Table 8.4 Impact 2: Temporary increases in suspended sediments / smothering, refers back to Table 7.4 (marine processes) and contains limited information in respect of the benthic ecology assessment. The Secretary of State recommends that the ES include an assessment of smothering effects on sensitive benthic receptors. The Applicant's attention is also drawn to the comments of NE in Appendix 3, which raises the need to consider potential impacts associated the disposal of sediment during construction (arising from drilling for monopod foundations, seabed levelling for gravity-based foundations, and sandwave clearance), which may result in temporary or permanent loss of benthic habitat.

3.65 In respect of impacts during operation and maintenance presented in Table 8.4, the Applicant's attention is drawn to the comments made by NE in Appendix 3. In particular, the potential for long-term, permanent impacts on the Cromer Shoal Chalk Beds MCZ, if the chalk within the MCZ is cut during the cable installation. The Secretary of State advises that the Applicant assess the potential impact in the ES. NE has also identified that data from existing wind farms in similar environments should be used to support the impact assessment relating to colonisation of structures.

3.66 It is noted that non-native species are identified in Impact 5: Colonisation of hard structures (Table 8.4). As per comments made by NE, the Applicant should assess the potential impact of the spread of non-native species as a separate impact. NE has also identified published literature, policy and guidance documents in respect of non-native invasive species in their comments, which the Applicant should review and apply to the impact assessment.

3.67 The Secretary of State welcomes the Applicant's commitment to consider the same potential impacts in the cumulative assessment as presented in Table 8.4 for the project alone.

3.68 The Secretary of State notes that consideration has been given to transboundary impacts, and that impacts on benthic ecology receptors within other EEA States has been screened out of the Applicant's EIA. Paragraph 8.1.34 of the Scoping Report states that impacts on the benthic and epibenthic interest features of nature conservation designations outside of the UK EEZ will be considered within the HRA process. The Applicant's attention is drawn to the comments from the MMO in Appendix 3 that transboundary effects on benthic ecology should be screened in to the EIA process given the proximity to Klaverbank SCI.

Fish and shellfish ecology (see Scoping Report Section 8.2)

3.69 As noted for benthic ecology above, the Applicant's attention is drawn to more recent information in respect of OESEA3, which can be found here: https://www.gov.uk/government/consultations/uk-offshore-energy-strategic-environmental-assessment-3-oesea3

3.70 The Secretary of State notes that Table 8.9 (Impact 1) states that further site-specific fish ecology surveys to inform the Hornsea Three EIA are not proposed across the Hornsea Project Three array area and that the Statutory Nature Conservation Bodies (SNCBs) have agreed with this approach (with reference to Table 6.1). However, information contained in Table 6.1 does not seem to support this statement. In particular, it states that whilst it has been agreed that existing metocean data is sufficient and appropriate to inform the EIA, all other discussions are ongoing. NE has raised this point in their representation (see Appendix 3). NE also confirm that whilst it can agree no further need for otter and beam trawls for Hornsea Three, other aspects of the baseline assessment are still under discussion with Cefas and NE. The Applicant is therefore requested to seek agreement with the SNCBs in respect of the baseline for fish and shellfish ecology, including further surveys that may be necessary. The agreement should be sought early in the pre-application stage and prior to the submission of the ES.

3.71 The Secretary of State also notes that no further surveys are proposed for the offshore ECR corridor. As per comments for the array site above, the Applicant is requested to seek agreement with the SNCBs in respect of the baseline data for the offshore ECR corridor.

3.72 The Applicant's attention is drawn to the comments of the MMO (Appendix 3), which include reference at paragraph 6.8 to the sufficiency of the data to be used to characterise sandeel habitat. The MMO have not yet been able to consider the information provided in respect of sandeels. The Secretary of State requests that the Applicant makes efforts to agree sufficiency of the data with the MMO, and other SNCBs as relevant.

3.73 The Secretary of State considers that the potential impacts scoped in to the impact assessment for fish and shellfish ecology (as identified in Table 8.9) are appropriate. However, the Applicant's attention is also drawn to the comments of the MMO (Appendix 3), which states that it is not clear for the Scoping Report whether the construction impacts to be considered relate to both fish and shellfish receptors, or only fish receptors, and requests that both fish and shellfish receptors be considered for construction phase impacts.

3.74 The Applicant's attention is also drawn to the comments of the MMO at Appendix 3 in respect of fish, shellfish and fisheries.

Marine mammals (see Scoping Report Section 8.3)

3.75 It is noted that the baseline data for this topic will mostly consist of existing surveys carried out for the previous Hornsea wind farm applications collected from 2010 – 2013 and the most up-to-date Small Cetacean Abundance in the North Sea (SCANS) data, supplemented with aerial survey data for harbour porpoise, harbour seal and grey seal. The Secretary of State notes that the previous surveys within the Hornsea zone do not appear to have covered the ECR corridor. The response from NE (see Appendix 3) points out that there are important moulting and haul-out sites for seals in the vicinity of the cable corridor. Their response also raises concerns about the adequacy of the baseline survey work in relation to harbour porpoise, white-beaked dolphin and minke whale. The Applicant is strongly advised to seek agreement with NE and other relevant bodies on the baseline data and to consider, if necessary, collecting additional data.

3.76 The Secretary of State welcomes the information in the Scoping Report on the methods that will be used to assess effects on marine mammals and to evaluate the significance of those effects. The Applicant's attention is drawn to the comments from the MMO on the approach to assessing the effects of vessel disturbance and decommissioning.

3.77 It is noted that a number of internationally and nationally designated sites will be considered in the assessment. The Applicant is advised, wherever possible, to get agreement with the relevant authorities that the correct sites and features have been addressed by the assessment.

3.78 It is noted that the scale over which cumulative impacts are likely to occur will vary for different species. The Applicant is strongly encouraged to agree the scope of the cumulative assessment with the MMO and NE.

Ornithology (see Scoping Report Section 8.4)

3.79 The assessment described in the Scoping Report is based on the concept of Valued Ornithological Receptors (VOR). For the intertidal zone it is proposed that the only VOR is little tern, on the grounds that this is the only species observed to forage in the near shore areas. NE advises (see Appendix 3) that Sandwich and common terns should also be included in relation to effects from the ECR corridor. They also highlight potential effects on common scoter and red-throated diver which may be using the near shore area and concerns with the criteria used in Table 8.19 to define the sensitivity of VORs. The Applicant is strongly advised to seek agreement with NE and other relevant bodies as far as possible over the VORs to be included in the assessment.

3.80 It is noted that 4 study areas have been defined (Scoping Report paragraph 8.4.3) for the assessment. The Scoping Report also explains the rationale for the designated statutory site features which will be included in the ES. The Applicant's attention is drawn to NE's comments in Appendix 3 on these points. The ES will need to clearly explain the rationale for the extent of the study areas and the choice of designated site features to be included in the assessment.

3.81 The Scoping Report describes the baseline data being drawn from a variety of sources, including existing surveys of the Hornsea zone and additional surveys which are currently being carried out. It is not clear how these different data sets will be integrated to give a reliable baseline. The methods that will be used to analyse the data are briefly referred to in 8.20 but are not described in any detail. It is also unclear how the effects will be assessed at a population level and which reference populations will be used in the assessment.

3.82 The Applicant is referred to the advice from NE (see Appendix 3) on the baseline data and modelling that should be used in the assessment. The Applicant is strongly advised to establish the baseline data, modelling and methods for analysing population-level effects with NE and other relevant bodies. Where agreement cannot be reached then the Applicant is advised to present both the results based on their preferred methods and those advised by NE.

3.83 The range of projects listed for inclusion in the cumulative impact assessment is noted. The Applicant is advised to seek agreement with the MMO and NE on the specific projects to be included in the assessment.

Offshore human and socio-economic environment

Commercial fisheries (see Scoping Report Section 9.1)

3.84 The Secretary of State welcomes the Applicant's intention to obtain further data in respect of the commercial fishing activity baseline,

including obtaining landings data for non-UK vessels that has been landed at European ports from the relevant national governments, which will be presented in the ES.

3.85 The Applicant's attention is drawn to the comments of the MMO in respect of the commercial fishing ground (Botney Gut/Silver Pit) where *Nephrops norvegicus* are targeted using *Nephrops* otter trawls. The MMO identify that impacts on these fishing grounds will need to be assessed in the ES.

3.86 The Secretary of State also welcomes the Applicant's intention to obtain information on the fishing activity of vessels in areas closer to shore within the offshore ECR corridor search area through consultation, particularly for those which are less than 10m in length, as this information is not captured by the Vessel Monitoring System (VMS) and surveillance datasets. The Applicant's attention is directed to the comments of the MMO in their consultation response (see Appendix 3), which include information on commercial fishing vessel vessels under 10m within the area. The MMO also provide information on important crab, lobster and whelk fisheries in the inshore area of the offshore ECR corridor and information on the North Norfolk fishing fleet. The Applicant's attention is drawn to the comments of the MMO at paragraph 6.5 of their consultation response (see Appendix 3) which confirms that the fishing distribution of the North Norfolk fleet will not be captured by a VMS, as most, if not all vessels are under 12m in length and do not have a VMS installed (VMS is a requirement on vessels 12m+ since 2013).

3.87 The Applicant's attention is drawn to the comments of the MMO at Appendix 3, in respect of the need to consider the potential limitations of official landing statistics for fleet vessels less than 10m in length, as buyers and sellers notes are not produced. The MMO also identify that many of the vessels will have limited ability to relocate their pots during surveys and cable laying works. The Secretary of State advises that the Applicant consider these limitations in their impact assessment.

3.88 Figure 9.5 is noted to contain a number of different shades of pink/purple to identify gear types. The Secretary of State finds these difficult to interpret on the figure. The Applicant is requested to provide clear figures and legends/keys to figures within the ES.

3.89 The Secretary of State is content with the potential impacts scoped in to the assessment, as per Table 9.1, with the provision that the Applicant include the data sources and potential receptors identified in comments above. The Applicant should also consider whether the data collection (e.g. the type and nature of current fisheries in the area, including the vessel data) for decommissioning impacts will need to be updated prior to decommissioning. At present the decommissioning data is stated to be the same sources and dates as for construction and operation.

3.90 The Secretary of State advises that the Applicant consult with the Eastern IFCA and the fishing industry. As noted by the MMO, consultation with these bodies is important to establish the distribution of potting effort throughout the region and in relation to the offshore ECR corridor. The Secretary of State supports the MMO's recommendation to use an Offshore Fisheries Liaison Officer, a Company Fisheries Liaison Officer, and an Onshore Fishing Industry Representative to communicate with the fishing industry, as outline in the Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison (Jan 2014). The Secretary of State notes and welcomes the Applicant's intention to include such liaison officers and offices as part of the measures to be adopted.

3.91 The Applicant's attention is drawn to the comments of Norfolk County Council in respect of cumulative impacts and the need to consider offshore wind farms in the East Anglia Zone (Round 3) as well as those other projects off the Norfolk coast consented under previous licensing rounds; together with consented, proposed and operational wind farms, including the proposed Norfolk Vanguard and the Boreas wind farms.

Shipping and Navigation (see Scoping Report Section 9.2)

3.92 The ES should assess the impacts on ports and harbours which could be affected by the development, such as increased traffic at the ports and changes to shipping times and durations as a result of routes being diverted around or through the development. The Secretary of State recommends consultation with the appropriate harbour authorities.

3.93 As the layout of the array will not be fixed at the point of the application, the ES should consider a worst case scenario in its navigation assessment. The ES should set out how such a worst case scenario has been determined and is justified.

3.94 The Secretary of State notes at paragraph 9.2.38 of the Scoping Report, the intention to introduce a corridor to separate the Hornsea Project 3 boundary from that of Hornsea Project 2. The Maritime Coastguard Agency (MCA) and Trinity House Lighthouse Service (THLS)in their responses to the consultation request that this should be risk assessed in line with Marine Guidance Note 543. THLS further request that the final proposed separation be submitted to both THLS and the MCA for review. Furthermore, the THLS in their response to the Scoping Report request a full assessment of the cumulative and in-combination effects on shipping routes and patterns.

3.95 The Applicant's attention is drawn to the comments from the MCA on the need to pay particular attention to cabling routes and the

potential need to compile a Burial Protection Index study (see Appendix 3).

3.96 The Scoping Report states that baseline data will be drawn from visual, radar and automatic identification system (AIS) surveys. It also notes that there is likely to be recreation activity in proximity to the coast which would be 'non-AIS'. The ES methodology should explain how this traffic data is to be collated and assessed. The MMO in its response in Appendix 3 wishes to see consideration of all navigation and sea users in the ES.

3.97 The Secretary of State welcomes the proposed Navigational Risk Assessment (NRA) being undertaken in line with MGN 543. The ES should provide details of the collision risk modelling used within the NRA. The MCA request that any assessment includes the consideration of 'heavy weather' on shipping using routes affected by the proposed development. Furthermore, the Applicant's attention is drawn to the final paragraph on the consultation response from the MCA regard the requirements of MGN 543.

3.98 The Secretary of State welcomes the proposed consultation with the MCA on the assessment of Search and Rescue (SAR) capability in the region. Furthermore the use of a template MCA methodology is also noted.

3.99 The Secretary of State encourages the development of the Emergency Response and Cooperation Plan (ERCoP) in consultation with the relevant statutory bodies and for a draft to be submitted with and secured within the draft DCO. In developing the ERCoP and SAR assessment, the Secretary of State draws the Applicant's attention to the MCA's consultation response.

3.100 The Scoping Report at paragraph 9.2.39 notes 'phasing' of the development, the Secretary of State suggests that the ES clearly explains this how it affects the assessment being undertaken.

*Aviation, military and communica*tions (see Scoping Report Section 9.3)

3.101 The study area, as currently set out in the Scoping Report is complex and does not explain its geographical location and this may be assisted by the use of a map. The study area in the ES must be clearly defined.

3.102 The Secretary of State welcomes clear cross referencing with this section to others within the Scoping Report and consultation with statutory bodies. The Scoping Report also sets out much background data which is of assistance.

3.103 Where the Applicant has identified potential impacts, the Applicant is encouraged to discuss these fully with relevant bodies

Marine Archaeology (see Scoping Report Section 9.4)

3.104 It is noted that the baseline data for the ES will be based on a combination of data gained through desk study and additional geophysical survey. It is not clear whether the survey work has already been undertaken or not. Table 9.10 suggests that geophysical surveys are proposed but paragraph 3.5.1 of the Scoping Report refers to geophysical survey of the array area that has already been undertaken. The Applicant's attention is drawn to the comments from Historic England on this point and the quality of survey work that is likely to be required. The Applicant is strongly advised to agree survey protocols with Historic England if possible.

3.105 Any mitigation required should be fully explained within the ES and appropriately secured. Historic England has raised concerns about the level of detail presented in the Scoping Report in relation to the Written Scheme of Investigation (WSI) (see Appendix 3) which should be addressed.

Seascape and visual resources (see Scoping Report Section 9.5)

3.106 The extent of and rationale for the selection of the three study areas described in paragraph 9.5.2 of the Scoping Report is unclear. Figure 9.15, to which cross-reference is made, also does not show all those study areas. Reference is subsequently made in the chapter to the offshore ECR corridor search area which is not defined as a study area for the purposes of this topic. Paragraph 9.5.5 refers to two 'present day seascape and visual study areas' and it is unclear to what that refers. It is stated that the offshore HVAC booster station(s) study/search area is yet to be defined however it does note that it will include a 20km buffer, although the rationale for selecting that is not explained. No further information is provided in relation to this study area, other than in Table 9.11 which sets out the justification for scoping out all potential impacts related to the booster stations. The extent of the HSC study area is not defined, and the rationale for selecting it is not explained. The study areas for the seascape and visual resources assessments should be agreed with relevant consultees, clearly identified in the ES, and the basis on which they were selected should be justified.

3.107 Information relating to mitigation measures and residual effects is not provided in this chapter, other than in relation to measures inherent as part of the project design. The Secretary of State recommends that the ES clearly identifies the potential effects requiring mitigation, the measures proposed to avoid or reduce the effects, and any remaining significant residual effects.

3.108 It is noted that it is stated in Table 9.12 that no project-specific modelling is proposed for the HSC assessment in relation to the introduction of new or uncharacteristic elements/features during the operational and maintenance stages. The basis for relying on English

Heritage and MMO assessments should be clearly explained in the ES. The Applicant's attention is drawn to the comments from Historic England on this point.

3.109 It is proposed that the potential for cumulative effects is only considered in relation to the HSC assessment. The Secretary of State does not explicitly disagree with this approach but recommends that consideration is given as to whether this will capture all the potential significant cumulative effects, and whether other matters should additionally be considered.

Infrastructure and other users (see Scoping Report Section 9.6)

3.110 This chapter of the Scoping Report refers to a wide range of marine environment users that could be significantly affected by the proposed development including recreational craft, pipelines and oil and gas operators. While the commitment to consider effects on these receptors is welcomed it is not clear from the Scoping Report how these effects will be assessed. The ES should clearly explain the methodology used to assess these effects and the criteria used to evaluate the significance of those effects.

3.111 It is noted from the responses from the MMO and the Ministry of Defence (MOD) in Appendix 3 that they are broadly satisfied with the approach outlined in the Scoping Report. The Applicant is encouraged to continue working with these bodies and other relevant stakeholders to develop the assessment.

Onshore physical environment

Geology and ground conditions (see Scoping Report Section 10.1)

3.112 The Scoping Report describes the baseline environment within the text. It is expected that the ES will also include figures depicting the locations of any such features.

3.113 It is understood from Table 10.2 of the Scoping Report that the baseline environment would be characterised via a desk study; the ES should set out the information sources used. The study area for the desk study should be agreed with relevant consultees and justified within the ES. The Secretary of State notes that no surveys have been proposed and considers that this approach should be kept under review, for example, should any potential contamination be identified through the desk studies. In such circumstances, the Applicant should discuss the need for site specific surveys with the relevant consultees including the EA and the local authorities. In this regard, the applicant's attention is drawn to the comments from the EA (see Appendix 3 of this Opinion) regarding the need for ground investigations to inform the suitability of HDD.

3.114 Table 10.2 of the Scoping Report states that no site specific modelling is proposed to be undertaken to inform the assessment of potential impacts, however it does not explain how, in the absence of this information, the assessment will be undertaken. The assessment methodology, and details of any guidance used, should be set out within the ES.

3.115 Row 3 of Table 10.2 of the Scoping Report identifies the potential for impacts on groundwater quality from piling. The Scoping Report has not described the need for onshore piling; should such activities be required, the types and locations of these works should be set out and assessed within the ES.

3.116 The Secretary of State is aware of rapid cliff erosion on the Norfolk coast. The ES should detail how erosion has been taken into account in determining the depth and location of the onshore cables. The potential impacts of the landfall works on the Norfolk coast geology should be addressed. Reference should be made to the relevant Shoreline Management Plan, where appropriate.

3.117 The Secretary of State welcomes the consideration of construction impacts on Water Framework Directive (WFD) groundwater bodies (see section 4 of this Opinion for further details) and designated geological sites. Further comments on WFD assessment are provided in the Hydrology and Flood Risk section of this Scoping Opinion below.

3.118 The Scoping Report has described potential mitigation measures in broad terms, including the development of and adherence to a CoCP; chemical/fuel storage and handling procedures; and a decommissioning plan. The ES should provide further details of the measures to be adopted. Where reliance is placed upon a plan, a draft plan should be provided which contains sufficient information as to the minimum measures required to achieve the requisite level of mitigation.

3.119 Careful consideration should be given to the potential for overlapping cable corridors with the Norfolk Vanguard offshore wind farm and any resultant cumulative impacts.

Hydrology and flood risk (see Scoping Report Section 10.2)

3.120 The Scoping Report states that upon finalisation of the onshore ECR corridor, the study area will be refined to include the temporary and permanent land take for the onshore elements of Hornsea Three. The applicant should take care to ensure that the study area is sufficient to consider potential impacts outside of the application site, noting the potential for flood risk elsewhere, and for impacts to occur downstream of the site. The study area should be agreed with relevant consultees and justified within the ES.

3.121 The ES should include figures depicting the hydrological features described within the text in relation to the application site, including the network of ordinary watercourses, streams, drains and waterbodies referred to in paragraph 10.2.7 of the Scoping Report.

3.122 The Secretary of State welcomes the proposal for a Flood Risk Assessment (FRA) and the assessment of impacts on WFD watercourses; these assessments should form an appendix to the ES. The scope of these assessments should be discussed and agreed with relevant consultees including the EA, the relevant internal drainage boards and the lead local flood authority. Section 4 of this Scoping Opinion provides further comments as to the need for WFD assessment.

3.123 The FRA should take into account the most up to date climate change allowances and should cover tidal flood risk as well as fluvial impacts under present and projected sea level scenarios. Attention is drawn to the comments of Norfolk County Council (see Appendix 3 of this Opinion) regarding the climate change allowances for peak river flow and rainfall intensity, and more generally the contents of the FRA.

3.124 Table 10.4 of the Scoping Report states that no site specific modelling is proposed to be undertaken to inform the assessment of potential impacts; however it does not explain how the assessment will be undertaken. The assessment methodology, and details of any guidance used, should be set out within the ES.

3.125 The Secretary of State notes the measures to be adopted as part of the project, as detailed in paragraph 10.2.13 of the Scoping Report and advises that draft versions of the identified plans (ie the Surface Water Management Plan and the CoCP) are provided with the application. The ES should also provide details of the mitigation to minimise impacts to existing flood defences and field drainage and infrastructure. Any necessary reinstatement measures should also be set out.

3.126 The Secretary of State welcomes the preparation of a drainage strategy for the onshore HVAC booster station and HVAC/HVDC substation site. Attention is drawn to the comments of Norfolk County Council (see Appendix 3 of this Opinion) regarding the contents of a surface water drainage strategy.

3.127 In relation to HDD activities, the ES should address potential risks to both groundwater resources and surface water bodies from leakage of drilling fluid and provide details of measures that will be implemented to address such risks.

Onshore Biological Environment

Ecology and nature conservation (see Scoping Report Section 11.1)

3.128 The Secretary of State welcomes the Applicant's commitment to carry out the impact assessment following the most recent CIEEM guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal (2016). In addition to the criteria referred to in paragraph 11.1.11 of the Scoping Report and to be applied for the valuation of receptors, the Applicant should also consider habitats and species of principal importance as listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

3.129 The Secretary of State notes that the Applicant's proposed sources for the desk based study does not include reference to the local biological record centre for Norfolk, Norfolk Biodiversity information Service (NBIS). The Applicant should consider approaching NBIS for further information on habitat, species and designated sites of relevance to the proposed development. The Applicant's attention is drawn to the comments of NE at Annex 5 to their consultation response (see Appendix 3), which advises that further information on all county wildlife sites in Norfolk can be found on the NBIS website (http://www.nbis.org.uk/CWS), and that records of protected species be sought from appropriate local biological record centres (amongst other sources). The Applicant's attention is also drawn to the comments of the EA in their consultation response (see Appendix 3), which identifies that the local Royal Society for the Protection of Birds and British Trust for Ornithology branches and local ornithological groups should also be consulted to acquire full dataset for the local areas.

3.130 The Scoping Report contains little to no information with regard to the proposed survey methodologies that will be followed for habitat and species surveys. However, paragraph 11.1.7 acknowledges that the scope and methodology for the Preliminary Ecological Appraisal (PEA) will be discussed and agreed with the SNCBs. The Secretary of State advises that the Applicant agree the survey methodology for the PEA, and any subsequent habitat or species-specific surveys, be discussed and agreed with NE, the EA and the county ecologist, as appropriate, in advance of the surveys being undertaken. In its consultation response NE has identified a number of ecological surveys they advise be undertaken. These surveys will particularly support assessment of impact on designated sites (see Appendix 3). The EA has also indented the potential need for species-specific surveys to be undertaken for: white clawed crayfish; freshwater fish; freshwater pearl mussel; and hazel dormouse (see Appendix 3).

3.131 Table 11.1 identifies designated sites potentially affected by the proposed development, including four European sites. The Applicant's attention is drawn to the comments of NE at Annex 5 to

its consultation response, which identify a further two European sites to be considered by the Applicant: the North Norfolk Coast SAC; and The Wash and North Norfolk Coast SAC. NE has also identified a number of additional SSSIs to be considered in the impact assessment (see Appendix 3). The Applicant should consider all SSSIs along the onshore ECR route and any beyond this area where there are potential impact pathways between the proposed development and the designated site. The Applicant's attention is drawn to the comments of the EA (see Appendix 3), which notes that at present no designated sites have been identified that are not directly within the onshore ECR corridor. The EA comment that there may be a need to obtain data for an area wider than the onshore ECR corridor given that no information has been provided in the Scoping Report to confirm how close to limits of the area that works will take place.

3.132 The Secretary of State notes that a number of designated sites, including European sites, lie within the onshore ECR corridor. The Secretary of State recommends that the Applicant in developing the cable route makes effort to avoid impacts to designated sites where possible. This is an approach supported by NE and the EA (see comments at Appendix 3) and is in accordance with a recommended mitigation hierarchy. Where impacts are unavoidable, the project design, proposed surveys and mitigation should be discussed and agreed with the SNCBs and county ecologist (as appropriate). NE has suggested in its consultation response that the Evidence Plan process provides appropriate opportunity to support these discussions.

3.133 The Applicant's attention is drawn to the detailed comments of NE in its consultation response (see Appendix 3) in respect of European sites and component SSSIs, including sensitive qualifying features, potential impacts and recommended surveys. The Secretary of State strongly advises that the Applicant seeks to agree the scope of the assessment with NE. The Applicant's attention is also drawn to the comments of Barford Parish Council in respect of the River Wensum SSSI (see Appendix 3).

3.134 The Secretary of State notes that the Applicant has identified the Yare Valley County Wildlife Site (CWS) in Table 11.1, as a designated site to be considered in the impact assessment. The Applicant's attention is drawn to the comments of Cringleford Parish Council, which identify that the Applicant should consider the environmental and ecological sensitivities within the Yare Valley (should the cables run through this area) to ensure as little disturbance and damage to the environment and wildlife as possible.

3.135 The Applicant's attention is drawn to the comments on NE and the EA in their consultation response (see Appendix 3) in respect of invasive non-native species and the need to consider these within the ES. The Secretary of State advises that the potential to spread invasive non-native species be considered in the ES, particularly where the

proposed development affects aquatic habitats. NE have requested the inclusion of an invasive species protocol with the ES. The EA have also identified the need to identify biosecurity measures. The Secretary of State supports this request and advises that the Applicant discuss the content and format for such a protocol with NE and the EA prior to submission of the ES.

3.136 The Applicant's attention is drawn to the comments of the EA at Appendix 3 in respect of altered thermal and EMF impacts. The Secretary of State advises that the Applicant consider the depths at which the onshore cables would be buried beneath watercourses and the potential for impacts associated with buried cables on sensitive species. The EA have also raised the need to consider potential impacts associated with the maintenance of the buried onshore cables. The Secretary of State recommends that the Applicant consider potential impacts on species arising from potential thermal changes and EMFs during construction, operation/maintenance and decommissioning with NE, the EA and county ecologist (as appropriate). Should it subsequently be agreed that such effects are screened out of the impact assessment, the ES should provide a justification for doing so.

3.137 In respect of the data collection required for the decommissioning impacts, Table 11.8 impact 8 states that the PEA surveys will be used to inform these impacts. However, the Secretary of State believes that at the point of decommissioning these surveys will be significantly out of date and that further data collection and/or re-surveys are likely to be required prior to decommissioning to inform potential decommissioning impacts and any necessary mitigation. The Applicant is advised to include for additional surveys/resurveys for decommissioning impacts in this table.

3.138 The Secretary of State also advises that the Applicant consider the use and feasibility of Horizontal Directional Drilling (HDD) techniques where significant impacts on sensitive habitats/sites/ species cannot be avoided. The Applicant's attention is directed to the comments of the EA at Appendix 3 with regard to the use of HDD.

3.139 The list of potential cumulative projects at paragraph 11.1.22 is broadly defined by type. The Applicant's attention is directed to the concerns of NE set out in its consultation response with regard to cumulative impacts (see Appendix 3). These include cumulative impacts with the onshore cable route for the proposed Norfolk Vanguard offshore wind farm, coastal protection works, and rights of access to the coastal path. The Secretary of State recommends the Applicant discuss and agree the scope of potential cumulative impacts with NE during the pre-application stage.

Onshore human and socio-economic environment

Landscape and visual resources (Scoping Report Section 12.1)

3.140 The Secretary of State recognises that the proposed study area for the landscape and visual resources assessment is broad at this stage and welcomes that the study area, including the locations of the substation and HVAC booster station (if required), will be refined by making use of the Scottish Natural Heritage 2014 guidance and the application of a Zone of Theoretical Visibility (ZTV). The ES should describe the ZTV model used, and provide information on the area covered, the timing of any survey work, and the methodology used. The Secretary of State welcomes that the locations of viewpoints will be agreed with the local authorities.

3.141 The Secretary of State notes that Figure 12.1 of the Scoping Report identifies a number of relevant designations that lie outside but in proximity to the study area (defined as land within the onshore ECR corridor search area above MLWS), such as, for example, the Broads National Park, which is in the vicinity of the potential location of the electrical connection point. However, paragraph 12.1.10 and the accompanying Table 12.1 suggest that features outside the study area, such as Registered Parks and Gardens (also considered in the Historic Environment section), will be considered in the assessment, although the Broads National Park is not listed. The Secretary of State recommends that consideration is given to such features when defining the study area, and that the study area is described clearly and consistently in the ES. The Applicant's attention is drawn to the comments of NE in their scoping response in respect of the Norfolk Coast AONB.

3.142 The Secretary of State welcomes the proposal to use photomontages, wirelines and annotated photographs to illustrate the outcomes of the field surveys.

3.143 The Secretary of State notes and welcomes the reference to the application of the guidance on cumulative assessments contained in the 'Guidelines for Landscape and Visual Impact Assessment'.

3.144 Cross-reference should be made from this topic chapter of the ES to the Historic Environment and Ecology and Nature Conservation ES chapters.

Historic Environment (Scoping Report Section 12.2)

3.145 The proposed assessment method comprising desk based assessment, walkover surveys, geophysical surveys and detailed field evaluation (where necessary) accords with relevant guidelines. The Aapplicant should continue to engage with the relevant local authorities and statutory consultees regarding the assessment and

the written scheme of investigation (WSI) for field evaluation and development of the Code of Construction Practice (CoCP).

3.146 The Secretary of State notes the intention to include a 1km buffer around the onshore ECR, increasing this to 10km buffer around the HVAC/HVDC substation site and onshore HVAC booster station site for the impact assessment on designated heritage assets (Grade I and II* listed buildings and Scheduled Monuments). The potential temporary and permanent impact on the setting of other designated heritage assets (Grade II listed buildings and Conservation Areas) will be considered having regard to a 1km buffer around the onshore ECR and 5km buffer for the HVAC/HVDC substation site and onshore HVAC booster station site is to be used. The appropriate 1 km buffer would appear to be a narrow corridor and therefore the Secretary of State advises that and the Zone of Influence (ZOI) should be agreed with the relevant consultees and clearly justified in the ES.

3.147 The Scoping Report goes on to state that in relation to archaeology, a 1km buffer will be implemented around the onshore ECR with a 'focus on a smaller core area of 250m'. The Secretary of State, as noted above suggests that the ES clarifies what is meant by 'focus on' and ensures that this approach is agreed with relevant consultees and clearly justified in the ES.

3.148 The Secretary of State suggests that there should be sufficient cross-referencing within the ES to demonstrate that the whole ECR route area, onshore and offshore, has been considered in relation to impacts on the historic environment. This may be achieved through clear cross referencing.

3.149 Historic England in their response to the Scoping Opinion notes the complex historic landscape at the landfall site. The Secretary of State encourages the Applicant to consider this response and reflect such matters in the ES. The Applicant may wish to also consider the appropriateness of cross-referencing within the section to other section of the ES, for example Landscape and Visual Impact and Socio-economic issues.

3.150 The inclusion of historical designations as part of the desk based study should be agreed with the relevant statutory bodies.

3.151 The Secretary of State welcomes the explanation in the Scoping Report in relation to how 'sensitivity', 'asset of importance' and 'magnitude' are to be assessed and suggests that such methodologies are discussed with relevant bodies and agreed.

3.152 The Secretary of State recommends that draft versions of the CoCP and WSI and landscape planting proposals are submitted with the DCO application and agreed with relevant statutory consultees. The Applicant's attention is drawn to the comments from Historic England

in Appendix 3 on the need for a protocol for archaeological discoveries.

Land use, agriculture and recreation (see Scoping Report Section 12.3)

3.153 The Secretary of State highlights the potential for sterilisation of land along the cable route during all phases of the proposed development. This is a particular issue with underground connecting infrastructure and the Secretary of State expects the ES to assess these impacts.

3.154 The Scoping Report notes that in relation to recreational impacts, there is an overlap with other chapters in the ES. It is important that any cross-referencing is clear to demonstrate that all impacts have been assessed.

3.155 The study area at paragraphs 12.3.3 and 12.3.4 references land use and recreation but not agriculture. If this is to be a section of the ES where three topics are combined, the Applicant is reminded that the ES needs to be clear as to how impacts on land use, agriculture and recreation individually have been assessed, what the impacts are and any mitigation that has been taken into account in the assessment.

3.156 Furthermore, the study area does not include land outside of the onshore ECR. The Applicant is encouraged to justify this in the ES ensuring that any land use impacts within the onshore ECR do not affect land outside the onshore ECR, for example leading to severance.

3.157 Consideration should be given to any gas and electricity pipelines buried or other infrastructure onshore and the potential restrictions this may place on the location of the onshore cables. National Grid in their response to the Scoping Opinion set out the locations of their infrastructure, this should be considered as part of the ES.

3.158 The Applicant does not appear at present to propose undertaking any assessments through site visits to inform the baseline position. The Secretary of State suggests that this approach is discussed with relevant parties to ensure that this provides a robust baseline. Furthermore, this section may require cross-referencing with the section on socio-economic impacts.

3.159 The Secretary of State advises that this section should consider the interrelationships with impacts to ecology, in particular the impacts from the removal of grassland, trees and hedgerows ecological habitats and socio-economic impacts. Recreation is also assessed as part of the socio-economic chapter. The ES should be clear on which topics are assessed within each chapter to reduce duplication.

3.160 This section at present does not clearly set out how significance of impact is assessed. The Secretary of State expects this to be clearly

set out in the ES, including how impacts were assessed, against what criteria and how conclusions were drawn.

3.161 Table 12.8 sets out the proposed impacts to be scoped into the ES. The Secretary of State observes that there are no project specific studies due to be undertaken as part of this section. The Applicant is requested to consider the appropriateness of this in relation to the potential construction impacts on land use over the length and width of the onshore ECR corridor.

3.162 The Scoping Report sets out the measures to be adopted to mitigate effects. At present this does not make reference to a soil management strategy. The Applicant is encouraged to consider this as this has been in included past applications regarding underground electricity connections and is an effective means to ensure protection of the soil resource.

3.163 As a matter of clarification, the Applicant's attention is drawn to paragraph 12.3.7 where is incorrectly references the A419 rather than the A149 road.

Traffic and transport (see Scoping Report Section 12.4)

3.164 The Scoping Report states that the study area for the transport assessment will be all highways within the onshore ECR corridor, and will be refined when the onshore export cable corridor is finalised. The Secretary of State recommends that the geographical extent of the study area is agreed with the relevant highways authorities and Network Rail.

3.165 The commitment to working with the highways authorities, Highways England and the local authorities is welcomed. The Applicant is strongly advised to agree the scope and methodology of the assessment with the relevant local authorities. The Applicant's attention is drawn to the detailed comments from Norfolk County Council in Appendix 3 relating to points they would like to see included in the transport chapter of the ES.

3.166 Sensitive receptors are referred to within the Scoping Report; these should be specifically identified and their levels of sensitivity defined within the ES according to clearly defined methodology.

3.167 The Secretary of State welcomes that the Scoping Report sets out at paragraph 12.4.24, the types of projects and activities that will be included in the cumulative impact assessment. Broadland District Council, in their response to the Scoping Report make special reference to the Northern Distributor Road as being required to be included in any cumulative impact assessment as well as a significant gas pipeline to the north of Blickling Hall.

3.168 Mitigation measures should be considered such as a travel plan and sourcing materials so as to minimise transport. Over the lifetime of the proposals, if any allowance for the sourcing of materials locally, via a local port or overland from within the UK is to be made, then the transport implications of such an approach should be set out in the ES.

3.169 The Secretary of State recommends that the ES should take account of the location of footpaths and any public rights of way (PROW) including bridleways and byways. The ES should clearly set out impacts on them including within the wider area. It is important to minimise hindrance to them where possible.

Noise and vibration (See Scoping Report Section 12.5)

3.170 The ES should clearly set out the reasoning for the study area, explaining how any boundary is justified. Currently the study area does not include any areas outside of the onshore ECR corridor. In terms of noise and vibration, justification of this approach will be required in the ES. The route has the potential to involve works near to settlements and as such impacts on such to those settlements will need to be assessed within the ES.

3.171 The Secretary of State welcomes the intent to identify receptors for which surveys will be undertaken and the level of discussion and agreement reached with the local authorities and environmental health officers in this regard.

3.172 The Scoping Report does not provide information on the likely duration of monitoring. This will be an important consideration in the adequacy of the assessment and should be agreed with relevant consultees.

3.173 The Scoping Report at paragraph 12.5.6 notes that baseline data included within ES's for other developments will be reviewed. The ES should explain this approach and justify the applicability of this information to the proposed development.

3.174 The assessment should explain the specific impacts of construction on receptors.

3.175 The Scoping Report sets out that a CoCP and decommissioning plan will be developed as part of the DCO application. No mention is made however of a noise mitigation plan. The Applicant is requested to consider the appropriateness of such a plan.

Air quality and health (See Scoping Report Section 12.6)

3.176 The Secretary of State recommends that the study area, methodology and choice of air quality and health receptors are agreed with the relevant consultees and should have regard to recognised standards and guidance.

3.177 The Scoping Report confirms that the Applicant does not propose to undertaken air quality monitoring to ascertain the baseline; instead the approach is to rely upon existing publically available data sources. The Applicant should ensure that the air quality data used to inform the baseline assessment is up to date, sufficiently detailed and has adequate coverage of the study area.

3.178 Table 12.13 makes reference to the demolition of buildings as part of the decommissioning phase. It is not clear that this has been consistently considered in decommissioning activities have been consistently considered throughout the Scoping Report. Such works should be included in the list of works in the project description to ensure that all sections of the Scoping Opinion assess the demolition impacts. It also mentioned buildings to be constructed. Should these be buildings which are not substations, these should also be listed in the works. The ES should assess decommissioning activities consistently for each topic.

3.179 Table 12.13 references the demolition of buildings; however it is not clear that this has been consistently considered throughout the Scoping Report. Such works should be included in the list of works in the project description to ensure that all sections of the Scoping Opinion assess the demolition impacts. It also mentioned buildings to be constructed. Should these be building which are not substations, these should also be listed in the works. Table 12.13 makes reference to 'dust' instead of 'dust' throughout. This should be rectified.

3.180 The Secretary of State welcomes the provision of a Code of Construction Practice (CoCP) and decommissioning plan to be developed as part of the DCO application. The Secretary of State recommends that a draft version of these plans is provided with the DCO application. The Applicant should ensure that any specific measures relied upon to support the outcome of the assessment are appropriately detailed and secured in the CoCP or other suitable plans.

Socio-economics (See Scoping Report Section 12.7)

3.181 The Scoping Report does not set out a clear study area. The Scoping Report identifies that the study area is likely to be different depending on the receptor. The approach to establishing the study area should be clearly explained and justified in the ES.

3.182 The Secretary of State welcomes the cross-reference to other topic assessments with the potential to inform the assessment of socio economics. This will help ensure that relevant matters are clearly covered and assessed.

3.183 The information to form the baseline position is set out clearly in Table 12.15. Furthermore, the Secretary of State welcomes the upfront involvement of the Local Enterprise Partnership.

3.184 The Secretary of State recommends that the types of jobs generated should be considered in the context of the available skills and workforce in the area, this applies equally to both construction and operational stages. The assessment should be carried out in consultation with the local authorities and LEP to ensure that the data used is up-to-date.

3.185 Any mitigation necessary should be agreed with relevant stakeholders consulted upon prior to submission of a DCO application. The Secretary of State welcomes the use of a bespoke economic impact model to assess impacts in consultation with the LEP.

4 OTHER INFORMATION

4.1 This section does not form part of the Secretary of State's Opinion as to the information to be provided in the environmental statement. However, it does respond to other issues that the Secretary of State has identified which may help to inform the preparation of the application for the DCO.

Pre-application Prospectus

4.2 The Planning Inspectorate offers a service for applicants at the pre-application stage of the nationally significant infrastructure planning process. Details are set out in the prospectus 'Pre-application service for NSIPs'[1]. The prospectus explains what the Planning Inspectorate can offer during the pre-application phase and what is expected in return. The Planning Inspectorate can provide advice about the merits of a scheme in respect of national policy; can review certain draft documents; as well as advice about procedural and other planning matters. Where necessary a facilitation role can be provided. The service is optional and free of charge.

4.3 The level of pre-application support provided by the Planning Inspectorate will be agreed between an applicant and the Inspectorate at the beginning of the pre-application stage and will be kept under review.

Preliminary Environmental Information (PEI)

4.4 Consultation forms a crucial aspect of environmental impact assessment. As part of their pre-application consultation duties, applicants are required to prepare a Statement of Community Consultation (SoCC). This sets out how the local community will be consulted about the proposed development. The SoCC must state whether the proposed development is EIA development and if it is, how the applicant intends to publicise and consult on PEI. Further information in respect of PEI may be found in Advice Note seven 'Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping'.

Habitats Regulations Assessment (HRA)

4.5 The Secretary of State notes that European sites[2] could be potentially affected by the proposed development. The Habitats Regulations

[1] The prospectus is available from: http://infrastructure.planninginspectorate.gov.uk/application-process/pre-application-service-for-applicants/

[2] The term European Sites in this context includes Sites of Community Importance (SCIs), Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs), possible SACs, potential SPAs, Ramsar sites, proposed Ramsar sites,

require competent authorities, before granting consent for a plan or project, to carry out an appropriate assessment (AA) in circumstances where the plan or project is likely to have a significant effect on a European site (either alone or in combination with other plans or projects). Applicants should note that the competent authority in respect of NSIPs is the relevant Secretary of State. It is the Applicant's responsibility to provide sufficient information to the competent authority to enable them to carry out an AA or determine whether an AA is required.

4.6 The Applicant's attention is drawn to Regulation 5(2)(g) of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) (The APFP Regulations) and the need to include with the DCO application a report identifying European sites to which the Habitats Regulations applies and Ramsar sites, which may be affected by the proposed development.

4.7 The report to be submitted under Regulation 5(2)(g) of the APFP Regulations with the application must deal with two issues: the first is to enable a formal assessment by the competent authority of whether there is a likely significant effect; and the second, should it be required, is to enable the carrying out of an AA by the competent authority.

4.8 The Applicant's attention is also drawn to UK Government policy[3], which states that the following sites should be given the same protection as European sites: possible SACs (pSACs); potential SPAs (pSPAs); and (in England) proposed Ramsar sites and sites identified, or required, as compensatory measures for adverse effects on any of the above sites. Therefore, Applicants should also consider the need to provide information on such sites where they may be affected by the proposed development.

4.9 Further information on the HRA process is contained within Planning Inspectorate Advice Note ten 'Habitat Regulations Assessment relevant to nationally significant infrastructure projects', available on the National Infrastructure Planning pages of the Planning Inspectorate's website. It is recommended that Applicants follow the advice contained within this Advice Note.

Plan To Agree Habitats Information

4.10 A Plan may be prepared to agree upfront what information in respect of Habitats Regulations the applicant needs to supply to the Planning

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and any sites identified as compensatory measures for adverse effects on any of the above. For a full description of the designations to which the Habitats Regulations apply, and/or are applied as a matter of Government policy, see PINS Advice Note ten

[3] In England, the NPPF paragraph 118. In Wales, TAN5 paragraphs 5.2.2 and 5.2.3.

Inspectorate as part of a DCO application. This is termed an Evidence Plan for proposals in England or in both England and Wales, but a similar approach can be adopted for proposals only in Wales. For ease these are all termed 'evidence plans' here.

4.11 An evidence plan will help to ensure compliance with the Habitats Regulations. The Applicant is encouraged to continue their work with the statutory nature conservation bodies and other bodies to agree the evidence required to underpin their assessment of effects on European sites.

Sites of Special Scientific Interest (SSSIs)

4.12 The Secretary of State notes that a number of SSSIs are located close to or within the proposed development. Where there may be potential impacts on the SSSIs, the Secretary of State has duties under sections 28(G) and 28(I) of the Wildlife and Countryside Act 1981 (as amended) (the W&C Act). These are set out below for information.

4.13 Under s28(G), the Secretary of State has a general duty '… to take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest'.

4.14 Under s28(I), the Secretary of State must notify the relevant nature conservation body (NCB), NE in this case, before authorising the carrying out of operations likely to damage the special interest features of a SSSI. Under these circumstances 28 days must elapse before deciding whether to grant consent, and the Secretary of State must take account of any advice received from the NCB, including advice on attaching conditions to the consent. The NCB will be notified during the examination period.

4.15 If applicants consider it likely that notification may be necessary under s28(I), they are advised to resolve any issues with the NCB before the DCO application is submitted to the Secretary of State. If, following assessment by applicants, it is considered that operations affecting the SSSI will not lead to damage of the special interest features, applicants should make this clear in the ES. The application documents submitted in accordance with Regulation 5(2)(l) could also provide this information. Applicants should seek to agree with the NCB the DCO requirements which will provide protection for the SSSI before the DCO application is submitted.

European Protected Species (EPS)

4.16 Applicants should be aware that the decision maker under the Planning Act 2008 (PA 2008) has, as the CA, a duty to engage with the Habitats Directive. Where a potential risk to a European Protected

Species (EPS) is identified, and before making a decision to grant development consent, the CA must, amongst other things, address the derogation tests in Regulation 53 of the Habitats Regulations. Therefore the applicant may wish to provide information which will assist the decision maker to meet this duty.

4.17 If an applicant has concluded that an EPS licence is required the ExA will need to understand whether there is any impediment to the licence being granted. The decision to apply for a licence or not will rest with the applicant as the person responsible for commissioning the proposed activity by taking into account the advice of their consultant ecologist.

4.18 Applicants are encouraged to consult with NE and the MMO and, where required, to agree appropriate requirements to secure necessary mitigation. It would assist the examination if applicants could provide, with the application documents, confirmation from NE and the MMO whether any issues have been identified which would prevent the EPS licence being granted.

4.19 Generally, NE and the MMO are unable to grant an EPS licence in respect of any development until all the necessary consents required have been secured in order to proceed. For NSIPs, NE will assess a draft licence application in order to ensure that all the relevant issues have been addressed. Within 30 working days of receipt, NE will either issue 'a letter of no impediment' stating that it is satisfied, insofar as it can make a judgement, that the proposals presented comply with the regulations or will issue a letter outlining why NE consider the proposals do not meet licensing requirements and what further information is required before a 'letter of no impediment' can be issued. The applicant is responsible for ensuring draft licence applications are satisfactory for the purposes of informing formal pre-application assessment by NE.

4.20 Ecological conditions on the site may change over time. It will be the applicant's responsibility to ensure information is satisfactory for the purposes of informing the assessment of no detriment to the maintenance of favourable conservation status (FCS) of the population of EPS affected by the proposals. Applicants are advised that current conservation status of populations may or may not be favourable. Demonstration of no detriment to favourable populations may require further survey and/or submission of revised short or long term mitigation or compensation proposals.

4.21 In England the focus concerns the provision of up to date survey information which is then made available to NE (along with any resulting amendments to the draft licence application). Applicants with projects in England (including activities undertaken landward of

the mean low water mark) can find further information in Advice Note eleven, Annex C[4].

Other Regulatory Regimes

4.22 The Secretary of State recommends that the applicant should state clearly what regulatory areas are addressed in the ES and that the applicant should ensure that all relevant authorisations, licences, permits and consents that are necessary to enable operations to proceed are described in the ES. Also it should be clear that any likely significant effects of the proposed development which may be regulated by other statutory regimes have been properly taken into account in the ES.

4.23 It will not necessarily follow that the granting of consent under one regime will ensure consent under another regime. For those consents not capable of being included in an application for consent under the PA 2008, the Secretary of State will require a level of assurance or comfort from the relevant regulatory authorities that the proposal is acceptable and likely to be approved, before they make a recommendation or decision on an application. The applicant is encouraged to make early contact with other regulators. Information from the applicant about progress in obtaining other permits, licences or consents, including any confirmation that there is no obvious reason why these will not subsequently be granted, will be helpful in supporting an application for development consent to the Secretary of State.

Water Framework Directive

4.24 The Secretary of State notes the WFD Screening document provided in Appendix B of the Scoping Report and that this will be updated once the project description has been finalised. The applicant is advised to agree the elements to be screened out of the Scoping Assessment with the Environment Agency.

4.25 Section B.6 WFD Screening Document presents tables which are stated to be indicative of those that will be used in the scoping assessment and are split into separate steps; these steps differ to those presented in Figure B.3 (WFD assessment methodology flow chart) and it would be more intuitive for these steps to align with one another.

The Environmental Permitting Regulations and the Water Resources Act

[4] Advice Note eleven, Annex C – Natural England and the Planning Inspectorate available from: http://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/10/PINS-Advice-Note-11_AnnexC_20150928.pdf

Environmental Permitting Regulations 2010

4.26 The Environmental Permitting Regulations 2010 require operators of certain facilities, which could harm the environment or human health, to obtain permits from the Environment Agency. Environmental permits can combine several activities into one permit. There are standard permits supported by 'rules' for straightforward situations and bespoke permits for complex situations. For further information, please see the Government's advice on determining the need for an environmental permit[5].

4.27 The Environment Agency's environmental permits cover:

- Industry regulation;
- Waste management (waste treatment, recovery or disposal operations);
- Discharges to surface water;
- Groundwater activities; and
- Radioactive substances activities.

4.28 Characteristics of environmental permits include:

- They are granted to operators (not to land);
- They can be revoked or varied by the Environment Agency;
- Operators are subject to tests of competence;
- Operators may apply to transfer environmental permits to another operator (subject to a test of competence); and
- Conditions may be attached.

The Water Resources Act 1991

4.29 Under the Water Resources Act 1991 (as amended), anyone who wishes to abstract more than $20m^3$/day of water from a surface source such as a river or stream or an underground source, such as an aquifer, will normally require an abstraction licence from the Environment Agency. For example, an abstraction licence may be required to abstract water for use in cooling at a power station. An impoundment licence is usually needed to impede the flow of water, such us in the creation of a reservoir or dam, or construction of a fish pass.

4.30 Abstraction licences and impoundment licences are commonly referred to as 'water resources licences'. They are required to ensure that there is no detrimental impact on existing abstractors or the environment. For further information, please see the Environment

[5] Available from: https://www.gov.uk/environmental-permit-check-if-you-need-one

Agency's WR176 guidance form on applying for a full, transfer or impounding licence[6]:

4.31 Characteristics of water resources licences include:

- They are granted to licence holders (not to land);
- They can be revoked or varied;
- They can be transferred to another licence holder; and
- In the case of abstraction licences, they are time limited.

Role of the Applicant

4.32 It is the responsibility of applicants to identify whether an environmental permit and / or water resources licence is required from the Environment Agency before an NSIP can be constructed or operated. Failure to obtain the appropriate consent(s) is an offence.

4.33 The Environment Agency allocates a limited amount of pre-application advice for environmental permits and water resources licences free of charge. Further advice can be provided, but this will be subject to cost recovery.

4.34 The Environment Agency encourages applicants to engage with them early in relation to the requirements of the application process. Where a project is complex or novel, or requires a Habitats Regulations Assessment, applicants are encouraged to "parallel track" their applications to the Environment Agency with their DCO applications to the Planning Inspectorate. Further information on the Environment Agency's role in the infrastructure planning process is available in Annex D of the Planning Inspectorate's Advice note eleven (working with public bodies in the infrastructure planning process)[7]

4.35 When considering the timetable to submit their applications, applicants should bear in mind that the Environment Agency will not be in a position to provide a detailed view on the application until it issues its draft decision for public consultation (for sites of high public interest) or its final decision. Therefore the applicant should ideally submit its application sufficiently early so that the Environment Agency is at this point in the determination by the time the Development Consent Order reaches examination.

4.36 It is also in the interests of an applicant to ensure that any specific requirements arising from their permit or licence are capable of being

[6] Available from: https://www.gov.uk/government/publications/wr176-applying-for-full-transfer-or-impoundment-licence-form-guidance

[7] Available from: http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

carried out under the works permitted by the DCO. Otherwise there is a risk that requirements could conflict with the works which have been authorised by the DCO (e.g. a stack of greater height than that authorised by the DCO could be required) and render the DCO impossible to implement.

Health Impact Assessment

4.37 The Secretary of State considers that it is a matter for the applicant to decide whether or not to submit a stand-alone Health Impact Assessment (HIA). However, the applicant should have regard to the responses received from the relevant consultees regarding health, and in particular to the comments from the Health and Safety Executive and or Public Health England/Public Health Wales in relation to electrical safety issues (see Appendix 3).

4.38 The methodology for the HIA, if prepared, should be agreed with the relevant statutory consultees and take into account mitigation measures for acute risks.

Transboundary Impacts

4.39 The Secretary of State notes that the Scoping Report has acknowledged the potential for transboundary impacts and recommends that the Applicant should provide to the Secretary of State as soon as possible any additional available information about potential significant trans-boundary effects and identify the affected state(s). In order to ensure the efficient and effective examination of applications within the statutory timetable under Section 98 of the PA 2008, it is important that this information is made available at the earliest opportunity to facilitate timely consultations, if required, with other EEA States in accordance with Regulation 24.

4.40 The ES will also need to address this matter in each topic area and summarise the position on trans-boundary effects of the proposed development, taking into account inter-relationships between any impacts in each topic area.

APPENDIX 1 – PRESENTATION OF THE ENVIRONMENTAL STATEMENT

A1.1 The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (SI 2264) (as amended) sets out the information which must be provided for an application for a development consent order (DCO) for nationally significant infrastructure under the Planning Act 2008. Where required, this includes an environmental statement. Applicants may also provide any other documents considered necessary to support the application. Information which is not environmental information need not be replicated or included in the ES.

A1.2 An environmental statement (ES) is described under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (SI 2263) (as amended) (the EIA Regulations) as a statement:

> *(a) that includes such of the information referred to in Part 1 of Schedule 4 as is reasonably required to assess the environmental effects of the development and of any associated development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile; but*
>
> *(b) that includes at least the information required in Part 2 of Schedule 4.*
>
> *(EIA Regulations Regulation 2)*

A1.3 The purpose of an ES is to ensure that the environmental effects of a proposed development are fully considered, together with the economic or social benefits of the development, before the development consent application under the Planning Act 2008 is determined. The ES should be an aid to decision making.

A1.4 The Secretary of State advises that the ES should be laid out clearly with a minimum amount of technical terms and should provide a clear objective and realistic description of the likely significant impacts of the proposed development. The information should be presented so as to be comprehensible to the specialist and non-specialist alike. The Secretary of State recommends that the ES be concise with technical information placed in appendices.

ES Indicative Contents

A1.5 The Secretary of State emphasises that the ES should be a 'stand alone' document in line with best practice and case law. The EIA Regulations Schedule 4, Parts 1 and 2, set out the information for inclusion in environmental statements.

A1.6 Schedule 4 Part 1 of the EIA Regulations states this information includes:

17. Description of the development, including in particular—

(a) a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases;

(b) a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used;

(c) an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc) resulting from the operation of the proposed development.

18. An outline of the main alternatives studied by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects.

19. A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.

20. A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from:

(a) the existence of the development;

(b) the use of natural resources;

(c) the emission of pollutants, the creation of nuisances and the elimination of waste,

and the description by the applicant of the forecasting methods used to assess the effects on the environment.

21. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.

22. A non-technical summary of the information provided under paragraphs 1 to 5 of this Part.

23. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

(EIA Regulations Schedule 4 Part 1)

The content of the ES must include as a minimum those matters set out in Schedule 4 Part 2 of the EIA Regulations. This includes the consideration of 'the main alternatives studied by the applicant' which the Secretary of State recommends could be addressed as a separate chapter in the ES. Part 2 is included below for reference:

24. A description of the development comprising information on the site, design and size of the development

25. A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects

26. The data required to identify and assess the main effects which the development is likely to have on the environment

27. An outline of the main alternatives studies by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects, and

28. A non-technical summary of the information provided [under the four paragraphs of Schedule 4 part 2 above]*.*

(EIA Regulations Schedule 4 Part 2)

A1.7 Traffic and transport is not specified as a topic for assessment under Schedule 4; although in line with good practice the Secretary of State considers it is an important consideration *per se*, as well as being the source of further impacts in terms of air quality and noise and vibration.

Balance

A1.8 The Secretary of State recommends that the ES should be balanced, with matters which give rise to a greater number or more significant impacts being given greater prominence. Where few or no impacts are identified, the technical section may be much shorter, with greater use of information in appendices as appropriate.

The Secretary of State considers that the ES should not be a series of disparate reports and stresses the importance of considering inter-relationships between factors and cumulative impacts.

Scheme Proposals

A1.9 The scheme parameters will need to be clearly defined in the draft DCO and therefore in the accompanying ES which should support the application as described. The Secretary of State is not able to entertain material changes to a project once an application is submitted. The Secretary of State draws the attention of the applicant to the DCLG and the Planning Inspectorate's published advice on the preparation of a draft DCO and accompanying application documents.

Flexibility

A1.10 The Secretary of State acknowledges that the EIA process is iterative, and therefore the proposals may change and evolve. For example, there may be changes to the scheme design in response to consultation. Such changes should be addressed in the ES. However, at the time of the application for a DCO, any proposed scheme parameters should not be so wide ranging as to represent effectively different schemes.

A1.11 It is a matter for the applicant, in preparing an ES, to consider whether it is possible to assess robustly a range of impacts resulting from a large number of undecided parameters. The description of the proposed development in the ES must not be so wide that it is insufficiently certain to comply with requirements of paragraph 17 of Schedule 4 Part 1 of the EIA Regulations.

A1.12 The Rochdale Envelope principle *(see R v Rochdale MBC ex parte Tew (1999) and R v Rochdale MBC ex parte Milne (2000))* is an accepted way of dealing with uncertainty in preparing development applications. The applicant's attention is drawn to the Planning Inspectorate's Advice Note nine 'Rochdale Envelope' which is available on the Advice Note's page of the National Infrastructure Planning website.

A1.13 The applicant should make every attempt to narrow the range of options and explain clearly in the ES which elements of the scheme have yet to be finalised and provide the reasons. Where some flexibility is sought and the precise details are not known, the applicant should assess the maximum potential adverse impacts the project could have to ensure that the project as it may be constructed has been properly assessed.

A1.14 The ES should be able to confirm that any changes to the development within any proposed parameters would not result in significant impacts not previously identified and assessed. The maximum and other dimensions of the proposed development should be clearly described in the ES, with appropriate justification. It will also be important to consider choice of materials, colour and the form

of the structures and of any buildings. Lighting proposals should also be described.

Scope

A1.15 The Secretary of State recommends that the physical scope of the study areas should be identified under all the environmental topics and should be sufficiently robust in order to undertake the assessment. The extent of the study areas should be on the basis of recognised professional guidance, whenever such guidance is available. The study areas should also be agreed with the relevant consultees and local authorities and, where this is not possible, this should be stated clearly in the ES and a reasoned justification given. The scope should also cover the breadth of the topic area and the temporal scope, and these aspects should be described and justified.

Physical Scope

A1.16 In general the Secretary of State recommends that the physical scope for the EIA should be determined in the light of:

- The nature of the proposal being considered;
- The relevance in terms of the specialist topic;
- The breadth of the topic;
- The physical extent of any surveys or the study area; and
- The potential significant impacts.

A1.17 The Secretary of State recommends that the physical scope of the study areas should be identified for each of the environmental topics and should be sufficiently robust in order to undertake the assessment. This should include at least the whole of the application site, and include all offsite works. For certain topics, such as landscape and transport, the study area will need to be wider. The extent of the study areas should be on the basis of recognised professional guidance and best practice, whenever this is available, and determined by establishing the physical extent of the likely impacts. The study areas should also be agreed with the relevant consultees and, where this is not possible, this should be stated clearly in the ES and a reasoned justification given.

Breadth of the Topic Area

A1.18 The ES should explain the range of matters to be considered under each topic and this may respond partly to the type of project being considered. If the range considered is drawn narrowly then a justification for the approach should be provided.

Temporal Scope

A1.19 The assessment should consider:

- Environmental impacts during construction works;
- Environmental impacts on completion/operation of the proposed development;
- Where appropriate, environmental impacts a suitable number of years after completion of the proposed development (for example, in order to allow for traffic growth or maturing of any landscape proposals); and
- Environmental impacts during decommissioning.

A1.20 In terms of decommissioning, the Secretary of State acknowledges that the further into the future any assessment is made, the less reliance may be placed on the outcome. However, the purpose of such a long term assessment, as well as to enable the decommissioning of the works to be taken into account, is to encourage early consideration as to how structures can be taken down. The purpose of this is to seek to minimise disruption, to re-use materials and to restore the site or put it to a suitable new use. The Secretary of State encourages consideration of such matters in the ES.

A1.21 The Secretary of State recommends that these matters should be set out clearly in the ES and that the suitable time period for the assessment should be agreed with the relevant statutory consultees.

A1.22 The Secretary of State recommends that throughout the ES a standard terminology for time periods should be defined, such that for example, 'short term' always refers to the same period of time.

Baseline

A1.23 The Secretary of State recommends that the baseline should describe the position from which the impacts of the proposed development are measured. The baseline should be chosen carefully and, whenever possible, be consistent between topics. The identification of a single baseline is to be welcomed in terms of the approach to the assessment, although it is recognised that this may not always be possible.

A1.24 The Secretary of State recommends that the baseline environment should be clearly explained in the ES, including any dates of surveys, and care should be taken to ensure that all the baseline data remains relevant and up to date.

A1.25 For each of the environmental topics, the data source(s) for the baseline should be set out together with any survey work undertaken with the dates. The timing and scope of all surveys should be agreed

with the relevant statutory bodies and appropriate consultees, wherever possible.

A1.26 The baseline situation and the proposed development should be described within the context of the site and any other proposals in the vicinity.

Identification of Impacts and Method Statement

Legislation and Guidelines

A1.27 In terms of the EIA methodology, the Secretary of State recommends that reference should be made to best practice and any standards, guidelines and legislation that have been used to inform the assessment. This should include guidelines prepared by relevant professional bodies.

A1.28 In terms of other regulatory regimes, the Secretary of State recommends that relevant legislation and all permit and licences required should be listed in the ES where relevant to each topic. This information should also be submitted with the application in accordance with the APFP Regulations.

A1.29 In terms of assessing the impacts, the ES should approach all relevant planning and environmental policy – local, regional and national (and where appropriate international) – in a consistent manner.

Assessment of Effects and Impact Significance

A1.30 The EIA Regulations require the identification of the 'likely significant effects of the development on the environment' (Schedule 4 Part 1 paragraph 20).

A1.31 As a matter of principle, the Secretary of State applies the precautionary approach to follow the Court's reasoning in judging 'significant effects'. In other words 'likely to affect' will be taken as meaning that there is a probability or risk that the proposed development will have an effect, and not that a development will definitely have an effect.

A1.32 The Secretary of State considers it is imperative for the ES to define the meaning of 'significant' in the context of each of the specialist topics and for significant impacts to be clearly identified. The Secretary of State recommends that the criteria should be set out fully and that the ES should set out clearly the interpretation of 'significant' in terms of each of the EIA topics. Quantitative criteria should be used where available. The Secretary of State considers that this should also apply to the consideration of cumulative impacts and impact inter-relationships.

A1.33 The Secretary of State recognises that the way in which each element of the environment may be affected by the proposed development can be approached in a number of ways. However it considers that it would be helpful, in terms of ease of understanding and in terms of clarity of presentation, to consider the impact assessment in a similar manner for each of the specialist topic areas. The Secretary of State recommends that a common format should be applied where possible.

Inter-relationships between environmental factors

A1.34 The inter-relationship between aspects of the environments likely to be significantly affected is a requirement of the EIA Regulations (see Schedule 4 Part 1 of the EIA Regulations). These occur where a number of separate impacts, e.g. noise and air quality, affect a single receptor such as fauna.

A1.35 The Secretary of State considers that the inter-relationships between factors must be assessed in order to address the environmental impacts of the proposal as a whole. This will help to ensure that the ES is not a series of separate reports collated into one document, but rather a comprehensive assessment drawing together the environmental impacts of the proposed development. This is particularly important when considering impacts in terms of any permutations or parameters to the proposed development.

Cumulative Impacts

A1.36 The potential cumulative impacts with other major developments will need to be identified, as required by the Directive. The significance of such impacts should be shown to have been assessed against the baseline position (which would include built and operational development). In assessing cumulative impacts, other major development should be identified through consultation with the local planning authorities and other relevant authorities on the basis of those that are:

- Projects that are under construction;
- Permitted application(s) not yet implemented;
- Submitted application(s) not yet determined;
- All refusals subject to appeal procedures not yet determined;
- Projects on the National Infrastructure's programme of projects; and
- Projects identified in the relevant development plan (and emerging development plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.

A1.37 Details should be provided in the ES, including the types of development, location and key aspects that may affect the EIA and how these have been taken into account as part of the assessment will be crucial in this regard.

A1.38 The Secretary of State recommends that offshore wind farms should also take account of any offshore licensed and consented activities in the area, for the purposes of assessing cumulative effects, through consultation with the relevant licensing/consenting bodies.

A1.39 For the purposes of identifying any cumulative effects with other developments in the area, applicants should also consult consenting bodies in other EU states to assist in identifying those developments (see commentary on Transboundary Effects below).

Related Development

A1.40 The ES should give equal prominence to any development which is related with the proposed development to ensure that all the impacts of the proposal are assessed.

A1.41 The Secretary of State recommends that the applicant should distinguish between the proposed development for which development consent will be sought and any other development. This distinction should be clear in the ES.

Alternatives

A1.42 The ES must set out an outline of the main alternatives studied by the applicant and provide an indication of the main reasons for the applicant's choice, taking account of the environmental effect (Schedule 4 Part 1 paragraph 18).

A1.43 Matters should be included, such as inter alia alternative design options and alternative mitigation measures. The justification for the final choice and evolution of the scheme development should be made clear. Where other sites have been considered, the reasons for the final choice should be addressed.

A1.44 The Secretary of State advises that the ES should give sufficient attention to the alternative forms and locations for the off-site proposals, where appropriate, and justify the needs and choices made in terms of the form of the development proposed and the sites chosen.

Mitigation Measures

A1.45 Mitigation measures may fall into certain categories namely: avoid; reduce; compensate or enhance (see Schedule 4 Part 1 paragraph 21); and should be identified as such in the specialist topics. Mitigation measures should not be developed in isolation as they may relate to more than one topic area. For each topic, the ES should set

out any mitigation measures required to prevent, reduce and where possible offset any significant adverse effects, and to identify any residual effects with mitigation in place. Any proposed mitigation should be discussed and agreed with the relevant consultees.

A1.46 The effectiveness of mitigation should be apparent. Only mitigation measures which are a firm commitment and can be shown to be deliverable should be taken into account as part of the assessment.

A1.47 It would be helpful if the mitigation measures proposed could be cross referred to specific provisions and/or requirements proposed within the draft development consent order. This could be achieved by means of describing the mitigation measures proposed either in each of the specialist reports or collating these within a summary section on mitigation.

A1.48 The Secretary of State advises that it is considered best practice to outline in the ES, the structure of the environmental management and monitoring plan and safety procedures which will be adopted during construction and operation and may be adopted during decommissioning.

Cross References and Interactions

A1.49 The Secretary of State recommends that all the specialist topics in the ES should cross reference their text to other relevant disciplines. Interactions between the specialist topics is essential to the production of a robust assessment, as the ES should not be a collection of separate specialist topics, but a comprehensive assessment of the environmental impacts of the proposal and how these impacts can be mitigated.

A1.50 As set out in EIA Regulations Schedule 4 Part 1 paragraph 23, the ES should include an indication of any technical difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

Consultation

A1.51 The Secretary of State recommends that ongoing consultation is maintained with relevant stakeholders and that any specific areas of agreement or disagreement regarding the content or approach to assessment should be documented. The Secretary of State recommends that any changes to the scheme design in response to consultation should be addressed in the ES.

A1.52 Consultation with the local community should be carried out in accordance with the SoCC which will state how the applicant intends to consult on the preliminary environmental information (PEI). This PEI could include results of detailed surveys and recommended mitigation actions. Where effective consultation is carried out in

accordance with Section 47 of the Planning Act, this could usefully assist the applicant in the EIA process – for example the local community may be able to identify possible mitigation measures to address the impacts identified in the PEI. Attention is drawn to the duty upon applicants under Section 50 of the Planning Act to have regard to the guidance on pre-application consultation.

Transboundary Effects

A1.53 The Secretary of State recommends that consideration should be given in the ES to any likely significant effects on the environment of another Member State of the European Economic Area. In particular, the Secretary of State recommends consideration should be given to discharges to the air and water and to potential impacts on migratory species and to impacts on shipping and fishing areas.

A1.54 The Applicant's attention is also drawn to the Planning Inspectorate's Advice Note twelve 'Development with significant transboundary impacts consultation' which is available on the Advice Notes Page of the National Infrastructure Planning website[8].

Summary Tables

A1.55 The Secretary of State recommends that in order to assist the decision making process, the applicant may wish to consider the use of tables:

Table X: to identify and collate the residual impacts after mitigation on the basis of specialist topics, inter-relationships and cumulative impacts.

Table XX: to demonstrate how the assessment has taken account of this Opinion and other responses to consultation.

Table XXX: to set out the mitigation measures proposed, as well as assisting the reader, the Secretary of State considers that this would also enable the applicant to cross refer mitigation to specific provisions proposed to be included within the draft Development Consent Order.

Table XXXX: to cross reference where details in the HRA (where one is provided) such as descriptions of sites and their locations, together with any mitigation or compensation measures, are to be found in the ES.

[8] Available from: http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

Terminology and Glossary of Technical Terms

A1.56 The Secretary of State recommends that a common terminology should be adopted. This will help to ensure consistency and ease of understanding for the decision making process. For example, 'the site' should be defined and used only in terms of this definition so as to avoid confusion with, for example, the wider site area or the surrounding site. A glossary of technical terms should be included in the ES.

Presentation

A1.57 The ES should have all of its paragraphs numbered, as this makes referencing easier as well as accurate. Appendices must be clearly referenced, again with all paragraphs numbered. All figures and drawings, photographs and photomontages should be clearly referenced. Figures should clearly show the proposed site application boundary.

Confidential Information

A1.58 In some circumstances it will be appropriate for information to be kept confidential. In particular, this may relate to information about the presence and locations of rare or sensitive species such as badgers, rare birds and plants where disturbance, damage, persecution or commercial exploitation may result from publication of the information. Where documents are intended to remain confidential the applicant should provide these as separate paper and electronic documents with their confidential nature clearly indicated in the title, and watermarked as such on each page. The information should not be incorporated within other documents that are intended for publication or which the Planning Inspectorate would be required to disclose under the Environmental Information Regulations 2014.

Bibliography

A1.59 A bibliography should be included in the ES. The author, date and publication title should be included for all references. All publications referred to within the technical reports should be included.

Non Technical Summary

A1.60 The EIA Regulations require a Non Technical Summary (EIA Regulations Schedule 4 Part 1 paragraph 22). This should be a summary of the assessment in simple language. It should be supported by appropriate figures, photographs and photomontages.

APPENDIX 2 – LIST OF CONSULTATION BODIES FORMALLY CONSULTED

Note: the Prescribed Consultees have been consulted in accordance with the Planning Inspectorate's Advice Note three 'EIA Consultation and Notification' (version 6, July 2015)[9].

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Health and Safety Executive	Health and Safety Executive
The National Health Service Commissioning Board	NHS England
The relevant Clinical Commissioning Group	North Norfolk Clinical Commissioning Group
The relevant Clinical Commissioning Group	Norwich Clinical Commissioning Group
The relevant Clinical Commissioning Group	South Norfolk Clinical Commissioning Group
Natural England	Natural England
Natural England (Offshore Wind Farms)	Natural England (Offshore Wind Farms)
The Historic Buildings and Monuments Commission for England	Historic England - East of England
The Historic Buildings and Monuments Commission for England (OFFSHORE ONLY)	Historic England
The relevant fire and rescue authority	Norfolk Fire and Rescue Service
The relevant police and crime commissioner	Norfolk Police and Crime Commissioner
The relevant parish councils	Alderford Parish Council
	Attlebridge Parish Council
	Baconsthorpe Parish Council
	Barford Parish Council
	Bawburgh Parish Council
	Bixley Parish Council

[9] Available from: http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

SCHEDULE 1 DESCRIPTION	ORGANISATION
	Bodham Parish Council
	Booton Parish Council
	Bracon Ash Parish Council
	Brandiston Parish Council
	Briston Parish Council
	Brooke Parish Council
	Caistor St. Edmund Parish Council
	Cawston Parish Council
	Colney Parish Council
	Corpusty and Saxthrope Parish Council
	Costessey Parish Council
	Cringleford Parish Council
	East Beckham Parish Council
	East Carleton Parish Council
	East Tuddenham Parish Council
	Easton Parish Council
	Edgefield Parish Council
	Felthorpe Parish Council
	Framingham Earl Parish Council
	Great Melton Parish Council
	Great Witchingham Parish Council
	Haveringland Parish Council
	Hempstead Parish Council
	Hethersett Parish Council
	Heydon Parish Council
	High Kelling Parish Council
	Hockering Parish Council
	Holt Parish Council
	Honingham Parish Council
	Howe Parish Council
	Itteringham Parish Council

SCHEDULE 1 DESCRIPTION	ORGANISATION
	Kelling Parish Council
	Keswick and Intwood Parish Council
	Ketteringham Parish Council
	Little Barningham Parish Council
	Little Melton Parish Council
	Little Witchingham Parish Council
	Lyng Parish Council
	Marlingford and Colton Parish Council
	Matlaske Parish Council
	Morton on the Hill Parish Council
	Mulbarton Parish Council
	Newton Flotman Parish Council
	Oulton Parish Council
	Plumstead Parish Council
	Poringland Parish Council
	Reepham Parish Council
	Ringland Parish Council
	Salle Parish Meeting
	Salthouse Parish Council
	Sheringham Town Council
	Shotesham Parish Council
	Stoke Holy Cross Parish Council
	Swainsthorpe Parish Council
	Swannington Parish Council
	Swardeston Parish Council
	Taverham Parish Council
	Thurning Parish Council
	Trowse in Newton Parish Council
	Upper Sheringham Parish Council
	West Beckham Parish Council

SCHEDULE 1 DESCRIPTION	ORGANISATION
	Weston Longville Parish Council
	Weybourne Parish Council
	Wood Dalling Parish Council
	Wramplingham Parish Council
	Wymondham Parish Council
The Environment Agency	The Environment Agency - Essex, Norfolk and Suffolk
The Joint Nature Conservation Committee	Joint Nature Conservation Committee
The Maritime and Coastguard Agency	Maritime & Coastguard Agency
The Maritime and Coastguard Agency - Regional Office	The Maritime and Coastguard Agency - Norwich
The Marine Management Organisation	Marine Management Organisation (MMO)
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	Norfolk County Council Highways
The relevant strategic highways company	Highways England - East
The Coal Authority	The Coal Authority
The relevant internal drainage board	Norfolk Rivers Internal Drainage Board
Trinity House	Trinity House
Public Health England, an executive agency of the Department of Health	Public Health England
The Crown Estate Commissioners	The Crown Estate
The Forestry Commission	Forestry Commission - East of England
The Secretary of State for Defence	Ministry of Defence

RELEVANT STATUTORY UNDERTAKERS	
The relevant Clinical Commissioning Group	North Norfolk Clinical Commissioning Group

RELEVANT STATUTORY UNDERTAKERS	
	Norwich Clinical Commissioning Group
	South Norfolk Clinical Commissioning Group
The National Health Service Commissioning Board	NHS England
NHS Trusts	East of England Ambulance Service NHS Trust
NHS Foundation Trusts	Norfolk and Norwich University Hospitals Foundation Trusts
Railways	Network Rail Infrastructure Ltd
	Highways England Historical Railways Estate
	London & Continental Railways Ltd
Lighthouse	Trinity House
Civil Aviation Authority	Civil Aviation Authority
Licence Holder (Chapter 1 Of Part 1 Of Transport Act 2000)	NATS En-Route Safeguarding
Universal Service Provider	Royal Mail Group
Relevant Environment Agency	Environment Agency
The relevant water and sewage undertaker	Anglian Water
The relevant public gas transporter	Energetics Gas Limited
	Energy Assets Pipelines Limited
	ES Pipelines Ltd
	ESP Connections Ltd
	ESP Networks Ltd
	ESP Pipelines Ltd
	Fulcrum Pipelines Limited
	GTC Pipelines Limited
	Independent Pipelines Limited
	Indigo Pipelines Limited
	Quadrant Pipelines Limited
	LNG Portable Pipeline Services

RELEVANT STATUTORY UNDERTAKERS	
	Limited
	National Grid Gas Plc
	National Grid Gas Distribution Ltd
	National Grid Gas Plc
	Scotland Gas Networks Plc
	Southern Gas Networks Plc
	Wales and West Utilities Ltd
The relevant electricity distributor with CPO Powers	Energetics Electricity Limited
	ESP Electricity Limited
	Harlaxton Energy Networks Limited
	Independent Power Networks Limited
	Peel Electricity Networks Limited
	The Electricity Network Company Limited
	UK Power Distribution Limited
	Utility Assets Limited
	UK Power Networks Limited
The relevant electricity transmitter with CPO Powers	National Grid Electricity Transmission Plc
	National Grid Electricity Transmission Plc
	Blue Transmission Sheringham Shoal Limited

SECTION 43 CONSULTEES (FOR THE PURPOSES OF SECTION 42(B))	
Local Authorities	Breckland District Council
	Broadland District Council
	Cambridgeshire County Council
	Forest Heath District Council
	Great Yarmouth District Council
	King's Lynn and West Norfolk

SECTION 43 CONSULTEES (FOR THE PURPOSES OF SECTION 42(B))	
	District Council
	Lincolnshire County Council
	Mid Suffolk District Council
	Norfolk County Council
	North Norfolk District Council
	Norwich City Council
	South Norfolk District Council
	St Edmundsbury Borough Council
	Suffolk County Council
	The Broads National Park Authority
	Waveney District Council

NON-STATUTORY CONSULTEES	
Royal National Lifeboat Institution	Royal National Lifeboat Institution
The Historic Buildings and Monuments Commission for England	Historic England

APPENDIX 3 – RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

List of bodies who replied by the Statutory Deadline:

Anglian Water Services Limited
Barford and Wramplingham Parish Council
Broadland District Council
Coal Authority
Costessey Town Council
Cringleford Parish Council
Electric Network Company
Environment Agency
Great Yarmouth Borough Council
GTC Pipelines Limited
Health and Safety Executive
Historic England
Independent Pipelines
Independent Power Networks Limited
Marine Management Organisation
Maritime and Coastguard Agency
Matlaske Parish Council
Ministry of Defence - Defence Infrastructure Organisation
National Grid
National Grid Gas Distribution Limited
Natural England
Newton Flotman Parish Council
Norfolk County Council
Public Health England
Quadrant Pipelines Limited
The Crown Estate
Trinity House
Waveney District Council

Anglian Water Services Ltd
Thorpewood House
Thorpewood
Peterborough
PE3 6WT

Tel 0345 0265 458
Email:
planningliaison@anglianwater.co.uk
www.anglianwater.co.uk
Our ref 00018093

Helen Lancaster
The Planning Inspectorate
3D Eagle Wing
Temple Quay house
2 The Square
Bristol
BS1 6PN

Sent by email

22 November 2016

HORNSEA THREE OFFSHORE WIND FARM - SCOPING OPINION

Thank you for the opportunity to comment on the scoping report for the above project. Anglian Water is the water and sewerage undertaker for the proposed area. Please find enclosed our comments.

General Comments

Anglian Water is the statutory provider for water and wastewater for the development area and as such wastewater infrastructure and potable water infrastructure, which cross the development at different locations. These pipelines provide water and sewerage to the surrounding area and it is vital that these assets are protected during and after construction. Maps of Anglian Water's assets are available to view at the following address: http://www.digdat.co.uk/

We would welcome discussions with the applicant prior to the submission of the Draft DCO for examination. In particular it would be helpful if we could discuss the following issues:

- Wording of the Draft DCO including protective provisions for the benefit of Anglian Water
- Requirement for potable (clean) water and wastewater services
- Impact of development on Anglian Water's assets and the need for mitigation
- Pre construction surveys and ground investigations

Onshore Infrastructure

Paragraph 3.8.3 states that site investigations are due to be undertaken quarter 4 of 2016 and quarter 1 of 2017. Anglian Water would like to be consulted with regarding site surveys and ground investigations so we can mitigate any risks to our assets.

Table 10.4 – Impacts to be scoped

Table 10.4 states that water supply pipelines could be damaged and there could be impacts on water quality during construction, operational and decommissioning phases. It is recognised that a desk based study will be carried out, Anglian Water recommends early engagement so that we can input into this study.

Scoping Conclusions

Table 13.1 does not identify utilities, specifically water infrastructure. It is crucial that impacts on the network and on our assets are considered and any issues highlighted early on in the project.

It is suggested that the Environmental Statement should include reference to the foul sewerage network, sewage treatment and water services.

Asset Encroachment

The scoping report should include reference to Anglian Water's existing assets and any potential impacts from the above development. We would expect any requests for alteration or removal of foul sewers or water mains to be conducted in accordance with the Water Industry Act 1991.

Maps of Anglian Water's assets are available to view at the following address: http://www.digdat.co.uk/

Other Considerations

It is unclear what the requirement for potable water and wastewatrer services will be during the construction phases. Discussions with Anglian Water should take place to ensure this issue is considered at an early stage.

In addition we would wish to review any impact on any schemes for water or wastewater, which are currently in design, which may be affected by the development.

Reference is not made to Anglian Water's Resource Management Plan (WRMP) and it is suggested that this is taken into account. The WRMP is available to view at the following address:

http://www.anglianwater.co.uk/environment/our-commitment/our-plans/water-resource-management.aspx

If you wish to discuss any aspect of this response please do not hesitate to contact me.

Regards

[redacted]

Hannah Wilson
Planning Liaison Manager

THE QUEEN'S AWARDS FOR ENTERPRISE: SUSTAINABLE DEVELOPMENT 2015

Registered Office
Anglian Water Services Ltd
Lancaster House, Lancaster Way,
Ermine Business Park, Huntingdon,
Cambridgeshire. PE29 6YJ
Registered in England
No. 2366656.

an AWG Company

From:	Barford Parish Council
To:	Environmental Services
Subject:	DONG Energy Response
Date:	24 November 2016 16:24:55

FAO Helen Lancaster

Your ref: 161026_EN010080-000064

Barford and Wramplingham Parish Council have read the scoping report with interest. They would like make to comment as follows:

- The current approach of dealing with each offshore wind farm as separate entity is unsustainable. The Council would like to suggest that a national strategy for networking future development of off shore wind farms be produced as a more productive way to move forwards.
- The current arrangements for the supply of only one high voltage line into each County seems to be a National Security Threat. A national strategy could also address this for future development and safety.
- A local issue that the Council would like consideration to be given to the Wensum River being an SSSI. Any works in its vicinity would have the potential for a negative environmental impact.
- Finally, any works in the Tiffey valley should be avoided as there are already many local flooding issues in this area. A large flood amelioration scheme was undertaken in the last few years however there are still ongoing flooding issues in the area.

Yours sincerely

Heidi Frary

--
Heidi Frary
Clerk to Barford & Wramplingham Parish Council
92 Norwich Road
Barnham Broom
Norwich
NR9 4BU
01603 759215
barfordpc@gmail.com

Broadland District Council
www.broadland.gov.uk

Ask for : Mr M. Rooke
Direct dial : 01603 430571
Email : matthew.rooke@broadland.gov.uk
Our ref : MR/EIA Dong
Your ref : 161026_EN010080-000064
Date : 24 November 2016

H. Lancaster
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Dear Ms Lancaster

Scoping consultation: Application by DONG Energy Ltd. for an Order Granting Development Consent for the Hornsea Project Three Offshore Wind Farm. Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) Regulations 8 & 9.

Thank you for your letter dated 26 October 2016 in which you requested the comments of Broadland District Council in respect of the EIA Scoping Report.

It is noted that the scoping report includes questions on pgs. iv and 384. This response includes answers to questions that relate to Broadland District Council's interests in the proposals.

- **Are there any additional baseline data sources available that could be used to inform the EIA?**
  - The District Council is aware of another significant offshore wind farm that is currently being considered known as the Norfolk Vanguard Offshore Wind Farm by Vattenfall Wind Power Ltd. (PINS Ref. 161005_EN10079) which has a very similar onshore search area with a grid connection to the west of Norwich. The cumulative impact of these proposals should be fully assessed under this scoping report.
  - The existing cabling and substation at Salle used in association with the Sheringham Shoal offshore wind farm is located within this cable route search area and needs to be considered in this scoping report.

- **Have all potential impacts resulting from Hornsea Three been identified for each of the EIA topics within this Scoping Report?**

  - Landscape and visual resources
    - Taverham Hall School is a Registered Park & Garden and is within the cable route corridor search area but not referred to in Table 12.4 on pgs. 324-326.
    - Table 12.2 on pgs. 317- 320 doesn't include District Landscape Character Assessments.

  - Traffic and transport
    - No reference is made to the Northern Distributor Route (NDR) currently under construction within the cable route corridor search area which meets the A1067 west

of Taverham and continues north of Thorpe Marriott, Taverham connecting to the B1149 south of Horsford (pg. 341).

- A significant gas pipeline runs to the north of Blickling Hall and runs to the west of Heydon then south of Foulsham, through the cable route search corridor and beyond into Breckland's area – National Grid will comment on these aspects.

- **In light of the significant and relevant data and knowledge established through surveys and assessments undertaken for Hornsea Project One & Two, as well as publically available desktop data sources, does the reader agree that the intended evidence-based approach is appropriate for the Hornsea Three EIA?**

  - Yes subject to additional identified information being included.

- **Does the reader agree with the impacts to be scoped in, and out, of the assessment (including from Hornsea Three alone, cumulatively with other projects and on other EEA interests (i.e. transboundary impacts)?**

  - No comment

- **For those impacts scoped in, does the reader agree that the methods described are sufficient to inform a robust impact assessment?**

  - No comment

Other comments:

The Legend on Figure 12.3 incorrectly refers to the Broadland District Landscape Character Assessment (LCA) as 'The Broads District LCA' on pg. 313.

The main issues identified in the scoping report with the additions referred to above should be fully addressed within the environmental statement.

Should you require any further comments in this respect please do not hesitate to contact me.

Yours sincerely

[redacted]

Mr M Rooke
West Area Planning Manager

The Coal Authority

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

0345 762 6848
01623 637 119 (Planning Enquiries)
planningconsultation@coal.gov.uk
www.gov.uk/coalauthority

Ms H. Lancaster – Senior EIA and Land Rights Advisor
The Planning Inspectorate

[By Email: environmentalservices@pins.gsi.gov.uk]

Your Ref: EN010080

25 November 2016

Dear Ms Lancaster

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) – Regulations 8 and 9

The Hornsea Project Three Offshore Wind Farm Development Consent Order – EIA Scoping Consultation

Thank you for your letter of 26 October 2016 seeking the views of the Coal Authority on the EIA Scoping Opinion for the above proposal.

The Coal Authority is a non-departmental public body sponsored by the Department for Business, Energy and Industrial Strategy. As a statutory consultee, the Coal Authority has a duty to respond to planning applications and development plans in order to protect the public and the environment in mining areas.

The Coal Authority Response:

I have reviewed the proposals and confirm that the proposed development would be located outside of the defined coalfield. Accordingly, the Coal Authority has no issues that it would wish to see considered as part of the Environmental Statement for this proposal.

Yours sincerely

Mark Harrison

Mark E. N. Harrison *B.A.(Hons), DipTP, LL.M, MInstLM, MRTPI*
Principal Manager - Planning & Local Authority Liaison

From:	Hilary Elias
To:	Environmental Services
Subject:	Hornsea Project Three Offshore Wind farm
Date:	23 November 2016 16:53:37

Dear All

Costessey Town Council's comment to date is that all cables should be routed underground and not on overhead pylons.

If you have any queries about his please do contact me.

Regards

Hilary Elias
Clerk to Costessey Town Council

Costessey Town Council, The Costessey Centre, Longwater Lane, Costessey, Norwich, NR8 5AH
Tel: 01603 742958 @Costesseytc www.costessey.org.uk

From:	Sonya Blythe
To:	Environmental Services
Subject:	RE: EN010080 - Hornsea Project Three Offshore Wind Farm - Environmental Impact Scoping Notification and Consultation
Date:	21 November 2016 10:41:34

Dear Helen,

EN010080 - Hornsea Project Three Offshore Wind Farm

Thank you for your request to the parish council, asking what information consultees would like to see included within the applicants environmental statement.

This was discussed at the last parish council meeting, where it was agreed that the applicant should have to cover how they intend to be sympathetic to the environmental and ecological sensitivities within the Yare Valley (should the cables run through this area) to ensure as little disturbance and damage to the environment and wildlife as possible.

Kind regards,
Sonya

Sonya Blythe
Parish Clerk
Cringleford Parish Council
The Willow Centre
1-13 Willowcroft Way
Cringleford
Norwich
NR4 7JJ

Tel 01603 250198
clerk@cringlefordpc.org.uk
PLEASE NOTE NEW EMAIL ADDRESS

Parish Council Office 10.00-14.00 Monday to Thursday; Friday by appointment.

From: Thomas.Anderson@gtc-uk.co.uk
To: Environmental Services
Subject: 161026_EN010080-000064
Date: 01 November 2016 16:20:20

Please note in respect of the above reference, we have no comment to make.

This regards the following companies

Utility Grid Installations
Independent Pipelines
GTC
Electric Network Company
Quadrant Pipelines
Independent Power Networks

Kind Regards

Tom Anderson
Engineering Support Officer

GTC
Engineering
Energy House
Woolpit Business Park
Woolpit
Bury St. Edmunds
Suffolk
IP30 9UP
Tel: 01359 243376 (ext. 3376)
Fax: 01359 244046
Email: tom.anderson@gtc-uk.co.uk
Web: www.gtc-uk.co.uk

Ms Helen Lancaster - Senior EIA and Land Rights Advisor
The Planning Inspectorate
3/18 Eagle Wing
Temple Quay House (2 The Square)
Temple Quay
Bristol
Avon
BS1 6PN

Our ref: AE/2016/121038/01-L01
Your ref: EN010080-000064

Date: 24 November 2016

Dear Ms Lancaster

HORNSEA PROJECT THREE OFFSHORE WIND FARM SCOPING CONSULTATION

Thank you for your EIA Scoping consultation letter dated 27 October and received in this office by email on the same date.

We have reviewed the Environmental Impact Assessment Scoping Report submitted and whilst it appears to be thorough in most respects our response highlights areas that we think should be given more focus and consideration. In particular we draw your attention to our comments relating to cumulative effects, protection of water resources, use of HDD, biosecurity, identification of habitats and protected species, which should be addressed in greater detail by the applicant. For ease of reference we have addressed our concerns under themed headings because they are relevant to several areas of the Report.

Cumulative Effects

This project makes landfall on the north Norfolk coast and connection to the National Grid at Norwich so that the cable corridor follows a north/south route. The Norfolk Vanguard Offshore Wind Farm project is at a similar stage of development and makes landfall further south along the Norfolk coast connecting to the National Grid at Necton, Norfolk with the cable corridor following an east/west track. Therefore, if both projects proceed the two cable corridors will cross. We expect that there will be significant cumulative issues to occur at, and close to the area where the two corridors cross. The EIA should give careful consideration of the potential impacts of this crossing.

Protection of Water Resources

Geology and Ground Conditions

We are pleased that impacts detailed in Table 10.2 are scoped into the Assessment. If an area of land contamination is identified within the cable corridor which may affect principal and secondary aquifers a Preliminary Risk Assessment will need to be undertaken. Sufficient information should be provided the EIA to provide assurance that

the risks to the water environment are fully understood and can be addressed through appropriate measures including the need for site investigation, risk assessment and remediation. If significant contamination is found within the Application area, any proposals to undertake piling on site should be accompanied by a piling risk assessment.
We recommend that the cable corridor does not pass through areas designated as Source Protection Zone 1.

Use of HDD
HDD should be used where sensitive habitats cannot be avoided. Further information will be required detailing the sensitive locations where it is proposed to carry out HDD. However, ground investigation is required to inform the suitability of HDD and there may be locations where this technique would not work due to the geology. Appropriate pollution prevention measures will need to be in place to prevent the release of drilling fluid into the water environment and to prevent the release of silt downstream together with appropriate incident plans in case of any pollution incidents.

Biosecurity

There is no mention of biosecurity in the Scoping Report. We regard biosecurity as very important. The proposed works will cross multiple waterbodies across Norfolk and these activities present the risk of transmission of diseases and invasive species. Specific consideration should be given to works in and around waterbodies including all animals and plants listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Where machinery is to be used at several water locations bio control measures should be identified to prevent the spread of diseases such as chytridiomycosis and crayfish plague.

Ecology

Ecology and Nature Conservation Topic
The Environment Agency should be listed as a stakeholder in respect of this topic area given our responsibility for the health and biodiversity of waterbodies which provide valuable habitat for flora and fauna.

Identification of habitats and Protected Species
Paragraph 4.2.22 States that it should avoid “areas of ancient woodland habitat or other woodland of conservation interest”. It should be noted that not only woodland holds conservation interest. The NERC Act 2006 identifies priority habitats that are considered threatened and should be targeted for conservation interest. These habitats are listed within the UK BAP (Biodiversity Action Plan). In addition to this, Local Authorities publish their own LBAP (Local Biodiversity Action Plans) for habitats considered of conservation at a local level. These should all be taken into consideration when identifying the route. Both of these points are appropriate for the scoping of all parts of this route; the landfall area, the onshore ECR corridor and the HVAC booster station. This scoping exercise should consider avoiding all designated sites, not just internationally designated ones. The location of the HVAC station should also consider proximity to watercourses, proximity to known protected species populations utilising the data from the desk study, locally designated sites and NERC UKBAP habitats. HDD should be used where sensitive habitats cannot be avoided
Paragraph 11.1.5 lists the data sources from which biological records have been used. In addition to these, local RSPB, BTO and local ornithological groups should be consulted to acquire full dataset for the local areas.
Paragraph 11.1.6 details site specific surveys that are underway or proposed. In

Cont/d..

addition to those listed, the following species groups have the potential to be impacted and should be included:

- White clawed crayfish
- Freshwater fish
- Freshwater pearl mussel
- Hazel dormouse

General
Paragraph 11.1.9
It is not specified how close to the edge of the ECR search corridor the works may run. If within 5km of the edge of the corridor, the corridor will need to be widened and more data must be acquired to fully assess the area. At present no designated sites have been identified that are not directly within the ECR corridor.

Table 11.2
The report does not identify the potential of buried cables to impact on wildlife. The altered thermal and EMF (Electro-Magnetic Fields) must be investigated. This is especially important where the cable will cross watercourses.
This report does not sufficiently investigate the impacts associated with the maintenance of the onshore buried cables if a fault should occur. Where works are required, ecological assessment will be required on a case by case basis to determine necessary mitigation measures to be taken for the maintenance to be completed.
Utilities companies receive exemptions under numerous sections of environmental legislation, therefore prior arranged policies of no net ecological loss should be agreed.
The decommissioning section defines that a preliminary ecological survey (should read preliminary ecological assessment) and protected species surveys will be completed. This should specify that these will be resurveys at the time of decommissioning. The original surveys will no longer be valid considering the lifespan of this project. Surveys generally have a shelf life of 2 years before the data is considered obsolete and must be re-surveyed.
Decommissioning should also cover habitat loss. For example, the removal of substation buildings may represent the loss of habitat for bat species. It is also likely that vegetation will develop around structures and over the buried line that would need to be removed should any of these require removal.

Appendix B: Paragraph B.5.9
Within the WFD assessment paragraph B.5.9 states that the WFD will be examined within the PEIR once the ECR corridor has been decided. This principle also applies for the River Basin Management Plans for the river catchments detailed, and due regard should be made for the objectives within them.

Yours sincerely

Mrs Barbara Moss-Taylor
Planning Specialist

Direct dial 0208 474 8010
Direct fax 01473 271320
Direct e-mail barbara.moss-taylor@environment-agency.gov.uk

End

GREAT YARMOUTH
BOROUGH COUNCIL

Strategic Planning
Town Hall, Hall Plain
Great Yarmouth
Norfolk, NR30 2QF
Customer Contact Centre
Tel: (01493) 856100
Fax: (01493) 846110
Email: localplan@great-yarmouth.gov.uk
DX: 41119 Great Yarmouth 1

Service Manager: John Clements

Please ask for: Emily Smith
Direct Line: (01493) 846688
Email: emily.smith@great-yarmouth.gov.uk

25th November 2016

Dear Sir/Madam,

RE: Consultation on Hornsea Three Environmental Impact Assessment: Scoping Report

Thank you for consulting Great Yarmouth Borough Council on the Hornsea Three Offshore Wind Farm - Environmental Impact Assessment: Scoping Report. I am responding at Officer level, incorporating views from the Council's Strategic Planning and Economic Development teams. The onshore project area (ie. the landfall and grid connections) are outside of the borough of Great Yarmouth, therefore no comments have been made in relation to this. Comments forthwith relate to the offshore project area.

It is noted that, although no options for a primary base of operations and maintenance are identified in the document, Great Yarmouth should be considered as a strong option, particularly as Great Yarmouth has been recognised as a national Centre for Offshore Renewable Engineering (CORE). Policy CS6 of the Adopted Local Plan Core Strategy highlights that the Council will support the local economy through a number of measures, including supporting port related development proposals. With a long standing connection to the sea, the Borough Council encourages the development of port related activities which could increase employment and training, encouraging a greater presence of higher value technology and energy-based industries in the Borough.

> **"Policy CS6 – Supporting the local economy**
> The Borough of Great Yarmouth has a diverse local economy. It is the main service base in England for the offshore energy industry and has a thriving seasonal visitor economy. To ensure that the conditions are right for new and existing businesses to thrive and grow, there is a need to continue to strengthen

the local economy and make it less seasonally dependent. This will be achieved by:

...

d) Exploring the potential for up to 22 hectares of land reclamation to the north of the Outer Harbour at South Denes

e) Supporting port-related development proposals relating to the Outer Harbour and existing river port, in particular encouraging cargo handling and other port-reliant activities

f) Encouraging a greater presence of higher value technology and energy-based industries, including offshore renewable energy companies, in the borough ..."

Policy CS12 of the Adopted Local Plan Core Strategy highlights that the Council will support proposals which strengthen the development of the Borough as a centre for renewable energy and green industries. With a deep water outer harbour, a successful energy related Enterprise zone and a supporting Local Development Order in place, Great Yarmouth is well placed to help deliver the project. Great Yarmouth is England's offshore energy sector capital, with prospects of sharing in significant investment in energy over the coming decades. Great Yarmouth Borough Council will shortly be consulting on a draft Economic Growth Strategy.

"Policy CS12 – Utilising natural resources

The use and protection of natural resources is essential to the overall quality of life of the borough and to support wider social and economic sustainability objectives. This will be achieved by:

...

d) Supporting proposals that strengthen the development of the borough as a centre for renewable energy and green industries ..."

The Hornsea Three Scoping Report considers the potential impacts of the offshore windfarm on particular species and designated sites. The Greater Wash Marine possible Special Protection Area, which runs from Bridlington in Yorkshire, wrapping around the coast to Great Yarmouth is identified as an area which contains a number of ornithological areas, including the foraging areas for the Little Terns from the Great Yarmouth and North Denes SPA colony.

Policy CS11 of the Great Yarmouth Local Plan Core Strategy confirms that designated nature conservation sites will be conserved and enhanced, and protected species such as the Little Terns should be adequately protected from adverse effects of new development, and where negative effect are unavoidable, suitable measures will be required to mitigate any negative impact. Therefore any potential indirect impact will need to be assessed further through the Environmental Impact Assessment, and if necessary a Habitat Regulations Assessment.

"Policy CS11 – Enhancing the natural environment

The Council will work with other partner authorities and agencies to improve the borough's natural environment and avoid any harmful impacts of development on its biodiversity, geodiversity, landscape assets, priority habitats and species. This will be achieved by:
a) Conserving and enhancing designated nature conservation sites, including Sites of Special Scientific Interest (SSSIs), Special Protected Areas (SPAs), Marine SPAs, Special Areas of Conservation (SAC), RAMSAR sites, National Nature Reserves, Local Nature Reserves Norfolk County Wildlife Sites and Norfolk County Geodiversity Sites
..."

Overall it is expected that these identified concerns and issues should be addressed in the next stages of the Environmental Impact Assessment process, inclusive of the resulting Environmental Statement to be submitted in support of a Marine License application and planning application for the proposed scheme.

Thank you again for consulting Great Yarmouth Borough Council on these matters, and please ask for further information as necessary.

Yours faithfully,

Emily Smith
Strategic Planner

CEMHD Policy - Land Use Planning
NSIP Consultations
Building 2.2, Redgrave Court
Merton Road, Bootle
Merseyside, L20 7HS

Your ref: EN010080
Our ref: 4.2.1.5608

HSE email: NSIP.applications@hse.gov.uk

FAO Helen Lancaster
The Planning Inspectorate
Temple Quay House
Temple Quay,
Bristol
BS1 6PN

Dear Ms Lancaster

25 November 2016

PROPOSED HORNSEA PROJECT THREE OFFSHORE WIND FARM (the project)
PROPOSAL BY DONG ENERGY LTD (the applicant)
INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2009 (as amended) – Regulations 8 and 9

Thank you for your letter of 27th October 2016 regarding the information to be provided in an environmental statement relating to the above project. HSE does not comment on EIA Scoping Reports but the following information is likely to be useful to the applicant.

HSE's land use planning advice

Will the proposed development fall within any of HSE's consultation distances?

The 3 fixed sites that are within the Hornsea 3 Export Cable Route (ECR) search area are:

#0649 Bernard Matthews, Weston Green
#3374 Bernard Matthews, Great Witchingham
#3374 Bernard Matthews, North Site, Great Witchingham

The search area is also crossed by 8 pipelines operated by National Grid. They are:

NGG 1720 No 4 Feeder Bacton to Great Ryburgh
NGG 2739 No 27 Feeder Bacton to Kings Lynn
NGG 2648 No 2 Feeder Bacton to Kings Lynn Comp.
NGG 1709 No 3 Feeder Bacton to Roudham Heath
NGG1686 Bowthorpe to Drayton
NGG1684 Bowthorpe Supply
NGG1644 Yelverton to East Carleton
NGG1640 Silfield Tee to East Carleton

HSE recommends that the applicant contacts National Grid to discuss up to date information on pipeline location, as the applicant is advised not to rely solely on the information in this representation in establishing where encroachment on pipelines could occur.

Would Hazardous Substances Consent be needed?

The presence of hazardous substances on, over or under land at or above set threshold quantities (Controlled Quantities) may require Hazardous Substances Consent (HSC) under the Planning (Hazardous Substances) Act 1990 as amended. The substances, alone or when aggregated with others, for which HSC is required, and the associated Controlled Quantities, are set out in The Planning (Hazardous Substances) Regulations 2015.

Hazardous Substances Consent would be required if the site is intending to store or use any of the Named Hazardous Substances or Categories of Substances and Preparations at or above the controlled quantities set out in schedule 1 of these Regulations.

Further information on HSC should be sought from the relevant Hazardous Substances Authority.

Explosives sites

HSE has no comment to make in this regard, as there are no licensed explosive sites in the vicinity.

Electrical Safety

No comment.

Please send any further electronic communication on this project directly to the HSE's designated e-mail account for NSIP applications. Alternatively any hard copy correspondence should be sent to:

Mr Dave Adams (MHPD)
NSIP Consultations
2.2 Redgrave Court
Merton Road
Bootle, Merseyside
L20 7HS

Yours sincerely,

[redacted]

Dave Adams
CEMHD4 Policy

Historic England

EAST OF ENGLAND OFFICE

Ms Helen Lancaster
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
BRISTOL
BS1 6PN

Direct Dial: 01223 582710

Our ref: PL00045657

24 November 2016

Dear Ms Lancaster

PLANNING ACT 2008 (as amended) AND INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2009 (as amended)

HORNSEA PROJECT THREE OFFSHORE WIND FARM ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT PREPARED BY DONG ENERGY AND RPS ENERGY (DOCUMENT REFERENCE: HOW03/SCOPING REPORT/V1) Dated 26 October 2016

PINS REF: 161026_EN010080-000064

Thank you for consulting Historic England on the Environmental Impact Assessment Scoping Report for the Hornsea Project Three Offshore Wind Farm

Summary

The National Heritage Act (2002) made the Historic Buildings and Monuments Commission for England (Historic England) responsible for maritime archaeology in the English area of the UK Territorial Sea. We note however, that the proposed development zone for this project extends into the English offshore marine planning area (as defined by the Marine and Coastal Access Act 2009 and detailed within the UK Marine Policy Statement); therefore our advice for this proposed project within this offshore area is offered without prejudice to our responsibilities, as provided by 2002 Act.

Historic England Advice

We consider that this project has the potential to impact upon the historic environment in a number of ways. The impacts are likely to be both direct, which would result in permanent physical changes to the historic environment and indirect impacts through changes to the setting of heritage assets. We are also aware that impacts would vary throughout the life of the project. Some of the impact during the construction phase will be temporary, but elements of the project would bring permanent changes. Changes

and impacts are also not confined to just the footprints of the wind farm, cable route, cable relay station and substation and there is a potential impact from all element of the project to impact upon the setting of heritage assets. The project will also include additional areas of impact associated with the construction and decommissioning phases of the project - such as the dockside facilities and construction compounds. An assessment of all these separate elements of the project will need to be undertaken to the same high level.

All aspects of the historic environment are valued, however the particular remit of Historic England in relation to this project would be the impact upon the intertidal and fully marine historic environments and the terrestrial historic environment in regard to the highly graded designated heritage assets (scheduled monuments, grade I and II* listed buildings and registered park and gardens and Conservation Areas). Above the Mean High Water mark, the undesignated terrestrial archaeology would more properly be the province of the Norfolk County Council Historic Environment Service (NHES), and we recommend the applicant consult with the NHES at the earliest opportunity. Similarly, the conservation officers in the various local planning authorities would need to be consulted regarding impacts upon the setting of listed building and parks and gardens, including those listed at grade II, as well as conservation areas and other undesignated heritage assets within their remit.

We therefore offer the following comments on the Environmental Impact Assessment Scoping Opinion Hornsea Project Three Offshore Wind Farm Environmental Impact Assessment Scoping Report (Document Reference: HOW03/Scoping Report/V1) as notified by you in your letter dated 26th October 2016. Our advice is provided separately for the marine and terrestrial environment and these are set out below, further comment and a summary of our response to your questions are set out at the end of this letter.

OFFSHORE / THE MARINE HISTORIC ENVIRONMENT

It is understood that DONG Energy Power (UK) Ltd. is proposing to locate up to 400 wind turbine generators 160 km east of the Humber estuary and that the electricity export cables will run approximately 120 km south west to the Norfolk coast to a landfall site yet to be finalised and agreed. Furthermore, we note that to support understanding of the environmental conditions likely to be encountered within Hornsea Three, information gained from other survey and investigation programmes commissioned within the former Hornsea offshore wind farm evaluation Zone and work completed in support of EIA for Hornsea Project One, the Hornsea Project Two will be employed in support of this proposal. We are also pleased to see that other relevant publically available desktop data sources will be used and that for identified potential impacts, further data collection and assessment will be commissioned to determine the significance of the effect.

Under “Abbreviations and Glossary” we note the inclusion of (archaeological) Written Scheme of Investigation (WSI)” and we recommend that this section is expanded to “Protocol for Archaeological Discoveries” defined as “an agreed mechanism for action to be taken by all identified parties involved with the delivery of the project should works encounter elements of the previously unknown historic environment.”

At this stage the turbine, offshore substation(s) and offshore accommodation platform(s) foundation designs are undecided, but could comprise mono-piles, suction bucket jacket foundations, piled jacket foundations, mono suction buckets, gravity base structures and floating foundations.

Paragraph 3.5.1 (Water depths and seabed within the Agreement for Lease (AfL) area) - We note the Scoping Report the following statement that a geophysical survey was recently completed across the AfL array area and that this data will be used within the Preliminary Environmental Information Report (PEIR). A crucial matter therefore is any subsequent commissioning of geophysical and geotechnical surveys to be completed before the development commences as the primary means to inform turbine array layout and electricity export cable route selection. We must stress that the Applicant would need to discuss with us the survey strategies to be employed, so that data generated are sufficiently robust to enable professional archaeological interpretation and analysis. Furthermore the key element here is complete understanding between all parties regarding those activities that inform delivery of any consented project, but that take place prior to construction.

A fundamental principle must be that survey commissioning, interpretation and reporting are programmed, so that the eventual engineering design selected for delivery of this project, should consent be obtained, is fully informed and guided by professional archaeological advice. We must make this matter clear in reference to Table 6.1 (Consultation undertaken to date to inform the Hornsea Three Scoping Report and subsequent Environmental Impact Assessment) and the statement that, in agreement with Historic England, the “geophysical survey of the Hornsea Three array area and offshore ECR corridor was sufficient and appropriate to inform the marine archaeology EIA.” However, this statement must be seen in the context of how Chapter 9.4 (Marine Archaeology) was produced in reference to the Hornsea Three marine archaeology study area (the offshore turbine array area, the ECR corridor search area and intertidal zone seaward of MHWS) and the regional marine archaeology study area, based on the Humber Regional Environmental Characterisation (REC) and expanded to encompass the Hornsea Three offshore ECR corridor (as illustrated in Figure 9.13).

The provision of archaeological advice will be crucial given the statement (paragraph 7.1.36) that the electricity export cable landfall location is identified between Weybourne and Salthouse (Norfolk) and that crossing the intertidal zone could employ Horizontal Directional Drilling (HDD), trenching, dredging, jetting, ploughing, rock cutting or vertical injection. Similarly, advice will be highly relevant to inform any offshore cable installation programme that requires trenching to between 1-3m below seabed particularly given the proposed route across marine sand banks inclusive of Indefatigable Banks and Sheringham Shoal and Happisburgh Sand bank system off Norfolk.

ONSHORE / THE TERRESTRIAL HISTORIC ENVIRONMENT

It is understood that the exact locations for the landfall and onshore infrastructure are yet to be determined and that the exact onshore ECR corridor will be finalised prior to the EIA being completed once the landfall location is known. It is also understood that the decision as not yet been made whether to use HVAC or HVDC transmission systems and that this would influence the extent of the on-shore infrastructure which would be needed (e.g. a HVAC booster station is required for the HVAC transmission only).

From the information provided we understand:

- DONG Energy Power (UK) Ltd. are proposing hit landfall for up to six electricity export cables on a single point along broad landfall area running from Weybourne to West Runton on the north Norfolk coast. Exact location has yet to be determined

- A detailed onshore ECR study is being carried out in order to select the most appropriate onshore ECR route for Hornsea Three.

- The onshore HVAC booster station (if required) would be housed within a single or multiple buildings, in an open yard or a combination of the above.

- The onshore works at the landfall, the onshore HVAC booster station (if required) and onshore substation will require the establishment of temporary construction compounds for the storage of materials and plant, as well as space for small temporary offices, welfare facilities, security and parking.

- Construction compounds of various sizes will also be required along the onshore ECR corridor. The construction compounds, if deemed necessary, will be removed and sites restored to their original condition when construction has been completed.

- A new HVAC/HVDC substation would be required in order to connect Hornsea Three to the National Grid. The final location of the new onshore HVAC/HVDC substation is still to be determined but will be constructed within the onshore ECR corridor search area. It will be located as close as practicable to the existing 400 kV Norwich Main Substation site to minimise the potential landscape and visual impact

The Scoping Report therefore proposes the sites for the HVAC/HVDC booster stations, substation, the final route of the onshore ECR and the final landfall area search area will evolve using detailed constraints mapping, and preliminary surveys, technical feasibility studies and consultation feedback, considering a number of criteria, including *'minimising interface with sites affected by heritage designations (Scheduled Ancient Monuments, Registered Parks and Gardens, listed buildings, known archaeological assets)'.* EIA would assess defined search areas for each element, focused within the ECR corridor running from the Landfall zone to the substation site close to the existing 400 kV Norwich Main Substation.

As with the marine offshore works it is crucial that the project affords sufficient time and resources to undertake a full assessment of the historic environment within this area. It should determine the impact of the proposed development upon the designate and non-designated heritage assets (and their settings), and assess the level of any resulting benefit, harm or loss to their significance. It is important to ensure that the EIA fully identifies and defines the nature, extent and significance of the historic environment which is likely to be affected by the proposed works. This should include the environment within the physical footprint of the development works, as well as areas outside of these sites which could be indirectly impacted by the physical works - such as changes in costal or marine processes within the intertidal zone.

The assessment must also consider any potential impact upon the setting of nearby designated (and non-designated) heritage assets both within, and without, the onshore cable corridor. This work should include detailed consultation with Historic England, The Norfolk Historic Environment Service and the relevant local planning authorities' Conservation and Landscape Officers. It would require programmes of desk-based assessment and on-site investigation (in line with agreed and approved specifications). It should be undertaken at the earliest stage possible in order to inform the need for and scope of any mitigation which might be required. Such mitigation could include programme of archaeological works and works to preserve heritage assets *in situ* or via record. Mitigation may also require substantial changes to the design and location of the proposed developments.

Of particular note are the landfall area which has a complex historic landscape with a large number of non-designated archaeological sites (including of Second World War costal defences and prehistoric to post-medieval sites) and the area around the existing Norwich Main Substation at Trowse which lies within a rich and complex prehistoric and Roman landscape. This area south and southeast of Norwich (as well as the wider ERC corridor) contains a large number of scheduled monuments and other highly graded designated heritage assets, as well multiple non-designated heritage assets which would be considered of similar national importance.

Conclusion

Whilst we are broadly content with the approach and layout of the document, there are a number of areas where further information and amendments are required and where we have made specific observations on the historic environment which need to be considered within the EIA as noted in our comments above and in our details answers to the '*Suggested Questions For Consideration'*, which are set out below.

We recognise that there are detailed comments contained within this letter, and if any of the above needs further clarification, we would be happy to provide further advice.

Yours sincerely,

[redacted]

Will Fletcher
Inspector of Ancient Monuments
will.fletcher@HistoricEngland.org.uk

SUGGESTED QUESTIONS FOR CONSIDERATION

1) **Are there any additional baseline data sources available that could be used to inform the EIA?**

Historic England Comment

Paragraphs 4.2.4-5 mention the Zone Appraisal and Planning (ZAP) exercise for the Hornsea Offshore Wind Zone and that other information (e.g. UKHO records) as published through geo-spatial data such as "SeaZone". However, the commitment to commission new data is essential given that the ZAP exercise utilised low spatial resolution data as a means to provide general characterisation of the potential development area. For the purposes of effectively completing an EIA it will be necessary to commission and interpret survey data to an appropriate professional standard. Paragraph 9.5.4 (Seascape and visual resources - baseline data) includes reference to England's Historic Seascapes: Withernsea to Skegness Pilot Study (MoLAS, 2009).

However, it is important to acknowledge that this was one of five pilot projects completed at an earlier stage of English Heritage/Historic England's Historic Seascapes Characterisation Programme and that this pilot project is now redundant following the adoption of a substantial different methodological approach in the subsequent East Yorkshire to Norfolk HSC project completed in 2013. A particularly important matter is mentioned in paragraph 7.1.13: "In addition, as part of the Hornsea Three development, a geophysical and geotechnical survey at the Hornsea Three landfall area has also taken place. This will provide additional characterisation of the surface and subsurface conditions at the landfall to support the marine processes assessment". Therefore in reference to Table 7.4 (Impacts proposed to be scoped into the Hornsea Three assessment for marine processes) we request that in addition to assessment of these data by an "…experienced coastal geomorphologist in the context of the baseline understanding of the landfall area." That equal access by a professional and experienced geo-archaeologist is also incorporated into the design, delivery and specialist interpretation of these surveys so that technical reports are generated and appended to the relevant chapter of any PEIR.

In regards to the onshore historic environment, paragraphs 12.2.4 - 12.2.7 identify the range of resources to be consulted and assessed as part of the desk-based assessment - for example the Norfolk Historic Environment Record. We would recommend that this is expanded to include an assessment of the National Record for the Historic Environment (NRHE) and the National Heritage Lit for England (NHLE). The desk-based assessment should also consider information from available aerial photographic and LiDAR data, and details from past archaeological and geophysical investigations within the ECR corridor. Further consultation should be undertaken with

the Norfolk County Council Historic Environment Service and Historic England to agree the scope and extent of the desk-based works.

We note the comments in Paragraphs 12.2.12 that there are no government guidelines for assessing the importance of heritage assets and the approach proposed for doing this set out in paragraphs 12.2.10 and 12.2.11. We would however highlight that Historic England, as the government's advisor on all aspects of the historic environment, has provided a series of published guidance and good practice advice notes on how to assess the value and significance of the historic environment and how to assess and describe impacts upon them and their settings. Thee EIA should make full reference to the NPPF Planning Practice Guidance and the Good Practice Advice Notes produced by Historic England - in particular GPA 3: The Setting of Heritage Assets. In particular the EIA should consider the policies and guidance set out in Conservation Principles (Historic England 2008) which sets out the heritage values and the concepts behind how 'Significance;' is defined and assessed. We also have further guidance on geophysical survey, geo-archaeology and the assessment of the marine historic environment.

2) **Have all potential impacts resulting from Hornsea Three been identified for each the EIA topics within this Scoping Report?**

Historic England Comment

It was noticeable that this EIA Scoping Report only made one very brief reference (other than a definition offered in a glossary), in paragraph 9.4.24, to a Draft Written Scheme of Investigation and "Exclusion zones around sites of archaeological sensitivity". It is inadequate that no mention was made to a Reporting Protocol for Archaeological Discoveries e.g. as demonstrated by The Crown Estate (2014) Protocol for Archaeological Discoveries: Offshore Renewables Projects, published by Wessex Archaeology (Salisbury), on behalf of The Crown Estate. It is disappointing that not more consideration was given to how a WSI might be tailored to this proposed development.

For the on-shore works the EIA should fully consider the impact upon both designated and non-designated heritage assets. This should include the impact upon the setting of these assets. It is important to note that, depending upon the location of the proposed works and the asset type, the heritage assets effected by the proposed onshore works could be located outside of the boundaries of the defined Scoping Area (for example heritage assets with important long views across the landscape).

The EIA should assess nature and extent of the historic environment, identifying those heritage assets likely to be effected by each element of the proposed onshore development works. It should assess and describe the significance of these assets -

e.g. what matters and why it is important - including the contribution made by setting to this significance. 'Setting' is not confined to just visual considerations and the EIA must assess all relevant elements of an asset's setting - for example how the assets is traversed, its historical and spatial relationship with other features and the character and context of the surrounding historic landscape. It should also consider the impact from other environmental factors such as noise, traffic and lighting, where relevant. For the visual assessment photomontages, wireframe models and/or similar techniques should be used to illustrate and assess the impact from elements such as the booster station and substation. The EIA should asses the magnitude of impact upon the assets and the resulting levels of benefit, loss or harm to significance. This is in line with the principles and concepts within the National Planning Policy Framework (e.g. paragraphs 12.2.15 - 12.2.18).

We note that registered parks & gardens are considered as landscape designations within the Landscape and Visual Impact chapter. We would highlight that these are designated heritage assets (as defined and identified within the NPPF) and should therefore also be considered within the historic environment chapter (with regarded and reference to the LVIA) and in-line with the relevant criteria and methodology as set out above.

It is imperative that the EIA fully considers cumulative impact upon the setting of the designated and non-designated heritage assets, as well as cumulative impact from groundworks. It is possible that the impact of a development can effect below ground deposits over a much wider area - for example works may result in hydrological changes which could result in the desiccation and drying of wetland deposits and preserved waterlogged archaeological remains.

As the final design and specification for the built elements of the scheme have not yet been finalised, the EIA would need to consider the impact from all likely form of foundation design and all other groundworks which might be needed - such as landscaping and attenuation. Foundation designs could include piling and therefore and particular types of assessment and mitigation would be needed (such as geoarchaeological borehole, for example). It is important that the EIA acknowledges that all works would need to be followed by appropriate programmes of post-ex assessment, followed by detailed analysis, archiving and publication, tied in to national and regional research strategies. All supporting technical information produced for the EIA (desk-based assessments, evaluation and post-excavation reports etc.) should be included as appendices. Where relevant, the heritage chapter should be cross-referenced to other chapters or technical appendices; for example noise, light, traffic and landscape.

3) In light of the significant and relevant existing data and knowledge

established through surveys and assessments undertaken for Hornsea Project One and Hornsea Project Two, as well as publically available desktop data sources, does the reader agree that the intended evidence-based approach is appropriate for the Hornsea Three EIA?

Historic England Comment

We reserve judgment on this matter until a decision to implement an Evidence Plan Process (EPP), as a means to structure technical stakeholder consultation during preparation of the ES, is explained to us. However, we do acknowledge that we were supplied with a draft Hornsea Project Three Offshore Wind Farm Marine Archaeology Road Map and that an associated meeting was held on 20th July 2016. Therefore in the context of the present planning stage of this proposed development we recommend that in consideration of the potential risk to the historic environment, both known and unknown, that Historic England is officially invited by the Applicant to participate in any EPP as a priority action.

4) **Does the reader agree with the impacts to be scoped in, and out, of the assessment (including from Hornsea Three alone, cumulatively with other projects and on other European Economic Area interests (i.e. transboundary impacts))?**

Historic England Comment

Attention should be given to cultural heritage associated with wrecks (vessel or aircraft) of non-British, European nationality as a means to given consideration to this matter, which should be developed with a sound methodological approach to determine the nature and substance of any transboundary impacts as relevant to this proposed project. Furthermore, given the distance offshore of the proposed turbine array (approximately 121 km/65 Nautical Miles at closest point) and that the EIA Scoping report proposes to scope out impacts to the setting of onshore heritage assets from the offshore wind farm. It therefore seems that even if maximum possible height of turbine tower is utilised (325 metres above LAT) that it is unlikely for visibility matters to be considered relevant for any heritage assets and associated setting on any adjacent coast during either daylight or from night time illumination. However, in terms of Historic Seascape Character (HSC) it will be relevant for the Applicant to consider how further change might be accommodated given the present perception of historic seascape character in this part of the North Sea. Similarly, cumulative impact should look beyond any claim that this project is self-contained and consider palaeolandscapes throughout the Hornsea offshore wind zone. We acknowledge that paragraphs 9.4.26-28 address matters to do with potential cumulative impacts, which we see as directly relevant to the completion of the EIA for this proposed project and for inclusion within this EIA exercise.

For on-shore heritage the EIA should note that non-designated heritage assets also have a setting (which therefore need to be need to be assessed) and that there could be numerous archaeological sites which, although not designated, would be consider to be of national importance and should be afforded similar consideration as scheduled monuments. This is considered in the NPPF under paragraph 139.

The Scoping Report proposes to scope out the impact upon below ground and above ground archaeology during the 'decommissioning stage' for all elements of the project (as this would be covered during construction stage) however it should be noted that the demolition of buildings and infrastructure can have an impact greater than that of constructions -for example if grubbing our of foundations or remediation of contaminants is required - and therefore this should be considered as part of the EIA.

Given that the exact route of the cable corridor has not yet been determined, there is an opportunity to scope out the physical impacts upon the highly graded designated heritage (scheduled monuments, grade I and II LB and RP&Gs) by including a policy in the EIA scoping that guarantees the final cable route would avoid these assets. The location of the highly graded designated heritage assets are known and mapped in the scoping report. There is therefore the ability to, at this early pre-application stage, place exclusion zones around these assets and define area where the cable route, or other on-shore infrastructure, will not be placed.*

5) **For those impacts scoped in, does the reader agree that the methods described are sufficient to inform a robust impact assessment?**

Historic England Comment

We note some reference to geophysical surveys albeit confusing if such surveys have been completed or are yet to be commissioned during the period of ES production (i.e. before submission of any application). Regarding, geotechnical site investigations we must ask if the comment made in paragraphs 3.7.27 and 3.7.60 means that any geotechnical survey will only be commissioned for the purposes of detailed design of the foundation structures and to confirm the exact electricity export cable route and therefore when such data acquisition will be timetabled.

The EIA should include scope for continue consultation with the Norfolk Historic Environment Service and Historic England. In particular it should note that there is a potential for new archaeological sites identified and for existing sites to be designated as scheduled monuments or listed buildings between the submission of the EIA scoping and the commencement of on-site works.

Please see also comments above regarding assessment of significance and values of designated heritage assets above.

Additional Comments:

Paragraph 9.4.21 is to be expanded to include - *Gribble, J. and Leather, S. (2011). Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector. Published by COWRIE Ltd*

Table 9.10 (Impacts proposed to be scoped into the Hornsea Three assessment for marine archaeology) details the proposed programme for data collection and analysis required to characterise the baseline environment for the EIA. In particular, we noted the statement that "…geophysical survey of the Hornsea Three marine archaeology study area is proposed in order to establish the ground conditions." However, we require this statement to be reconciled with the statement made in paragraph 3.5.1 which implies that geophysical survey (unspecified techniques) has already been completed. We therefore request that survey acquisition across the offshore project area is included within the business of any EEP and that Historic England is included. We consider this to be a relevant matter given the comment made in this table that "No Hornsea Three specific modelling is proposed to be undertaken to inform this impact assessment"

Paragraph 9.5.7 (within Seascape and visual resources) describes how the proposed Hornsea Three array area is identified within the 'Dogger Deep Water Channel' National Seascape Character Areas (NSCA) with the electricity export cable to north Norfolk crossing the 'East Midlands Offshore Gas Fields' NSCA. Furthermore, paragraph 9.5.14 (Historic Seascape Character (HSC) areas), references the Broad Historic Character Types (BHCT) within which this proposed development might occur with the array area located within the following BHCTs: 'Fishing', 'Industry' and 'Communications' and the landfall area is located in an area which is identified as having 'Fishing' and 'Communications' BHCT. Paragraphs 9.5.21-23 (Historic Seascape Character (HSC) assessment), identifies that there might be impacts on HSC, particularly during the operation and maintenance phase of this proposed development and that such matters should be addressed within the Hornsea Three Marine Archaeology Environment Statement chapter rather than a standalone Seascape and Visual Resources chapter. However, we do not support this approach given the substance and purpose of HSC as explained within published guidance and completed projects within the HSC programme. We must also encourage the focus of this assessment to be on determining any change to the historic character, as presently perceived, and the capacity of that historic character to accommodate change as proposed by the Hornsea Three development. Furthermore we note the following, as summarised in Table 9.12, regarding "…any additional data collection (e.g. site-specific surveys) and/or supporting analyses (e.g. modelling) that will be required to enable a full assessment of the impacts." We must question this matter given the availability of geo-spatial HSC data and we request an explanation of what additional data collection will be necessary and how any modelling might be conducted. It is therefore directly relevant that matters to do with determining

significance of the effects on HSC adopt a narrative approach as a means to explain what, if any, change is likely. We therefore cannot agree with Table 9.13 (Impacts proposed to be scoped out of the Historic Seascape Character (HSC) assessment), regarding any "operation and maintenance" phase with specific reference to the intention to scope out "sea surface" character types.

We note the criteria set out in section 5 and tables 5.1 and 5.2 for the assessment of significance, and the magnitude of effect. We would take this opportunity to highlight that whilst standardised EIA matrices are useful tools, we consider the analysis of setting, seascape, significance and the impact upon heritage assets as a matter of qualitative and expert judgement which cannot be achieved solely by use of systematic matrices, ridged criteria or scoring systems. Historic England recommends that these should are seen primarily as tools supporting a clearly expressed and non-technical narrative argument Fore onshore heritage, the EIA should use the ideas of benefit, harm and loss (as described in NPPF) to set out 'what matters and why' in terms of the heritage assets' significance and setting, together with the effects of the development upon them.

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161026_EN010080-000064
Our reference: DCO/2016/00001

[By email only]

25 November 2016

Dear Ms Lancaster,

RE: Formal scoping request under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 for the proposed Hornsea Offshore Wind Farm Project Three by DONG Energy Ltd.

Thank you for your scoping opinion request of 26 October 2016 and for providing the Marine Management Organisation (MMO) with the opportunity to comment on the Hornsea Project Three Offshore Wind Farm scoping request.

Please find attached the scoping opinion of the MMO. In providing these comments, the MMO has sought the views of our technical advisors at the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and the MMO Coastal Office (Eastern Area).

If you require any further information, please do not hesitate to contact me using the details provided below.

Yours sincerely,

Richard West

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Enclosed: MMO Scoping Opinion: Hornsea Project Three Offshore Wind Farm

Marine Management Organisation

Scoping Opinion

Title: Hornsea Project Three Offshore Wind Farm

Applicant: DONG Energy Ltd.

MMO Reference: DCO/2016/00001

Contents

1. Proposal....2
2. Scoping Opinion....2
3. Nature Conservation....2
4. Coastal Processes....4
5. Benthic Ecology....5
6. Fish and Shellfish Ecology and Fisheries....5
7. Marine Mammals....7
8. Navigation / Other Users of the Sea....8
9. Dredging....8
10. Water Quality....9
11. Cumulative Impacts....9
12. Conclusion....9
References....10

1. Proposal

1.1. Hornsea Project Three (P3) is a proposed offshore wind farm (OWF) including up to 400 wind turbine generators. The site is located in the southern North Sea, with a total generating capacity of up to 2,400 megawatts (MW), and will include all associated offshore and onshore infrastructure. The Hornsea P3 array area is approximately 696 square kilometres (km^2) and is located approximately 120 km north-east of the Norfolk coast and 160 km east of the Yorkshire coast. The Hornsea P3 array area lies to the east of Hornsea Project One and Hornsea Project Two OWFs and is located within the former Hornsea Zone.

1.2. The proposed Hornsea P3 offshore export cable route (ECR) corridor search area extends from the Norfolk coast, offshore in a north-easterly direction to the western and southern boundary of the Hornsea P3 array area. The offshore ECR corridor is approximately 120 km in length. Onshore cables will connect the OWF from the North Norfolk coast to the onshore high voltage alternating current (HVAC) substation or high voltage direct current (HVDC) converter substation, which will in turn connect to an existing National Grid substation. Hornsea P3 is intended to connect to the Norwich Main National Grid substation located to the south of Norwich. Hornsea P3 proposes an offshore generating station with a capacity of greater than 100 MW and therefore is a Nationally Significant Infrastructure Project (NSIP). As such, there is a requirement to submit an application for Development Consent to the Planning Inspectorate (PINS).

2. Scoping Opinion

2.1. The applicant has prepared a scoping report entitled *"Hornsea Project Three Offshore Wind Farm Environmental Impact Assessment: Scoping Report",* which has been submitted to the Marine Management Organisation (MMO) via PINS.

2.2. The MMO agrees with the topics outlined in the scoping report and in addition recommends that the following aspects are considered further during the EIA process and should be included in any resulting EIA report.

3. Nature Conservation

3.1. The proposed Hornsea P3 OWF array area and ECR corridor are located within the boundaries of Cromer Shoals Chalk Beds Marine Conservation Zone (MCZ), Markham's Triangle recommended Marine Conservation Zone (rMCZ), The Wash and North Norfolk Coast Special Area of Conservation (SAC) and North Norfolk Sandbanks and Saturn Reef candidate Special Area of Conservation (cSAC). In addition, Hornsea P3 has the potential to impact upon designated and candidate/recommended protected areas including The Wash Approach rMCZ, Haisborough, Hammond and Winterton cSAC, Klaverbank Site of Conservation Interest (SCI), the Southern North Sea proposed SAC and the North Norfolk Coast, which is protected under a range of environmental legislation. Issues pertinent to specific marine protected areas are outlined below.

3.2. Cromer Shoals Chalk Beds MCZ

3.2.1. The proposed ECR corridor would pass through Cromer Shoals Chalk Beds MCZ. The MMO considers that it would be difficult to avoid impacting upon designated features within the MCZ and recommends that due consideration should be given to alternative cable routes within the EIA process.

3.2.2. The scoping report proposes that beam trawl and grab samples are used to assess the benthic communities along the ECR route (p106). The MMO considers that both survey methods have the potential to impact upon the designated MCZ features. Grab sampling is likely to be difficult given the composition of the benthic substrate, particularly moderate and high energy circa- and infra-littoral rock and sub-tidal coarse and mixed sediments. Grab sampling of these and exposed chalk substrates is likely to result in a high number of misfires, potentially compounding any damage to associated benthic communities. Depending on the weight of the beam trawl bar, this survey technique has the potential to cause significant damage to fragile benthic communities within the MCZ. The MMO therefore suggests that existing MCZ characterisation survey data is supplemented with the use of drop-down video (DDV) surveys to inform the EIA report as required. This would limit the potential impact of destructive survey techniques on protected MCZ features.

3.3. Markham's Triangle and The Wash Approach rMCZs

3.3.1. Recommended Marine Conservation Zones are not a material consideration for new developments until such time as designation proposals are put out for public consultation. Formal consultation on Tranche Three MCZs is planned for 2017, with designation planned for the following year. The MMO welcomes the applicant's approach to screen in potential impacts upon Markham's Triangle and The Wash Approach rMCZs, given the development timescale outlined for the EIA process.

3.4. European Sites

3.4.1. The proposed Hornsea P3 array area and ECR corridor would have potential impacts upon European sites, designed under the EU Habitats Directive (92/43/EEC), including the following;

- ECR corridor passes through the eastern edge of The Wash and North Norfolk Coast SAC,
- ECR corridor passes through the north-western edge of the candidate North Norfolk Sandbanks and Saturn Reef cSAC,
- Haisborough, Hammond and Winterton cSAC lies to the south-east of the proposed ECR corridor,
- Klaverbank SCI lies directly east of the Hornsea P3 array area, adjoining the eastern boundary of Markham's Triangle rMCZ,
- North Norfolk Coast SAC and SPA lies immediately to the west of the proposed ECR landfall point. The North Norfolk Coast is also a Site of Special Scientific Interest and a designated Ramsar site,
- The Southern North Sea proposed SAC.

3.4.2. The MMO would expect that the potential impact of the development upon the designated features of the sites outlined in paragraph 3.4.1, including in combination with other plans or projects, will be considered as part of the Habitats Regulations Assessment process.

4. Coastal Processes

4.1. The MMO considers the scoping assessment approach and data gathering for coastal processes issues within the UK Economic Exclusion Zone (EEZ) to be generally appropriate. We note that no impacts are proposed to be scoped out of the assessment for marine processes within the UK EEZ. The applicant has, however, proposed to screen out transboundary impacts on marine processes from the EIA process (Appendix A 1.4, page 400).

4.2. The applicant does not anticipate transboundary impacts on marine processes because:

- the *"offshore component of Hornsea Three lies wholly within UK territorial waters";*
- *"any impacts on marine processes will be confined to a localised area within the footprint of the offshore components of Hornsea Three"* and
- *"impacts from sediment disturbance when installing foundations and cables are likely to be localised and of temporary duration due to resettlement of sediments*." (Appendix A 1.4.7, p405).

4.3. With regard to bullet point one, the applicant is advised that UK territorial waters extend to 12 nautical miles from mean low water mark, whereas the UK EEZ extends up to 200 nautical miles from the shore, encompassing the proposed Hornsea P3 array area.

4.4. The MMO does not agree with screening out transboundary impacts based upon the information provided, given the array area is only 10 km from the Dutch EEZ and the zone of influence for marine processes impacts from the wind farm may go beyond the boundary between EEZ waters. The array area is also 10 km from the Dutch Klaverbank SCI designated site.

4.5. The Dutch coast lies approximately 150 km from the Hornsea P3 array. Cumulative impacts of Hornsea One and Hornsea Two have been assessed for the Yorkshire and Norfolk coasts, which lie approximately 160 km and 120 km from the Hornsea P3 array. Since transboundary marine processes impacts were screened out from the assessment of Hornsea One and Two, there is no sufficient baseline information to inform transboundary impacts. The meteocean analysis carried out for Hornsea One and Two has, for example, only considered the UK EEZ and the UK coastline and the proposed approach for the Hornsea P3 EIA may not be appropriate to assess transboundary impacts. The MMO recommends that a review of hydrodynamic and sediment dynamic data is undertaken in order provide an overview of the information available from EIA assessments of Hornsea One and Two. This would provide information as to whether sufficient data is available to adequately inform the EIA for Hornsea P3.

4.6. The scoping report identified the need for scour protection around wind farm structures and the development of a cable specification and installation plan. Preliminary mitigation and monitoring measures are to be provided in the Preliminary Environmental Impact Report (PEIR) (*Next Steps*, Page iv of 459). The MMO advises that additional information will be required to properly assess the potential impacts on the marine environment as part of the EIA process. These include details of the quantity, height and seabed take for the export cables and cable protection measures.

5. Benthic Ecology

5.1. The MMO agrees that the subtidal habitats and species within Hornsea One and Two areas have been well characterised due to the density of sampling. The sampling at Hornsea P3 is, however, generally at 5 km spacing with an area to the east of the site currently un-sampled by grabs. Effort has been made to increase the sampling effort and include the data collected for the Markham's Triangle rMCZ, but gaps are still evident in the eastern portion of the site. The MMO considers that additional sampling may be required in this area, depending upon the preliminary results from the geophysical survey of the Hornsea P3 array area.

5.2. The applicant is encouraged to focus more on the habitats and species specifically present within the Hornsea P3 project area in the final EIA report. The habitats and species present within and directly around the Hornsea P3 area will be more directly impacted by the development than species and habitats present across the former Hornsea Zone. We would therefore advise focusing analysis on the data directly related to the Hornsea P3 site rather than including all data collected across the former Hornsea Zone.

5.3. The information presented in Section 8.1.20 *(Benthic Subtidal and Intertidal Ecology: Designated Areas)* suggests that suspended sediment from the construction phase of the development may extend up to 16 km from the source. The MMO suggests that transboundary effects on benthic ecology are screened into the EIA process considering the proximity of Klaverbank SCI (11 km) to the Hornsea P3 site.

5.4. The MMO recommends that the applicant reviews the Cefas 2012 Southern North Sea Synthesis Harmon grab data, which partly covers both the Hornsea P3 array area and ECR corridor. Cefas can supply this data on request. Samples collected for the Humber REC and the Southern North Sea Synthesis also fall within the array area to aid site characterisation, in addition to the surveys mentioned within the scoping report.

6. Fish and Shellfish Ecology and Fisheries

6.1. The MMO considers that the most relevant impacts to fish ecology have been scoped into the EIA process and that data sources appear to be appropriate. The majority of fishing vessels working in the Hornsea P3 area are likely to be beam trawlers, potentially flagged to the UK, Netherlands, France, Germany or Belgium.

6.2. Commonly fished areas are around Markham's Hole and Silver Pit. The wind farm array is adjacent to a commercial fishing ground (Botney Gut/Silver Pit) where *Nephrops norvegicus* are targeted using *Nephrops* otter trawls. This will need to be given consideration in the EIA.

6.3. There are approximately 20 beach-launched commercial fishing vessels under 10m working from Hornsea, Withernsea and Easington on the Holderness Coast. The main activity of these vessels is inshore potting for brown crab (*Cancer pagurus*) and lobster (*Homarus gammarus*). Fishing vessels from The Wash working out of King's Lynn and Boston target cockles (*Cerastoderma edule*) and brown shrimp (*Crangon crangon*) and although most are over 12m, they also typically work inshore.

6.4. The inshore area of the proposed ECR corridor forms part of an important crab, lobster and whelk (*Buccinum undatum*) fishery. These species are targeted using baited pots which are left on the seabed to fish for up to several days. In recent years the landings of whelks have increased such that it now forms an important fishery, with peak catches occurring during the winter months. Conversely, peak catches for crab and lobster occur during spring-autumn, though catches occur all year around for all three species.

6.5. The North Norfolk fishing fleet operate out of ports from The Wash estuary around the North Norfolk coast to beyond Lowestoft. The area extending offshore from Wells-Next-The-Sea to Cromer represents the most important area for this fishery. The majority of the fleet is made up of under 10m vessels, with many of those being beach launch vessels which are only able to fish on the inshore grounds. It is important to note that the fishing distribution of this fleet will not be captured by a Vessel Monitoring System (VMS) as most, if not all vessels, are under 12m in length and therefore do not have VMS installed (VMS has been required on vessels 12m+ since 2013).

6.6. In addition, the potential limitations of official landings statistics for <10m fleet should be carefully considered as buyers and sellers notes are not produced. Many of the vessels will have limited ability to relocate their pots during surveys and cable laying works, due to heavily fished grounds in adjacent areas and the size of their vessels limiting the range they can travel.

6.7. The impact *'Hornsea Three offshore ECR corridor construction activities leading to longer steaming distances to alternative fishing grounds'* has been scoped out of the EIA process for commercial fisheries (Impact 6, Table 9.1 p193). The justification states that the construction activity will occur for a short period of time and therefore longer steam times will only be experienced for a limited amount of time. Smaller, beach-launched vessels will likely be very limited as to where they can relocate their gear during cable laying, owing to vessel limitations. Whilst longer steaming times may occur for a relatively short period of time, it may have a greater impact upon this proportion of the local fleet due to their limited ability to carry out longer steams to alternative grounds. We therefore recommend that the impact of longer steaming distances to alternative fishing grounds is scoped in to the EIA process.

6.8. The applicant recently submitted a position paper to the Expert Working Group meeting on 17th November 2016 which contained existing geophysical and sediment (PSA) data on the characterisation of sandeel habitat to provide an overview of data coverage and paucity. Beam trawl data has also been collected to the west of the Hornsea

P3 array area. It has been previously agreed that it would be beneficial to present this data before we provide a final view on the sufficiency of information for sandeel habitat assessment for EIA purposes. The MMO notes that the report has been submitted but has not yet considered and as such we are unable to confirm the sufficiency of the information and the proposed approach.

6.9. In Table 8.9 (showing the impacts proposed to be scoped into the Hornsea P3 assessment for fish and shellfish ecology), it is not clear whether the impacts of construction activities will be considered for both fish and shellfish or just fish (both receptors will be assessed for the other phases). The EIA should consider key shellfish receptors during the construction and other phases. Although there are no set impact criteria to date for marine invertebrates, the applicant is encouraged to review existing peer-reviewed literature in order to support their conclusions. Studies conducted thus far identify possible negative effects from noise (e.g. Wale *et al*., 2013a, 2013b, Solan *et al*., 2016).

6.10. The presence of vessels on site has the potential to create disruption to the commercial fishing activity. Some vessels may face longer steaming distances to alternative fishing grounds and more fishing pressure will be applied in areas outside of the exclusion zones. The impacts on commercial fishing activity can be reduced if the timings of works are well communicated with industry.

6.11. It is important the Eastern Inshore Fisheries and Conservation Authority (IFCA) and the fishing industry are consulted to establish the distribution of potting effort throughout the region and in relation to the proposed cable corridor in particular. The MMO recommends the continued use of an Offshore Fisheries Liaison officer, a Company Fisheries Liaison Office and an Onshore Fishing Industry Representative to communicate with the fishing industry as outlined in FLOWW Best Practice Guidance (2014).

7. Marine Mammals

7.1. The scoping report has identified the potential for transboundary impacts upon fish, shellfish and marine mammals due to construction, operational and decommissioning impacts of Hornsea P3, particularly for underwater noise (Appendix A). The MMO supports the proposal that such impacts on marine mammals and their nature conservation interests are screened into the EIA process. Potential impacts upon European Sites with marine mammals as a qualifying feature will be assessed within the Habitats Regulations Assessment (HRA).

7.2. No specific modelling is intended to be undertaken to assess vessel disturbance or decommissioning on marine mammals, which is proposed to be considered using a literature review. As the main concern is impact piling, this would be acceptable provided that a comprehensive review is undertaken.

7.3. One way to mitigate the potential risk of impacts on marine mammals is to reduce the amount of noise emitted at source. Noise reduction technologies are available to mitigate against the noise impacts from pile driving, such as large bubble curtains and acoustic barriers integrated into the piling rig (e.g. IHC Noise Mitigation System). The applicant is encouraged to consider using such measures during pile driving operations,

particularly given the high hammer energies and larger foundations associated with the development proposal. The applicant must also consult the JNCC (2010) guidance with regard to mitigation to prevent injury and motality to marine mammals.

8. Navigation / Other Users of the Sea

8.1. The MMO agrees with the approach and data sources outlined by the applicant regarding navigation and other sea users. We would expect due consideration of all navigation and sea user issues to be included within the EIA process. We understand that the applicant will be holding a number of public consultation events to involve, engage and communicate with consultees prior to submission of the proposal to PINS. Iterative discussions with consultees upon the requirement and feasibility of any mitigation measures are expected to provide a robust assessment of the proposed development.

9. Dredging

9.1. From experience on other OWF projects, it is anticipated that disposal of dredge or drill arisings from the preparation and installation of foundations or the clearance of sand waves may be required. It is, however, acknowledged that this element of the project was not specifically mentioned in the scoping report provided by the applicant.

9.2. Seabed preparation, dredging and disposal of material arising from the installation of infrastructure is a licensable activity and disposals are only permissible within designated disposal sites. As no disposal site is present in the area of the Hornsea P3 project, should on-site disposal be required, a new disposal site must be characterised. A sign-posted characterisation report or EIA report chapter should include as a minimum:

- The need for the new disposal site;
- The dredged material characteristics;
- The disposal site characteristics;
- The assessment of potential effects; and
- The reasons for the site selection.

9.3. Relevant data for the disposal site characterisation should be available from other chapters of the EIA report and will potentially only require sign-posting to produce a dedicated disposal site characterisation section.

9.4. Dredging and disposal site characterisation reports were produced by SMartWind for the Hornsea One and Hornsea Two projects. The MMO recommends that a similar template is followed for the Hornsea P3 disposal site characterisation. Guidance on the selection of dredged material disposal sites is available from Cefas (2009).

9.5. The disposal method must be provided and the volume of disposed material must be estimated and included in the application in order to make an assessment and for volumes to be included on any Development Consent Order that the MMO receives for review. Contaminant testing of sediments, particularly if dredging is required, may be needed. Further comment can be provided on this issue once more detail on disposal activities emerges.

10. Water Quality

10.1. The MMO notes that, although additional benthic characterisation surveys are planned for the Hornsea P3 ECR corridor (Table 8.4, p106), the applicant intends to scope consideration of the potential impacts of re-suspended contaminated sediment arising from activities in the ECR corridor out of the EIA process.

10.2. The applicant has identified the diverse range of activities carried out by other sea users in the vicinity of the Hornsea P3 project area. Recent information on sediment contamination in the proposed ECR corridor would allow for due consideration of any potential impact of the suspended sediment plume arising from cable installation activities. We recommend that the applicant explains the rationale for screening out of the EIA process the potential impacts of re-suspended contaminated sediment in the ECR corridor.

11. Cumulative Impacts

11.1. With regard to the proposed screening methodology for cumulative impacts of the development (Figure 5.2: *Proposed methodology for Hornsea Three for the screening of potential projects/plans to provide cumulative impacts*, p54), the applicant has suggested that, if there is not adequate confidence in the data, a cumulative impact will be scoped out. The MMO would expect further data gathering as required if data confidence were not adequate, otherwise that potential cumulative impacts remained screened into the EIA process.

11.2. In addition, it is appropriate that consideration will be given to cumulative impacts from noise in particular during construction related piling activities. The potential for cumulative impacts with Hornsea Project Two, as well as other OWF developments, will be considered in the EIA. We agree that there is potential for cumulative effects to occur on fish ecology from other projects or activities within the southern North Sea, where projects or plans could act collectively with Hornsea Project P3 to affect fish receptors.

12. Conclusion

12.1. The topics highlighted in this scoping opinion should be assessed during the EIA process and the outcome of these assessments should be documented in the EIA report in support of the marine licence application and the planning application(s). This statement, however, should not necessarily be seen as a definitive list of all EIA (and HRA) requirements. Given the scale and programme of these planned works, other work may prove necessary.

Richard West

Richard West
Marine Licensing Case Officer

25 November 2016.

References

Birchenough, A. & C. Vivian. (2009). *Case studies to demonstrate the selection of dredged material disposal sites at sea.* CEFAS Regulatory Assessment Team, Lowestoft, UK. pp. 18.

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Joint Nature Conservation Committee (JNCC) (2010) *JNCC guidelines for minimising the risk of injury and disturbance to marine mammals from seismic surveys.* JNCC, Aberdeen, UK. pp16.

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Wale M.A, Simpson S.D, Radford A.N. (2013b) *Noise negatively affects foraging and antipredator behaviour in shore crabs.* Anim Behav 86:111–118.

Maritime & Coastguard Agency

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105 Commercial Road
Southampton
SO15 1EG
UK

Tel: +44 (0)20 3817 2433
Fax:
E-mail: nick.salter@mcga.gov.uk

Your ref: 161026_EN010080-000064
Our ref:

The Planning Inspectorate
3/18 Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

By email to:
environmentalservices@pins.gsi.gov.uk

18 November 2016

Dear Sir/Madam,

Scoping Opinion for the Proposed Hornsea Project Three Offshore Wind Farm under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended)

The MCA has reviewed the scoping report provided by DONG Energy Ltd for the Hornsea Project Three Offshore Wind Farm as detailed in your letter of 26th October 2016 and would comment as follows:

The proposals contained in Chapter 9.2 and the approach to Environmental Impact Assessment for shipping and navigation are supported. It is noted that the site is located 4nm east of the Hornsea Projects One & Two and the Environmental Statement (ES) will need to consider the width of the shipping corridor between the two sites and make an assessment of the required sea room in accordance with MGN 543.

The development area carries a significant amount of through traffic and liner routes, attention needs to be paid to routing, particularly in heavy weather ensuring shipping can continue to make safe passage without significant large scale deviations.

Particular attention should be paid to cabling routes and where appropriate burial depth for which a Burial Protection Index study should be completed and, subject to the traffic volumes, an anchor penetration study may be necessary. If cable protection are required e.g. rock bags, concrete mattresses, the MCA would be willing to accept a 5% reduction in surrounding depths referenced to Chart Datum. This will be particularly relevant where depths are decreasing towards shore and potential impacts on navigable water increase.

Any application for safety zones will need to be carefully assessed and additionally supported by experience from the development and construction stages.

Particular consideration will need to be given to the implications of the site size and location on SAR resources and Emergency Response Co-operation Plans (ERCoP). Attention should be paid to the level of radar surveillance, AIS and shore-based VHF radio coverage and give due consideration for appropriate mitigation such as radar, AIS receivers and in-field, Marine Band VHF radio communications aerial(s) (VHF voice with Digital Selective Calling (DSC)) that can cover the entire wind farm sites and their surrounding areas.

MGN 543 Annex 2 requires that hydrographic surveys should fulfil the requirements of the International Hydrographic Organisation (IHO) Order 1a standard, with the final data supplied as a digital full density data set, and survey report to the MCA Hydrography Manager. Failure to report the survey or conduct it to Order 1a might invalidate the Navigational Risk Assessment if it was deemed not fit for purpose.

Yours faithfully,

Nick Salter
Offshore Renewables Advisor
Navigation Safety Branch

MATLASKE PARISH COUNCIL

Clerk; Pat Chapman. Tel: 01263 733609

39 Forster Way, Aylsham, Norwich, Norfolk, NR11 6BG

Your Ref. 161026-EN010080-000064

18th November 2016

Helen Lancaster

Senior ETA & Land Rights Adviser

The Planning Inspectorate

3D Eagle Wing

Temple Quay House

2 The Square

BRISTOL BS1 6PN

Dear Madam,

Application by DONG Energy Limited for an Order Granting Development

Consent for the Hornsea Project Three Offshore Wind Farm

With reference to your letter of the 26th October concerning the above, this matter was discussed at the recent Meeting of Matlaske Parish Council. The Parish Council has no comments to make on this project. I would mention that the literature received from the Consultation Manager, including the posters, have been displayed for people to be aware. Members of the Parish Council were also handed copies for information.

Yours faithfully,

[redacted]

Clerk

MINISTRY OF DEFENCE

Defence Infrastructure Organisation

Safeguarding Department
Statutory & Offshore

Defence Infrastructure Organisation
Kingston Road
Sutton Coldfield
West Midlands
B75 7RL

Tel: +44 (0)121 311 3781 **Tel (MOD):** 94421 3781
Fax: +44 (0)121 311 2218
E-mail: DIO-safeguarding-statutory@mod.uk

www.mod.uk/DIO

Ms Helen Lancaster
Senior EIA and Land Rights Advisor
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Your ref. 161026_EN010080-000064
DIO ref. 16910

25 November 2016

Dear Ms Lancaster

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) – Regulations 8 and 9

Application by DONG Energy Limited for an Order Granting Development Consent for the Hornsea Project Three Offshore Wind Farm

Scoping consultation and notification of the applicant's contact details and duty to make available information to the applicant if requested

Thank you for consulting the Ministry of Defence (MOD) on the scoping opinion sought by DONG Energy Power UK Ltd to inform their preparation of an environmental statement relating to the above project.

The scoping report submitted by the applicant recognises the principal defence issues that will be of relevance to the progression of the development scheme proposed.

The potential for the offshore development area to contain unexploded ordnance has been identified along with the need to address this hazard.

The extent of maritime military practise and exercise areas and use of airspace for defence purposes in the vicinity of the project have been recognised. The applicant has also specifically identified the potential effect that the wind farm may have upon the effective operation of defence radars and aviation.

The need for the proposed development to be fitted with relevant aviation and maritime warning lighting to maintain navigational safety is identified.

I can therefore confirm that the MOD does not consider that the scoping report needs to include further information to take account of national defence interests.

The MOD wishes to be consulted on further submissions relating to this project.

Yours sincerely

Jon Wilson

Senior Safeguarding Officer

Copied to: DONG Energy Power UK Ltd

National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

Sent electronically to:

environmentalservices@pins.gsi.gov.uk

Nick Dexter
DCO Liaison Officer
Land & Business Support

Nicholas.dexter@nationalgrid.com
Tel: +44 (0)7917 791925

www.nationalgrid.com

22nd November 2016

Dear Sir/Madam,

Ref: EN010080 - Hornsea Project Three Offshore Wind Farm - Environmental Impact Scoping Notification and Consultation

This is a response from National Grid Gas and National Grid Electricity Transmission. You will receive a separate response from National Grid Gas Distribution.

I refer to your letter dated 27th October 2016 in relation to the proposed Hornsea Project Three Offshore Wind Farm. Having reviewed the Scoping Report, I would like to make the following comments:

Electricity and Gas Transmission infrastructure within / in close proximity to the order boundary

Electricity Transmission

National Grid Electricity Transmission has high voltage electricity overhead transmission lines, a high voltage substation and high voltage underground cables within the onshore scoping area. The overhead line, substation cables form an essential part of the electricity transmission network in England and Wales.

Substation

- Norwich 400kV

Overhead Lines

- 4VV (400kV) overhead line route - Norwich Main to Walpole 1
  - Norwich Main to Walpole 2
- 4YM (400kV) overhead line route - Bramford to Norwich Main 1
  - Bramford to Norwich Main 2
- PHC (132kV) overhead line - Norwich Main to Trowse 1
- PGG (132kV) overhead line - Norwich Main to Trowse 3

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Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

Underground Cable

- Norwich Main – PHC001

Gas Transmission

National Grid Gas has high pressure gas transmission pipelines and above ground installations (AGI's) within or in close proximity to the onshore scoping area. The transmission pipelines and AGI's form an essential part of the gas transmission network in England, Wales and Scotland:

Above Ground Installations:

- Little Barning
- Felthorpe

Gas Transmission Pipelines:

- Feeder Main 02 - Bacton to Brisley
- Feeder Main 03 - Bacton to Roudham Heath
- Feeder Main 04 - Bacton to Gt Ryburgh
- Feeder Main 27 - Bacton to Kings Lynn

Please find enclosed plans showing the location of National Grid's transmission infrastructure.

The following points should be taken into consideration:

Electricity Infrastructure:

- National Grid's Overhead Line/s is protected by a Deed of Easement/Wayleave Agreement which provides full right of access to retain, maintain, repair and inspect our asset

- Statutory electrical safety clearances must be maintained at all times. Any proposed buildings must not be closer than 5.3m to the lowest conductor. National Grid recommends that no permanent structures are built directly beneath overhead lines. These distances are set out in EN 43 – 8 Technical Specification for "overhead line clearances Issue 3 (2004) and also shown in the following National Grid Document: http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=6169

- If any changes in ground levels are proposed either beneath or in close proximity to our existing overhead lines then this would serve to reduce the safety clearances for such overhead lines. Safe clearances for existing overhead lines must be maintained in all circumstances.

- The relevant guidance in relation to working safely near to existing overhead lines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance Note GS 6 "Avoidance of Danger from Overhead Electric Lines" and all relevant site staff should make sure that they are both aware of and understand this guidance.

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Gallows Hill, Warwick
CV34 6DA

- Plant, machinery, equipment, buildings or scaffolding should not encroach within 5.3 metres of any of our high voltage conductors when those conductors are under their worse conditions of maximum “sag” and “swing” and overhead line profile (maximum “sag” and “swing”) drawings should be obtained using the contact details above.

- If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances.

- Drilling or excavation works should not be undertaken if they have the potential to disturb or adversely affect the foundations or “pillars of support” of any existing tower. These foundations always extend beyond the base area of the existing tower and foundation (“pillar of support”) drawings can be obtained using the contact details above
- National Grid Electricity Transmission high voltage underground cables are protected by a Deed of Grant; Easement; Wayleave Agreement or the provisions of the New Roads and Street Works Act. These provisions provide National Grid full right of access to retain, maintain, repair and inspect our assets. Hence we require that no permanent / temporary structures are to be built over our cables or within the easement strip. Any such proposals should be discussed and agreed with National Grid prior to any works taking place.

- Ground levels above our cables must not be altered in any way. Any alterations to the depth of our cables will subsequently alter the rating of the circuit and can compromise the reliability, efficiency and safety of our electricity network and requires consultation with National Grid prior to any such changes in both level and construction being implemented.

Gas Infrastructure:

The following points should be taken into consideration:

- National Grid has a Deed of Grant of Easement for each pipeline, which prevents the erection of permanent / temporary buildings, or structures, change to existing ground levels, storage of materials etc.

Pipeline Crossings:

- Where existing roads cannot be used, construction traffic should ONLY cross the pipeline at previously agreed locations.

- The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. The third party shall review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the raft required.

- The type of raft shall be agreed with National Grid prior to installation.

- No protective measures including the installation of concrete slab protection shall be installed over or near to the National Grid pipeline without the prior permission of National Grid.

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CV34 6DA

- National Grid will need to agree the material, the dimensions and method of installation of the proposed protective measure.
- The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to National Grid.
- Please be aware that written permission is required before any works commence within the National Grid easement strip.
- A National Grid representative shall monitor any works within close proximity to the pipeline to comply with National Grid specification T/SP/SSW22.
- A Deed of Consent is required for any crossing of the easement

Cables Crossing:

- Cables may cross the pipeline at perpendicular angle to the pipeline i.e. 90 degrees.
- A National Grid representative shall supervise any cable crossing of a pipeline.
- Clearance must be at least 600mm above or below the pipeline.
- Impact protection slab should be laid between the cable and pipeline if cable crossing is above the pipeline.
- A Deed of Consent is required for any cable crossing the easement.
- Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service shall cross below the pipeline with a clearance distance of 0.6 metres.

General Notes on Pipeline Safety:

- You should be aware of the Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services", and National Grid's specification for Safe Working in the Vicinity of National Grid High Pressure gas pipelines and associated installations - requirements for third parties T/SP/SSW22.
- National Grid will also need to ensure that our pipelines access is maintained during and after construction.
- Our pipelines are normally buried to a depth cover of 1.1 metres however; actual depth and position must be confirmed on site by trial hole investigation under the supervision of a National Grid representative. Ground cover above our pipelines should not be reduced or increased.
- If any excavations are planned within 3 metres of National Grid High Pressure Pipeline or, within 10 metres of an AGI (Above Ground Installation), or if any embankment or dredging works are proposed then the actual position and depth of the pipeline must be established on site in the presence of a National Grid representative. A safe working method agreed prior to

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Gallows Hill, Warwick
CV34 6DA

any work taking place in order to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.

- Excavation works may take place unsupervised no closer than 3 metres from the pipeline once the actual depth and position has been has been confirmed on site under the supervision of a National Grid representative. Similarly, excavation with hand held power tools is not permitted within 1.5 metres from our apparatus and the work is undertaken with NG supervision and guidance.

To view the SSW22 Document, please use the link below:
http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=33968

To view the National Grid Policy's for our Sense of Place Document. Please use the link below:
http://www2.nationalgrid.com/uk/services/land-and-development/publications/

To download a copy of the HSE Guidance HS(G)47, please use the following link:
http://www.hse.gov.uk/pubns/books/hsg47.htm

Further information in relation to in proximity to National Grid's apparatus can be found at:
http://www2.nationalgrid.com/UK/Safety/Library/

Further Advice

We would request that the potential impact of the proposed scheme on National Grid's existing assets as set out above and including any proposed diversions is considered in any subsequent reports, including in the Environmental Statement, and as part of any subsequent application.

Where any diversion of apparatus may be required to facilitate a scheme, National Grid is unable to give any certainty with the regard to diversions until such time as adequate conceptual design studies have been undertaken by National Grid. Further information relating to this can be obtained by contacting the email address below.

Where the promoter intends to acquire land, extinguish rights, or interfere with any of National Grid apparatus protective provisions will be required in a form acceptable to it to be included within the DCO.

National Grid requests to be consulted at the earliest stages to ensure that the most appropriate protective provisions are included within the DCO application to safeguard the integrity of our apparatus and to remove the requirement for objection. All consultations should be sent to the following: **box.landandacquisitions@nationalgrid.com** or by post to the following address:

The Company Secretary
1-3 The Strand
London
WC2N 5EH

National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

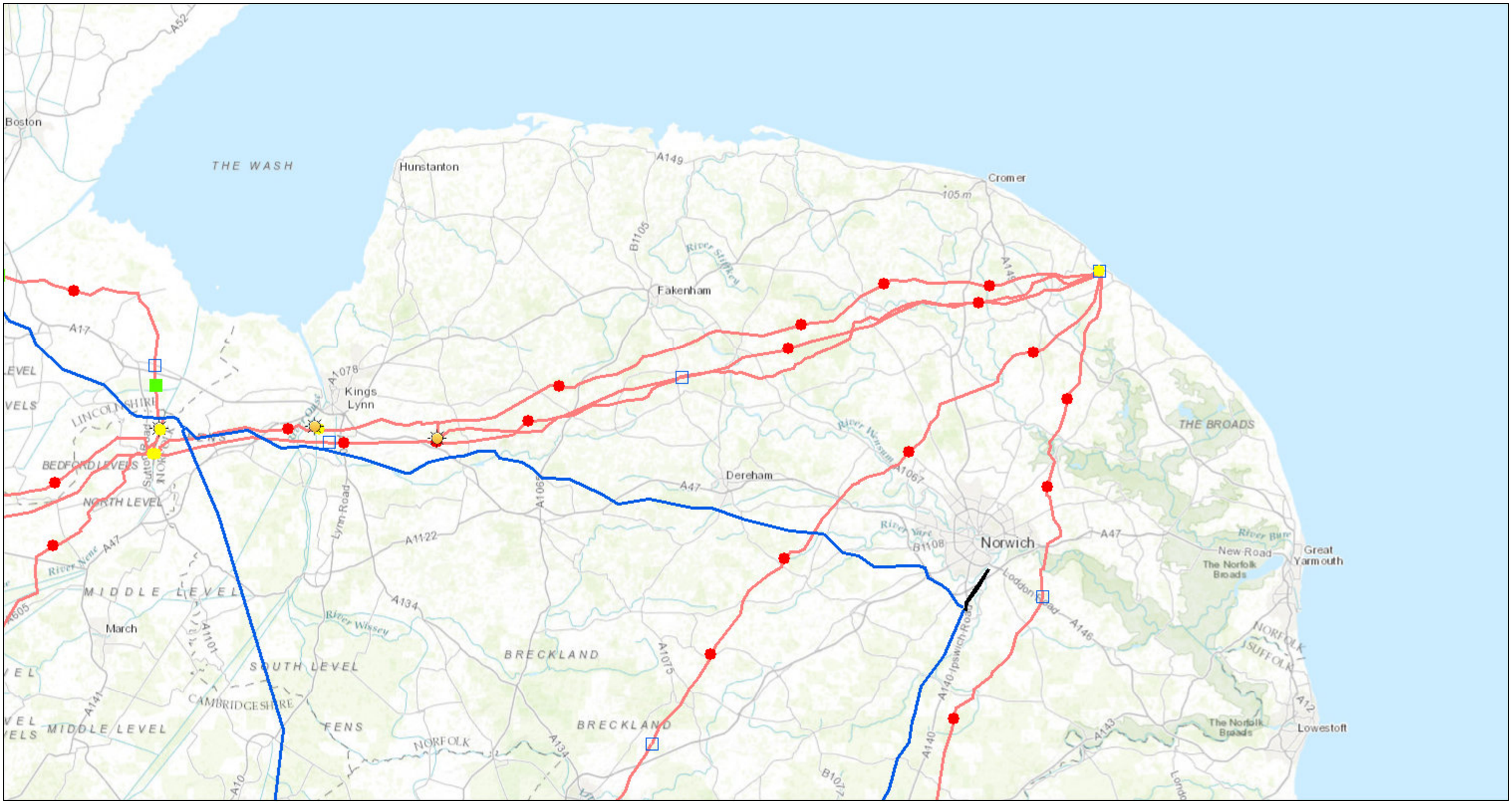
I hope the above information is useful. If you require any further information please do not hesitate to contact me.

The information in this letter is provided not withstanding any discussions taking place in relation to connections with electricity or gas customer services.

Yours Faithfully

Nick Dexter.

NG Transmission



November 22, 2016

1:577,791

AGIS

- Block Valve (BV)
- Transferred Offtake (XT)
- Multi Junction (MJ)
- Compressor Station (CC)
- Minimum Offtake (MO)

LINE

- 400
- 132

GAS_PIPE_FEEDER

- N

AGI Boundary

- Operational (OPB)
- Site (STB)

0 5 10 20 mi

0 10 20 40 km

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Web AppBuilder for ArcGIS

National Grid Gas Distribution Limited
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Senior Land Officer
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7 November 2016

The Hornsea Project Three Offshore Wind Farm - Environmental Impact Scoping Notification and Consultation **("the Proposed DCO")**

This is a response on behalf of National Grid Gas Distribution Limited (NGGD).

I refer to your email dated 27TH October 2016 regarding the Proposed DCO. NGGD has reviewing the Scoping information and wishes to make the following comments:

In respect of existing NGGD infrastructure, NGGD will require appropriate protection for retained apparatus including compliance with relevant standards for works proposed within close proximity of its apparatus,

National Grid Gas Distribution Infrastructure within or in close proximity to the Proposed Order Limits

The National Grid Gas Distribution apparatus that has been identified as being in the vicinity of your proposed works is:

- High or Intermediate pressure (above 2 bar) Gas Pipelines and associated equipment
- Low or Medium pressure (below 2 bar) gas pipes and associated equipment. (As a result it is highly likely that there are gas services and associated apparatus in the vicinity)

Where the Promoter intends to acquire land, extinguish rights, or interfere with any of NGG's apparatus, NGG will require appropriate protection and further discussion on the impact to its apparatus and rights.

Key Considerations:

- National Grid has a Deed of Grant of Easement for each pipeline, which prevents the erection of permanent / temporary buildings, or structures, change to existing ground levels, storage of materials etc.

Pipeline Crossings:

- Where existing roads cannot be used, construction traffic should ONLY cross the pipeline at previously agreed locations.
- The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. The third party shall review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the raft required.
- The type of raft shall be agreed with National Grid prior to installation.

- No protective measures including the installation of concrete slab protection shall be installed over or near to the National Grid pipeline without the prior permission of National Grid.
- National Grid will need to agree the material, the dimensions and method of installation of the proposed protective measure.
- The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to National Grid.
- Please be aware that written permission is required before any works commence within the National Grid easement strip.
- A National Grid representative shall monitor any works within close proximity to the pipeline to comply with National Grid specification T/SP/SSW22.
- A Deed of Consent is required for any crossing of the easement

Cables Crossing:

- Cables may cross the pipeline at perpendicular angle to the pipeline i.e. 90 degrees.
- A National Grid representative shall supervise any cable crossing of a pipeline.
- Clearance must be at least 600mm above or below the pipeline.
- Impact protection slab should be laid between the cable and pipeline if cable crossing is above the pipeline.
- A Deed of Consent is required for any cable crossing the easement.
- Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service shall cross below the pipeline with a clearance distance of 0.6 metres.

General Notes on Pipeline Safety:

- You should be aware of the Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services", and National Grid's specification for Safe Working in the Vicinity of National Grid High Pressure gas pipelines and associated installations - requirements for third parties T/SP/SSW22.
- National Grid will also need to ensure that our pipelines access is maintained during and after construction.
- Our pipelines are normally buried to a depth cover of 1.1 metres however; actual depth and position must be confirmed on site by trial hole investigation under the supervision of a National Grid representative. Ground cover above our pipelines should not be reduced or increased.
- If any excavations are planned within 3 metres of National Grid High Pressure Pipeline or, within 10 metres of an AGI (Above Ground Installation), or if any embankment or dredging works are proposed then the actual position and depth of the pipeline must be established on site in the presence of a National Grid representative. A safe working method agreed prior to any work taking place in order to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.
- Excavation works may take place unsupervised no closer than 3 metres from the pipeline once the actual depth and position has been has been confirmed on site under the supervision of a National Grid representative. Similarly, excavation with hand held power tools is not permitted within 1.5 metres from our apparatus and the work is undertaken with NG supervision and guidance.

National Grid Gas Distribution Limited
Ashbrook Court, Prologis Park, Central Boulevard, Coventry CV7 8PE
www.nationalgrid.com

nationalgrid

To view the SSW22 Document, please use the link below:

http://www.nationalgrid.com/uk/LandandDevelopment/DDC/GasElectricNW/safeworking.htm

To download a copy of the HSE Guidance HS(G)47, please use the following link:

http://www.hse.gov.uk/pubns/books/hsg47.htm

Yours Faithfully

[redacted]

Vicky Stirling
Land & Property Services

Securing our energy supply for future generations.

Date: 25 November 2016
Our ref: 10827/199899
Your ref: 161026_EN010080-000064

Secretary of State
c/o Planning Inspectorate
3/18 Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

3rd Floor, Lateral
8 City Walk,
Leeds
LS11 9AT

BY EMAIL ONLY

Dear Secretary of State,

INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2009 SI 2263 (as amended) (the EIA Regulations)
PROPOSED HORNSEA PROJECT THREE OFFSHORE WIND FARM (the project)
PROPOSAL BY DONG ENERGY LIMITED (the Applicant)

Thank you for your letter dated 26 October 2016 consulting Natural England on the Hornsea Project Three Environmental Impact Assessment Scoping Report.

Background

It is important to note that many of the issues pertinent to this application are likely to be similar to those raised in relation to the Hornsea Project One and Hornsea Project Two Environmental Impact Assessments (EIA) and Environmental Statements (ES), with the exception of the Export Cable Route (ECR) due to its southerly route. We therefore strongly advise that due consideration is given to Statutory Nature Conservation Body (SNCB) advice that has been and is currently being provided in relation to these developments and associated environmental impacts.

General Approach to EIA

It is relevant at this point to clarify the aims of EIA, in order to frame our advice on how it should be undertaken appropriately. EIA is a statutory process which should highlight the potential positive and negative impacts of a project, and identify how effects can be prevented, offset or reduced through mitigation, enabling the regulator to make a decision on whether to consent.

In respect of offshore wind farm development, it is important to highlight the much larger scale and geographic spread of Round 3 compared to Rounds 1 and 2 of development. Therefore, while lessons are being learned from Rounds 1 and 2 sites, there is the potential for a different range and/or a greater level of impacts to arise from Round 3 development particularly in relation to cumulative impacts. Consequently, considering the levels of uncertainty that this introduces to the EIA process we advise that the EIA is undertaken in the context of risk management. We identify the need to consider what level of confidence in the data it will be realistically possible to achieve, and how this will be presented to enable conclusions to be reached. The Applicant should therefore communicate the level of confidence in their predictions on potential impacts in their ES.

Whilst we appreciate the Applicant's intention to identify appropriate mitigation for the impacts predicted to occur as a result of Hornsea Project Three we highlight that this development is still constrained by the fixed limits of the licence area and grid connection location and, therefore, mitigation is also restricted within this area i.e. the options for relocation of development away from sensitive areas are limited. We highlight that whilst appropriate mitigation measures may be identified in relation to the project design, for some receptors more radical mitigation measures may require consideration and/or compensatory measures may be needed. We would welcome the opportunity to discuss these options as the application progresses.

Pre-Application Consultation

Natural England recognises the importance of the pre-application stage of the PINS consenting regime and as such seek to make this process as effective as possible. We are pleased to note that the Applicant has begun an Evidence Plan process and has engaged Natural England at both the Steering Group and Topic Group level.

In summary, we recognise the time constraints that the developer is under places pressure on the pre-application process, however, insufficient time to deal with key environmental concerns prior to submission of the application poses a risk to the development and we encourage the developer to engage with us to address them.

Scoping Opinion

We recognise that it is a statutory requirement for developers to undertake consultation on a Scoping Report. On review of the report submitted by the Applicant pertaining to Hornsea Project Three, we note that the information and detail provided is limited and is focussed on the high-level aims of the EIA. We would welcome further information pertaining to the specific survey methodologies to be adopted for assessment of impacts on each receptor, and for a preliminary assessment of key potential impacts associated with the development and in-combination with other plans/projects. We anticipate discussing this level of detail during the preparation of Evidence Plans for the projects.

Section 42: Preliminary Environmental Information (PEI)

It is the view of Natural England that the most appropriate form for a PEI to adopt is that of a draft Environmental Statement (ES). This would reassure Natural England, and other key stakeholders, that the Applicant's approach to EIA is appropriate and to allow time for areas of concern to be raised and resolved prior to submission of the final ES to PINS. It is, therefore, sensible to maximise the opportunities in pre-application for open and constructive dialogue, to reduce the risk of an application being rejected by PINS. It is also our experience that if too many issues are left unresolved at application then this causes increased pressure for all involved during the Examination process. As such we would expect emphasis on effective pre-application engagement between the developer and Natural England, and for the PEI to present sufficient detail such that an assessment of the Applicant's approach to EIA can be made.

Habitats Regulations Assessment (HRA)

In accordance with the 2010 Habitats Regulations (as amended) 61(2) anyone applying for development consent for an NSIP must provide the competent authority with such information as may reasonably be required "for the purposes of the assessment" or "to enable them to determine whether an appropriate assessment is required". The SNCBs advise that this information should therefore be provided and appraised as part of the EIA process.

Further Liaison and Advice

Hornsea Project Three lies in relative proximity to other Round 3 projects currently pursuing development consent for the phased development of large scale wind arrays within the North Sea. These include: Hornsea Projects one and Two, Dogger Bank Creyke Beck (A & B), Dogger Bank Teesside (A & B), Norfolk Van Guard and Boreas and the East Anglia offshore wind farm projects.

We would strongly recommend that collaborative working is pursued with these other projects who are likely to be facing the same consenting risks. We recognise the value of collaborative working particularly in relation to cumulative impacts (including non-wind farm projects). We strongly support any initiatives to pursue collaborative working and are happy to engage in any such projects that the Applicant may progress.

In addition to this, the further development of offshore wind farms presents an opportunity to learn from previous development and to further refine survey and monitoring methods to ensure that the practicality and effectiveness of methods employed means that key data gaps are addressed. There is, therefore, a role for consenting authorities, developers and consultees to increase the understanding of the effects of offshore wind farms as well as securing best practice in further developments.

Key Environmental Issues

We provide our detailed advice in relation to the scoping report in **Annexes 1-6.**

Our key concerns are as follows and we consider that these issues will need thorough consideration through EIA and close discussion between the Applicant, Natural England and where possible the regulators and Marine Management Organisation (MMO):

- The potential effects of this development proposal on birds during all phases of development encompassing displacement, indirect effects (through impacts on prey species) and collision mortality – both at a project-level and cumulatively.
- Potential effects on marine mammals from noise during construction – both at a project-level and cumulatively.
- Potential impacts on the designated site features along the offshore export cable route – both at a project-level and in-combination
- Potential in-combination/cumulative impacts with other sea defence projects at the landfall location
- Potential in-combination terrestrial impacts along the terrestrial export cable route with that of Vattenfall's Van Guard offshore wind farm project.

If you have any questions regarding the above comments or want to discuss further any of the issues we have raised please do not hesitate to contact Marija Nilova at Natural England on the details provided below.

Yours sincerely,

Marija Nilova
Marine Lead Adviser – Major Casework

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Annex 1 – Introduction, project background and description (Chapters 1-6)

General comment: Within the ES thorough consideration should be given to carrying out a realistic assessment as to how cables will be buried and what level of protection will be needed where cables cannot be buried. Cable crossings, mobile areas of seabed and harder substrates have all presented issues for cable burial and remedial works in other wind farms. We suggest that this project learns from those that have gone before and incorporates this into the assessment. Whilst there are concerns with cables remaining buried where there are active seabed features it should also be noted that relict features are unlikely to recover and therefore impacts may be more significant.

Table 6.1: Natural England notes that 15-16 months of surveys will now be undertaken for ornithology and would expect the same for marine mammals. After the toping group meeting on 24th November 2016, Natural England is disappointed that only relative abundance of harbour porpoise can be determined by the aerial analysis, but welcomes the extra work being undertaken to make sure this is the case. Natural England has some remaining concerns about a lack of updated data for other species, especially with regards to possible mitigation options, however, we also welcome the additional work to investigate whether analysis of 20% of the aerial data could improve the information for minke whales, white beaked dolphin and seal species (as per the comment on Table 8.13 below).

Annex 2 – Offshore physical environment (Chapter 7)

Marine processes

Table 7.3: The section referring to “regional designations” should be removed, and the MCZs should be considered as “national designations”. The North Norfolk Coast SPA and the Greater Wash pSPA should be included in the table, as elevated levels of suspended sediment concentrations (SSC) could affect the feeding success of birds. No map is provided to show designated sites in relation to the project boundaries, as opposed to Chapter 8.

Table 7.3: Natural England welcomes the scoping-in of the Markham’s Triangle rMCZ . Whilst it is only recommended at this stage (and therefore is not a material consideration currently), we would advise the potential impacts on this site from the project are considered in full in case the site is proposed for designation subsequently.

Table 7.4 Impacts 1, 2 and 8: These impacts currently refer to “increases in SSC and deposition of disturbed sediment to the seabed *within* the Hornsea Three array/offshore ECR corridor”. These impacts have a potential to spread outside the array and ECR corridor boundaries. It is not clear whether these impacts have been scoped out: if this is the case, we advise that further consideration of the potential significance of these issues is needed before they can be scoped out of the ES.

Table 7.4 Impact 2: The evidence based approach means using the data considered analogous from other sites and projects rather than collecting new data. We would like to note that there is not an evidence base for sandwave clearance for cable installation. Sandwave clearance has now taken place at Race Bank offshore wind farm and may have taken place at other developments. Any available data and lessons learnt from this should be incorporated into the assessment as this is a new methodology and there is no empirical evidence regarding the impacts and effectiveness of technique. In addition, new cable installation techniques that may have been developed since 2008 may be lacking SSC monitoring data. This does not necessarily mean further assessment, but acknowledgement of the different and newer techniques that may be used for cable installation and some reference to whether they are likely to cause greater SSC than that which has previously been measured should be included in the ES.

Table 7.4 Impact 3: Natural England’s preference would be that Horizontal Directional Drilling is undertaken to install the export cables under the foreshore and cliff/shingle habitats. This approach is consistent with Sheringham Shoal and Dudgeon offshore wind farm projects.

Table 7.4 Impact 4: The approach to use the results of the assessments from Hornsea Projects One and Two is reasonable and acceptable. It will be important to consider the impacts of the projects on the wave field cumulatively which is noted in this section. Any uncertainty in the accuracy of the predictions should be clearly stated and quantified and carried through into the conservative approach mentioned.

This section should also consider the impacts of offshore wind farms on turbidity and stratification. Recent literature published on this topic includes:

> Vanhellemont, Q. and Ruddick, K., 2014. Turbid wakes associated with offshore wind turbines observed with Landsat 8. *Remote Sensing of Environment*, 145, pp.105-115.
>
> Cazenave, P.W., Torres, R. and Allen, J.I., 2016. Unstructured grid modelling of offshore wind farm impacts on seasonally stratified shelf seas. *Progress in Oceanography*, 145, pp.25-41.

Given the close location of Hornsea Project Three to the Flamborough Front – an area of high pelagic productivity – it would be useful if the ES could use the available data or any additional modelling and assess any impacts on stratification and in particular the Flamborough Front.

Table 7.4 Impact 5: When considering scour the aim should be to design the project in a way that minimises the potential for scour development and need for scour protection. Such an approach reduces the introduction of hard substrate into a soft substrate environment and the subsequent impacts for biodiversity. Where scour protection is necessary, its need should be realistically assessed, fully justified, and consideration given to minimising the amounts required. The option that will have the least impact on the local environment should be installed as a result. Lessons should be learnt and incorporated from wind farms that have been installed in similar sediment types and water depths.

Table 7.4 Impact 6: As mentioned above, reference should be made to recent relevant literature and any potential for persistent sediment plumes and/or impacts on stratification.

Table 7.4 Impact 7: Natural England advises that modelling of both coastal erosion and intertidal bed levels is undertaken for the life time of the project to ensure that the cables remain buried and the associated infrastructure is secure. Should the cables become unexpectedly exposed then there is an expectation that they will be reburied, as opposed to the use of additional hard infrastructure such as cable protection.

Subsea noise

General Comment: We would like to draw your attention that the current design envelope for monopole foundations (Table 3.3) considers the maximum hammer energy of 5000 kJ. This value represents a significant increase in the worst-case scenario compared to the projects assessed to date.

General Comment: Natural England recommends the Marine Management Organisation seeks advice from Cefas on the proposed noise modelling and assessment methodology when it becomes available.

7.2.8 and 7.2.10: Natural England suggests that the new NOAA thresholds for permanent threshold shift (PTS) onset in marine mammals are also considered in future assessment. While the SNCBs have yet to fully assess how the new thresholds might be applied in UK, Natural England would expect the SNCBs to have formed a view by the time PEIR/ES are released for consultation.

> National Marine Fisheries Service, 2016. Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing: Underwater acoustic thresholds for onset of permanent and temporary threshold shifts. NOAA. *NOAA Technical Memorandum NMFS-OPR-55*, 178 pp. Available online at: http://www.nmfs.noaa.gov/pr/publications/techmemos.htm

7.2.8 and 7.2.16: The subsea noise assessment should also look at the cumulative impacts of other impulsive noise activities as well as piling operations at adjacent wind farm developments, or at least this will be required as part of the EIA and HRA cumulative assessment. For example, section 3.7.7 refers to unexploded ordnance (UXO). We acknowledge that UXO will not be assessed within the EIA. However, some assumptions on size and number will need to be made for the EIA and HRA in terms of cumulative noise impacts on marine mammals.

Annex 3 – Offshore biological environment (Chapter 8)

Benthic subtidal and intertidal ecology

8.1.3: More recent UK Offshore Energy Strategic Environmental Assessment 3 (OESEA3) is available from https://www.gov.uk/government/consultations/uk-offshore-energy-strategic-environmental-assessment-3-oesea3.

8.1.4: Based on discussions during the evidence plan topic group meeting on 17th November 2016, Natural England acknowledges that the developer is still reviewing existing data and geophysical survey data. Until this is completed and the review shared with NE we are unable to confirm that there is sufficient data for a full benthic characterisation. Therefore the need for further benthic sampling cannot be assessed at this stage.

8.1.11: Evidence should be included in the ES to demonstrate that the elevated arsenic levels are due to the presence of natural sources.

Table 8.2: The North Norfolk Coast SPA and the Greater Wash pSPA should be included in the table. Impacts on benthic and intertidal ecology may have direct consequences for the SPA features.

8.1.22: The up to date reference for benthic studies at aggregate sites is:

> Ware, S.J. & Kenny, A.J. 2011. Guidelines for the Conduct of Benthic Studies at Marine Aggregate Extraction Sites (2nd Edition). Marine Aggregate Levy Sustainability Fund, 80 pp.

For assessments on designated sites we advise that use is made of Natural England's advice on operations, which looks at the pressures from activities and the sensitivity of the habitat or species. Available from: https://www.gov.uk/government/publications/marine-protected-areas-how-to-use-the-advice-on-operations-workbooks

Table 8.4 Impact 1 – Hornsea Three array area: The section lists the data available for the EIA benthic characterisation and states that "*Further dedicated benthic ecology surveys across the Hornsea Three array area for the purposes of EIA characterisation are therefore not proposed."* We would like to note that the Applicant needs to be confident that they have sufficient data with regards to any potential impacts on the Markham's Triangle rMCZ to inform an MCZ assessment should this site be designated.

Table 8.4 Impact 1 – Hornsea Three offshore ECR corridor: If sandwave clearance is likely to be needed for cable installation this should be explicitly mentioned and assessed.

Natural England would like to agree the rationale and prioritisation of sample locations for the benthic survey along the ECR and the array prior to the surveys being undertaken.

Table 8.4 Impact 2: Whilst no further site specific survey or modelling may be needed for suspended sediment, an assessment should still be made of the impacts on benthic communities with particular attention given to those sensitive to smothering.

Sediment disturbance from the cable and turbine installation activities may also include disposal of sediment arising from drilling for monopole foundations, seabed levelling for gravity-based foundations and sandwave clearance. Impact 1 in Table 7.4 mentions these activities with relation to marine processes. However, no acknowledgement is provided in Table 8.4 as to how the disposal of such sediments may result in temporary or permanent loss of benthic habitat.

Table 8.4 Operation and Maintenance Activities: Natural England advises that thorough consideration is given in the EIA to the likely occurrence, types and duration of operation and maintenance (O&M) activities and the potential implications for recoverability of the interest features of designated sites.

Table 8.4 Impact 4: Natural England advises that long-term permanent impacts may also occur if chalk within the Cromer Shoal Chalk Beds MCZ is cut during the installation process and resulting groove used to secure the cable

Table 8.4 Impact 5: Data from existing windfarms in similar environments should be used to inform the impact assessment from colonisation of structures.

We acknowledge that potential for the spread of non-native species is mentioned under this impact. It is our understanding that "colonisation of hard structures" impact only covers the changes in biological communities, albeit acknowledging that hard structures may facilitate the spread of invasive species. However, it is our view that non-native species are, on their own right, a distinct impact on the marine ecological environment. Therefore, it should be identified under a separate heading, providing a range of pathways how the spread of non-native species may result from the proposed development (ballast water, biofouling of boat hulls, as well as the hard structures acting as "stepping stones" for geographic spreading of these species). The following published literature should provide a good starting point for the assessment of these impacts:

> Kerckhof, F., Degraer, S., Norro, A. and Rumes, B., 2011. Offshore intertidal hard substrata: a new habitat promoting non-indigenous species in the Southern North Sea: an exploratory study. *Offshore wind farms in the Belgian Part of the North Sea: Selected findings from the baseline and targeted monitoring*. Royal Belgian Institute of Natural Sciences, Marine ecosystem management unit, Brussels, pp.27-37.
>
> Adams, T.P., Miller, R.G., Aleynik, D. and Burrows, M.T., 2014. Offshore marine renewable energy devices as stepping stones across biogeographical boundaries. *Journal of Applied Ecology*, 51(2), pp.330-338.
>
> De Mesel, I., Kerckhof, F., Norro, A., Rumes, B. and Degraer, S., 2015. Succession and seasonal dynamics of the epifauna community on offshore wind farm foundations and their role as stepping stones for non-indigenous species*. Hydrobiologia*, 756(1), pp.37-50.

The government policy for invasive non-native species is set out in the document by Defra called "The Great Britain invasive non-native species strategy". Available online: https://www.gov.uk/government/publications/the-great-britain-invasive-non-native-species-strategy

Particularly in the marine environment, one of the 10 descriptors for good ecological status under MSFD is reduction in introduction and spread of invasive non-native species through improved management of pathways and vectors. Therefore the government is required to deliver action to achieve this and report both through OSPAR and to Europe. The full document on the MSFD programme of measures can be accessed online: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/486623/marine-strategy-part3-programme-of-measures.pdf

UK Government's Marine Policy Statement includes on p. 20 "*There may also be an increased risk of spills and leaks of pollutants into the water environment and the likelihood of transmission of invasive non-native species, for example through construction equipment, and their impacts on ecological water quality need to be considered"*. The full statement document can be accessed online:https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf

Table 8.4 Impact 6: Please, refer to our comments to Table 7.4 Impact 4 and the effects on stratification.

Figure 8.5: We note that Markham's Triangle rMCZ is wrongly referred to as "*regional* Marine Conservation Zone". Markham's Triangle rMCZ stands for "*recommended* Marine Conservation Zone". It is important that documents related to the project use correct terms with regards to designated sites.

Fish and shellfish ecology

Table 8.8: Please refer to our comments to Table 8.3.

Table 8.9 Impact 1: The first line states: *"Given the detail, coverage and contemporary nature of fish ecology information available (from desk studies and site specific surveys; see paragraphs 8.2.3 to 8.2.5) for the former Hornsea Zone and that local fish populations across this area have been shown to be typical of the wider southern North Sea, the fish and shellfish ecology baseline is considered to have been robustly characterised. Therefore, no further site-specific fish ecology surveys to inform the Hornsea Three EIA are proposed across the Hornsea Three array area. The SNCBs have agreed with this approach (see Table 6.1)."*

However, in Table 1, the only agreement with SNCBs in terms of fish and shellfish ecology is: *"It was agreed that existing metocean data is sufficient and appropriate top inform the EIA. All other discussions are ongoing."*

This does not state that the SNCBs are content with the fish and shellfish baseline, and, following from section 8.2.4, it appears that the agreement was for Hornsea Project Two. Whilst Natural England have agreed that there is no further need for otter and beam trawls for Hornsea Project Three, other aspects of setting the baseline are still under discussion with CEFAS and ourselves. We would recommend that this point is clarified in further documents and that Hornsea Project Three seek agreement with the SNCBs on the fish and shellfish baseline data as part of the evidence plan process before submission of the ES.

Marine mammals

General comment: Natural England would welcome discussion with the Applicant concerning the offshore accommodation platforms being capable of accommodating marine mammal observers (MMOs), passive acoustic monitoring (PAM) and acoustic deterrent device (ADD) operators, who can then work from the main installation vessel.

8.3.2: We would like to note that no surveys of the proposed Hornsea Project Three ECR corridor were conducted as part of Hornsea Projects One and Two and Hornsea Zone studies due to its southerly route. The export cable installation should take into account sensitive breeding and moulting periods for seals along the North Norfolk coast which will be using the surrounding sea during June-August for harbour seal (The Wash and North Norfolk Coast SAC interest feature) and grey seals between November and January.

8.3.3: The Applicant should also look to use the densities from the Joint Cetacean Protocol (JCP - http://jncc.defra.gov.uk/page-5657) once available as well as the updated JCP maps for relevant species abundance and distribution.

8.3.24: There are also important haul outs along the North Norfolk Coast at Blakeney and Horsey and the population of seals in those areas are have been expanding in recent years.

Table 8.11: While Natural England welcomes the inclusion of MCZs in the table, it should be noted that no marine mammals are features of these sites.

Table 8.13 Impact 1: As part of the ongoing topic group meetings, Natural England expects to have further discussion on assessing the potential impacts on white beaked dolphin and minke whale and development of the Marine Mammal Mitigation Plan. During the topic group meeting on 21st November 2016 the sufficiency of analysing of 20% of the aerial video from bird surveys for marine mammals was discussed and this is an ongoing issue).

Offshore ornithology

The format of our response in this section is to respond to the Applicant's questions posed in paragraph 13.3.1.

Question 1: Are there any additional baseline data sources available that could be used to inform the EIA?

Potential additional sources of baseline data: Natural England recommends that the Applicant reviews the following additional publications that are not referenced in the scoping report when producing the Environmental Statement (noting that this is not an exhaustive list). Additionally, Natural England notes that there are a number of existing guidance/advice notes and publications that will be relevant to the subsequent analysis and interpretation of the baseline data. The Applicant should also review any relevant papers and guidance documents that are published between this response and the submission of the Environmental Statement.

Bradbury G., Trinder M., Furness B, Banks A.N., Caldow R.W.G., et al. (2014) Mapping Seabird Sensitivity to Offshore Wind Farms*. PLoS ONE* 9(9): e106366. doi:10.1371/journal.pone.0106366

Kober, K., Wilson, L.J., Black, J., O'Brien, S., Allen, S., Win, I., Bingham, C. and J.B. Reid, 2012. The identification of possible marine SPAs for seabirds in the UK: The application of Stage 1.1 – 1.4 of the SPA selection guidelines. JNCC Report No 461.

Mitchell, I., Newton, S., Ratcliffe, N. and Dunn, T.E. 2004. Seabird Populations of Britain and Ireland, T & AD Poyser.

Langston, 2010. Offshore wind farms and birds - Round 3 Zones, extensions to Round 1 and 2 sites, and Scottish territorial waters. RSPB Research Report 39. RSPB.

Natural England. 2015. A possible new marine Special Protection Area for birds in the Greater Wash. Natural England Technical Information Note TIN169.

Skov, H., Durnick, J., Leopold, M.F. and Tasker, M.L. 1995. Important Bird Areas for seabirds in the North Sea, including the Channel and the Kattegat. Bedfordshire, UK: BirdLife International and Ornis Consult Ltd, RSPB.

Seabird tacking datasets such as: http://www.fameproject.eu/en/# and http://webgis.spea.pt/FAME/

At sea densities of seabirds (ESAS data):
https://data.gov.uk/dataset/at-sea-densities-of-all-modelled-seabird-species-combined-for-the-breeding-season
https://data.gov.uk/dataset/at-sea-densities-of-all-modelled-seabird-species-combined-for-the-non-breeding-season

Local bird reports, for example:
NNNS. 2016. Norfolk Bird and Mammal Report 2014. Norfolk and Norwich Naturalists' Society, Norfolk.

Seabird Monitoring Programme reports and data: http://jncc.defra.gov.uk/smp/counts.aspx and http://jncc.defra.gov.uk/page-1530

Information about protected sites, for example:
https://consult.defra.gov.uk/natural-england-marine/greater-wash-potential-special-protection-area-com/supporting_documents/V9%20FINAL%20Greater%20Wash%20Departmental%20Brief%2017%20October%202016%20ready%20for%20consultation.pdf

http://publications.naturalengland.org.uk/category/3212324

http://publications.naturalengland.org.uk/category/6490068894089216

Stroud, D.A., Bainbridge, I.P., Maddock, A., Anthony, S., Baker, H., Buxton, N., Chambers, D., Enlander, I., Hearn, R.D., Jennings, K.R, Mavor, R., Whitehead, S. and Wilson, J.D. - on behalf of the UK SPA & Ramsar Scientific Working Group (eds.) 2016. The status of UK SPAs in the 2000s: the Third Network Review. 108 pp. JNCC, Peterborough. Available online: http://jncc.defra.gov.uk/pdf/UKSPA3_StatusofUKSPAsinthe2000s.pdf

Question 2: Have all potential impacts resulting from Hornsea Three been identified for each the EIA topics within this Scoping Report?

Table 8.20 identifies a full range of potential impacts relevant to ornithological features. Natural England consider that additionally this table could include reference to cumulative impacts, although these are referred to in section 8.4.46. Table 8.21 then scopes out some of these potential impacts from the ornithology assessment, with a rationale for scoping these impacts out. Natural England does not agree with the rationale for scoping out some of these impacts and we provide further details under Question 4, below, and also in the specific comments regarding the different ornithological receptor species in the offshore environment. Additionally, we note that EIA should consider the environment as a whole, and not as a discrete set of individually sensitive receptors. Within the scoping report there is a section (5.6) on inter-related effects where the Applicant has outlined suggestions regarding the assessment of linkages between receptors, and how impacts on one receptor may influence others e.g. such as impacts to fish which may be important as prey species for birds and marine mammals. We consider that such inter-relationships are likely to be key in interpreting the environmental impacts of the development and welcome the applicant's intention to integrate these aspects as part of the EIA process.

Question 3: In light of the significant and relevant existing data and knowledge established through surveys and assessments undertaken for Project One and Project Two, does the reader agree that the intended evidence-based approach is appropriate for the Hornsea Three EIA?

Hornsea Project Three Baseline Surveys

The Ornithology section (8.4) does not provide any detail about the baseline survey data that will be collected as part of the characterisation surveys for the offshore Hornsea Project Three project area, beyond saying that monthly digital video surveys will be undertaken for the project area and 4 km buffer. Natural England note that Table 6.1 indicates that for offshore ornithology Natural England, MMO and RSPB had "*agreed that one year of aerial surveys will be undertaken to inform the offshore ornithology EIA*". It is not correct to infer from this statement that Natural England agrees that only one year of aerial surveys are sufficient to inform the offshore ornithology EIA. During the Evidence Plan process, Natural England advised the Applicant that two years of baseline survey data (covering two complete "bird seasons" for each species and season) are a minimum requirement for characterising the baseline. Having less than two years of data will increase the uncertainty around the offshore ornithology impact assessment and will increase the risk for the Applicant that Natural England will not be able to reach conclusions regarding the impact assessment. Natural England notes that the Applicant plans to undertake a meta-analysis of existing baseline datasets from the Hornsea Zone (some of which overlap with the Hornsea Project Three area) to determine whether these can be used in conjunction with the Hornsea Project Three survey data to characterise the baseline for the project.

The scoping report does not provide any detail about how the baseline data will be analysed. We consider that it will be important that the level of uncertainty/confidence associated with each data source and assessment should be discussed/quantified based on the nature of evidence used and how this evidence was used to determine impact significance. It is important that there is detailed presentation of the uncertainty associated with any quantitative estimates to establish confidence in conclusions drawn. The Applicant will need to ensure that that their survey methodologies are appropriate and enable collection of data (or use of existing data) that will enable quantification of the variability and uncertainty in key data parameters e.g. densities of birds in the project area, flight height behaviour, connectivity with protected sites.

Existing surveys and assessments

Natural England acknowledges that there are a number of other sources of existing data and knowledge from Hornsea Projects One and Two, and the Hornsea Zone surveys that can be used to inform the offshore assessment and are aware that the Applicant intends to undertake a meta-analysis of these datasets to inform the baseline against which the predicted impacts of Hornsea Project Three will be assessed. We understand that these analyses may be restricted to analysing data that overlaps spatially with the Hornsea Project Three area which may limit the value of the assessment and would welcome further engagement with the Applicant regarding use of the existing evidence. However, Natural England considers that it is appropriate and useful to consider these additional datasets as part of the EIA assessment.

The Hornsea Project Three offshore ECR corridor search area lies within the Greater Wash pSPA and the Applicant is not planning any ornithology surveys of the offshore components of the ECR corridor. Instead, the Applicant will use existing datasets (available from the literature) to describe the ornithological baseline. Natural England agrees that basing the assessment of impacts on the pSPA from the ECR corridor on the existing ornithological evidence base (e.g. aerial surveys of the Greater Wash (Lawson *et al.,* 2016[1]) is appropriate for the Hornsea Project Three EIA.

Question 4: Does the reader agree with the impacts to be scoped in, and out, of the assessment (including from Hornsea Three alone, cumulatively with other projects and on other European Economic Area interests, i.e. transboundary impacts)?

Permanent habitat loss has been scoped out as a potential impact in the construction and decommissioning phases of the development. We agree that permanent habitat loss does not need to be separately assessed for all three development phases, but instead can be assessed under the operational and maintenance phase.

Indirect permanent habitat loss/disturbance has been scoped out from the operational/maintenance phase. This is on the basis that no impact is predicted from indirect effects due to changes to physical processes and habitat from operational infrastructure that may lead to significant changes in prey availability. Natural England does not agree that this can be concluded, as the presence of subsurface structures as well as changes in wind patterns that may result in changes in current patterns in the area could result in changes in prey availability and distribution during the operational phase of the development. Indirect impacts may cause disturbance to prey (e.g. fish) species from important bird feeding areas or changes to prey availability due to changes to physical processes and habitat as a result of the presence of operational infrastructure. Please see Natural England's comments in Annex 2 regarding potential turbidity and stratification effects on marine processes.

Natural England does not agree with the Applicant's proposal to scope out "Accidental Pollution" and "Disturbance from Lighting" as potential impacts on ornithological receptors. Please see our detailed comments below.

Natural England agrees with the Applicant's proposal that for the Hornsea Project Three array area and offshore ECR corridor search area, transboundary impacts upon birds and their nature conservation interests are screened into the EIA process and that potential impacts upon European Sites with birds as a qualifying feature will be assessed within the HRA.

Question 5: For those impacts scoped in, does the reader agree that the methods described are sufficient to inform a robust impact assessment?

The only methods described are to undertake a displacement assessment following the Natural England and JNCC (2012) interim guidance note, and to undertake collision risk modelling using the Band (2102) model or potentially the updated Masden (2015) model. For example, under the *"Proposed approach for the undertaking of Hornsea Three specific modelling to inform the*

[1] Lawson, J., Kober, K., Win, I., Allcock, Z., Black, J. Reid, J.B., Way, L. and O'Brien, S.H., 2016. An assessment of the numbers and distribution of wintering red-throated diver, little gull and common scoter in the Greater Wash. JNCC Report No 574. JNCC, Peterborough.

assessment of potential impacts" in Table 8.20 there is no reference to any methodology for assessing the population level significance of any predicted impacts (for example using matrix population modelling). The information provided on the proposed approach to assessing each impact therefore is at a high level and is not detailed enough to be able to say whether the methods are sufficient to inform a robust impact assessment. Natural England notes that many of the key issues that require addressing are complex and challenging and therefore it will be important for Natural England to continue working with the Applicant to ensure the approach undertaken in assessing impacts is sufficiently robust to support conclusions drawn within the final ES and Habitats Regulations Assessment. We note that during the course of the application period new evidence, methods and guidance may be produced and Natural England may advise the Applicant to consider this new evidence in their assessment. This should include any changes to SNCB guidance on how to carry out displacement assessments and any further outputs from the Marine Renewables Ornithology Group (MROG) 2015 Displacement Workshop (JNCC 2015).

Detailed comments in relation to offshore ornithology

Table 6.1: The table states "*Offshore Ornithology: It was agreed that one year of aerial surveys will be undertaken to inform the offshore ornithology EIA*." Natural England advises that a minimum of two years of survey data are required to characterise the baseline for offshore ornithology EIA. Having less than two years of data will increase the uncertainty around the offshore ornithology impact assessment and will increase the risk for the Applicant that Natural England will not be able to reach conclusions regarding the impact assessment.

8.4.3 and 8.4.4: "*The North Sea – this is the regional offshore ornithology study area and coincides with the northern and southern North Sea as defined by the regional seas identified by JNCC for implementing UK nature conservation strategy (JNCC, 2004). This North Sea offshore ornithology study area provides a wider context for the site-specific data and is the area covered by the desktop review including consideration of species specific foraging ranges, migration routes and wintering areas."* Natural England notes that alternative spatial scales may be relevant for some species and aspects of the ornithology assessment. The appropriate spatial scale will depend on the ornithological receptor species being considered as well as the time of year when the impact is predicted. Natural England would welcome further discussion with the Applicant regarding the appropriate spatial scale for each species and season.

8.4.7: Note that there were a number of missing months in the survey coverage of the former Hornsea Zone – for example there were no Hornsea Zone transects counted in Sept 2011, Oct 2011, Dec 2011, Jan 2012, Feb 2012, Nov 2012; Dec 2012, Feb 2013 and there was reduced/low coverage in Nov 2010, Dec 2010, Jan 2011, Feb 2011, Nov 2011, Apr 2012, Sept 2012, Oct 2012 and Jan 2013. Therefore it is not accurate to say that there were monthly surveys throughout the whole of the Hornsea Zone over a 3 year period.

Are the dates correct for the Hornsea Project Two surveys – did they run from March 2010 or should that be March 2011?

8.4.19: Table 8.15 and Table 8.16 summarise seabird population estimates and distributions recorded within the former Hornsea Zone, in particular between 2011 and 2012. Section 8.4.19 states "*This overview of this data indicates that Hornsea Three does not represent an area of significant importance for breeding, passage or wintering seabirds*." This is not a clear conclusion that can be drawn from the data provided in Table 8.15 and 8.16. For example, Table 8.16 says "*Fulmar: Homogenously distributed across the zone in both survey years." "Gannet: Gannet distribution was consistent throughout the year, with individuals observed throughout the former Hornsea Zone." "Lesser black-backed Gull: The majority of records were distributed in the eastern section of the former Hornsea Zone, to the east of Project Two." "Great black-backed gull: Records scattered throughout area with no discernible pattern of site use." "Razorbill: Records distributed throughout the former Hornsea Zone, with no discernible pattern of site use." "Kittiwake: Distributed throughout area, with no discernible pattern of site use."*

Table 8.15: Natural England do not agree with the breeding seasons as presented in Table 8.15.

Furness *et al*. (2015) define breeding seasons for UK birds based on an assessment of median return data to colonies in the UK, but the months presented in the table as the breeding season months for each species do not match the ones in Furness *et al*. (2015). We advise that the breeding season months as defined by the median return date for UK colonies from Furness *et al*. (2015) should be the starting point. For some species there will then be an overlap between months defined as breeding season and some of the non-breeding season months. Further, for individual colonies of interest there may be colony specific data on occupancy in the breeding season that will be relevant to the assessment and should be considered. We would welcome further discussion regarding the most appropriate approach to defining breeding seasons as part of the Evidence Plan process.

The table also needs a better key to indicate that the numbers in brackets indicate estimates that are based on low survey coverage and that "#" means "no data".

8.4.23: This section states "*The Hornsea Three offshore ECR corridor (Figure 8.18) enters inshore waters at the Greater Wash <…> Three species, red-throated diver, common scoter and little gull dominate the Greater Wash wintering bird community (Lawson et al., 2016).*" In this section there is no specific mention of the Greater Wash proposed SPA (pSPA) which the ECR corridor passes through. Instead the text refers to the birds associated with the "Greater Wash". It would be useful to distinguish between definitions of the more general Greater Wash area and the specific Greater Wash pSPA. As well as a wintering red-throated diver, common scoter and little gull, there are also breeding bird species that are relevant to the inshore/offshore waters at the Greater Wash (and specifically the Greater Wash pSPA) – namely Sandwich tern, common tern and little tern. While Sandwich tern and common tern are mentioned in para 8.4.24 there is no mention of little tern as being of potential relevance to the ECR corridor assessment in this section although the species is listed in Table 8.18 as a feature of the Greater Wash pSPA.

8.4.24: Relative usage of the waters in the vicinity of the Hornsea Project Three ECR may be low but given the location of the export cable route in relation to the boundary of the Greater Wash pSPA, it is considered that there is potential for tern features to be subject to impacts associated with the offshore cable route. It is therefore considered that there is potential connectivity between these components of the Project and little, common and Sandwich tern as features of the possible Greater Wash SPA and therefore these features need to be considered in the EIA.

8.4.27: We note that the values in Thaxter *et al.* (2012) should not be viewed as the only source of available information. Assessments should always be based upon the best and most up to date evidence available. Thus, in some situations, it may be justified to consider screening in SPAs beyond published mean maximum foraging range of the qualifying features. For example, new tracking data may suggest that previous maximum ranges for a species were underestimated; thus, it may be appropriate to derive new maximum and mean maximum ranges.

The Hornsea Project Three scoping report does go onto to consider colony-specific evidence from tracking studies, and we welcome this approach and reiterate that Natural England's position is to consider all sources of evidence with regards potential connectivity between development sites and breeding colonies, and that given this sites should not be screened out of assessments using Thaxter *et al.* (2012) alone, if there are other sources of evidence available.

8.4.29: It would be clearer to state that there is the potential for breeding season connectivity with a number of SPAs for fulmar, rather than saying "*with the exception of fulmar*…" Fulmar are part of the seabird assemblage feature at Coquet Island, Farne Islands and Northumberland Marine pSPAs as well as Flamborough and Filey Coast pSPA and these sites are within mean maximum foraging range of the Hornsea Zone.

8.4.31: The Flamborough Head and Bempton Cliffs SPA citation still only includes kittiwake as a feature and does not include a seabird assemblage feature. The Flamborough Head and Filey Coast pSPA includes kittiwake, gannet, guillemot and razorbill as qualifying features as well as a seabird assemblage feature which includes fulmar (as a named component), herring gull, puffin, shag and cormorant. It is not clear where the 300,000 individual seabirds referred to in section

8.4.31 comes from as the citation for the pSPA gives the Assemblage as 215,750 individuals.

8.4.32: There is no mention here of other bird species such as wildfowl and waders which also have the potential to be found within the offshore array areas during migration periods and which may have connectivity with a number of more distant UK SPAs.

8.4.33: The Greater Wash site is now out to consultation and so has pSPA status.

8.4.34: That is correct, so it is not only species that are named under the assemblage qualification on the SPA citation that need to be considered – it is any seabird species present at the SPA.

Table 8.18: *"Statutory designated sites of bird conservation importance within proximity of Hornsea Three with cited features of relevance to offshore ornithology*" is unclear as it omits some of the features of the SPAs listed that do have potential connectivity with the Hornsea Project Three site (e.g. guillemot and razorbill at Flamborough and Filey Coast pSPA), and also omits a range of SPA and Ramsar sites that have designated features with potential connectivity with Hornsea Project Three, in particular outside of the breeding season. It would be clearer if the table set out more general principles that will be applied to scope in designated sites and features, rather than listing sites and species at this stage. For example:

- SPAs and Ramsar sites designated for breeding seabird populations of species that are recorded in the Hornsea Project Three project area and where there is potential connectivity between the individuals and the sites. During the breeding season information on foraging ranges will determine the sites from which birds observed in the Hornsea Project Three development area during the breeding season could derive. However, seabirds present within the development area at all times of the year (including wintering/passage periods) could also derive from these breeding sites and, therefore, it is not possible to screen sites out solely on the use of foraging range during the breeding season;

- SPAs and Ramsar sites designated for wintering / passage seabird populations, across the North Sea and throughout the UK for species recorded in the Hornsea Project Three area; and

- SPAs and Ramsar sites that support designated populations of migratory species (including species that may form part of internationally important assemblages of waterbirds) that could pass through the Hornsea Project Three area.

Table 8.18: Reference to "The Greater Wash possible SPA" should be updated as the site is now a proposed SPA (pSPA).

Fig. 8.21: An updated boundary map for the Greater Wash pSPA can be obtained from: http://www.gis.naturalengland.org.uk/pubs/gis/GIS_register.asp The boundary is contained in a single zip file which can be accessed by selecting the Potential Special Protection Areas (Marine) option from the dropdown menu under Other GIS Datasets.

Table 8.19 International/European Value: In defining terms relating to the ecological value (Sensitivity) of bird species for international importance there is no consideration of IUCN listing e.g. species classed as globally endangered (CR, EN, VU).

Table 8.19 National Value: Annex I species of Birds Directive is listed as a criterion for national importance, but given that these are species and sub-species that have been assessed as particularly threatened across member states it is not clear why this should not be a criterion for International/European value.

Table 8.19 Regional Value: Species listed on the Birds of Conservation Concern Red list (Eaton *et al.*, 2015) are used to determine "Regional Value", but there is an argument to say that red listed species should be Nationally important since BoCC is a national assessment of conservation status.

Table 8.19 Local Value: Following the logic above, Amber-listed species listed on the Birds of

Conservation Concern (Eaton *et al*., 2015) could be defined as having regional value.

Table 8.20 Impact 1: We are unclear about why the disturbance/displacement impacts associated with construction only details information about the inter-tidal areas and only mentions little tern specifically. This is confusing and does not seem to be complete. There is the potential for disturbance/displacement in the offshore project and cable route areas and also in the near-shore and coastal areas along the offshore cable route and not just specifically the cable landfall site. This includes construction activities associated with installation of export cables and infrastructure as well as increased vessel activity from construction activities. There is the potential for connectivity between these components of the project and a number of species including in near shore areas, common scoter, red-throated diver, common tern, Sandwich tern and little tern (i.e. not just little tern).

Table 8.20 Impact 4: The Applicant states *"Whether use is made of the latest version of the model that takes better account of the uncertainty around collision risk prediction (Madsen, 2015) is to be agreed with the relevant SNCBs".* Natural England's view is that it is important to reflect the variability and uncertainty around the various input parameters used for collision risk assessment. This includes variability around densities of birds at the project site, flight heights, flight speeds, avoidance rates and turbine rotor speed. Band (2012) recommends that uncertainty around these need to be reflected in the outputs, but the model does not provide a mechanism to statistically model the combined effects of uncertainty across a range of input parameters. A recent update to the Band (2012) model by Masden (2015) has included a simulation approach that allows the incorporation of variability and uncertainty in the collision modelling outputs, producing average collision estimates with associated confidence intervals. Natural England considers that being able to quantify the uncertainty and variability around the collision estimates is important therefore we recommend that the Applicant considers using Masden (2015) to calculate the risk of collision for seabirds present in the project area. As this is a newer version of the Band model, Natural England would welcome further discussions with the Applicant regarding the appropriate data and input parameters to use with the collision risk model.

For migratory birds with connectivity to the project area the Applicant should consider using a methodology for assessing collision risk of migratory birds such as that set out in:

> SOSS Migration Assessment Tool (SOSS-MAT), part of the SOSS-05 project: see: Wright, L. & Austin, G. (2012) SOSS Migration Assessment Tool Instructions, Available from: https://www.bto.org/sites/default/files/u28/downloads/Projects/SOSSMAT_Instructions.pdf
>
> or: Marine Scotland Science report on Strategic assessment of collision risk of Scottish offshore wind farms to migrating birds (WWT Consulting 2014, available from: http://www.gov.scot/Resource/0046/00461026.pdf

Table 8.20 Impact 6: Again it is not clear why only little tern is identified as a VOR here.

Table 8.21: The impact of pollution including accidental spills and contaminant releases associated with rigs and supply/service vessels which may affect species' survival rates or foraging activity has been scoped out from all development phases. Natural England does not agree that this should be removed from the scoping report. We note that accidental pollution has been scoped in for benthic ecology and marine mammals (Table 8.4 – Impacts 3, 8 and 13 and Table 8.13 – Impacts 6, 13 and 18). If pollution control methods are to be addressed in detail in either the benthic ecology and/or marine mammals ES chapters it would be sensible for the ornithology assessment to signpost readers to this, and briefly assess the effectiveness of the proposed mitigation measures with regards to marine birds, rather than repeating the information.

Table 8.21 Impact 4: This impact is retained in the construction and decommissioning phases. This seems reasonable as if there is permanent habitat loss during the construction phase there doesn't seem to be a need to reassess that during the operational phase, and if there has not been a loss during the construction phase it seems less likely that one would occur in the operational phase. The only caveat would be if maintenance activities during the operational phase could result in

additional indirect permanent habitat loss.

Table 8.21 Impact 5: Disturbance from lighting is scoped out in Table 8.21. Natural England does not agree that this should not be considered in the ES. Lighting on the turbines in order to meet aviation and shipping safety requirements, as well as lighting associated with accommodation platforms and floodlighting for construction activities may have a number of impacts on birds (Longcore and Rich, 2004, Drewitt and Langston, 2008). During the hours of darkness and in certain weather and lunar conditions, birds may be attracted to lights. There is evidence that this can cause high levels of mortality (e.g. Verheijen, 1981, Jones and Francis, 2003, Hüppop *et al.,* 2006). Any attraction to lighting in the wind farm is likely to increase the risk of collision with the turbine blades and structures as well as disorientation leading to exhaustion and mortality. Migrating birds are likely to be particularly susceptible to any adverse effects of lighting as many bird species migrate during darkness, when collision risk is expected to be higher than during daylight (Hüppop *et al.,* 2006, Alerstam, 2009). With a number of built, consented and proposed projects in the offshore environment, the implications of the proposed lighting merit consideration to inform assessment of cumulative impacts in particular. We recognise that this assessment will be mainly qualitative in nature.

Alerstam, T., 2009. Flight by night or day? Optimal daily timing of bird migration. *Journal of Theoretical Ecology*, 258, 530-536.

Drewitt, A. L. and Langston, R. H. W., 2008. Collision Effects of Wind-power Generators and Other Obstacles on Birds. *Annals of the New York Academy of Sciences* 1134, 233-266.

Hüppop, O., Dierschke, J., Exo, K. M., Fredrich, E. and Hill, R., (2006). Bird migration studies and potential collision risk with offshore wind turbines. *Ibis* 148 (Suppl. 1), 90–109.

Jones, J. and Francis, C. M., 2003. The effects of light characteristics on avian mortality at lighthouses. *Journal of Avian Biology* 34, 328–333.

Longcore, T. and Rich, C., 2004. Ecological light pollution. *Frontiers in Ecology and the Environment*, 2(4), 191-198.

Verheijen, F.J., 1981. Bird kills at tall lighted structures in the USA in the period 1935-1973 and kills at a Dutch lighthouse in the period 1924-1928 show similar lunar periodicity. *Ardea* 69: 199-203.

Table 8.21 Impacts 1 and 7: The Applicant is proposing to scope out permanent habitat loss from the construction phase and decommissioning phase and instead only consider under operation and maintenance. This seems reasonable as it prevents repetition in the assessment of impacts that will be considered under the operational phase.

Annex 4 – Offshore human and socio-economic environment (Chapter 9)

9.1: We agree with the scoping in of impacts on commercial fisheries and the undertaking to liaise with fishing fleets as part of the project.

9.5: Natural England is the statutory adviser to Government on nature conservation in England and promotes the conservation of England's wildlife and natural features. With regards to landscape and visual impacts we only advise where highly sensitive visual receptors are located within a designated landscape and are undertaking 'countryside recreations activities' (walking, riding bikes etc.), where the appreciation of the visual amenity provided by the designated landscape is an important aspect of their experience. People undertaking offshore recreational activities (sailing, travelling) do not fall into this this group.

Table 9.11: Although the assessment of transitional visual impacts on various sea users falls outside Natural England's remit, we would recommend that a full Seascape Character Area assessment is undertaken. The project may have a potential for visual disturbance impacts, especially on recreational sailors and ferry passengers, and we believe that a full consultation and assessment may be appropriate in this case. Hornsea Project One has proposed up to 240 turbines, Project Two – up to 360. Hornsea Project Three proposes an additional 400 turbines and several other offshore structures to be added to the "potential" 700 turbines of Projects One and Two. This may result in a significant change to the seascape. Another point to highlight is that different arrays tend to have different-sized turbines and variable layout within the boundary. Therefore, it is hard to justify that a new array will not alter the seascape significantly, when it may appear completely different against the existing structures.

Table 9.11 Impacts 2 and 4: We agree that that the "sea to land" visual impact of the project array and the offshore substations can be scoped out due to the distance from the shore.

Annex 5 – Onshore physical, biological and socio-economic environment (Chapters 10-12)

The onshore cable route and infrastructure has the potential to affect six internationally designated sites and several nationally designated sites. We note that North Norfolk Coast SAC and The Wash and North Norfolk Coast SAC have not been included in Table 11.1. We advise that the cable route and infrastructure should avoid all designated sites, including local designated sites, in the first instance. If it is entirely unavoidable that the cable route will cross a designated site, for example as in the case of the river Wensum SAC, we would expect potential installation options to be discussed during the Evidence Plan process and appropriate survey data and mitigation provided. Please be advised that many of the habitats and designated sites along the route are ecologically linked (this is particularly the case when considering nationally and locally designated sites and habitats near to the River Wensum and within the Norfolk Valley Fens SAC network of sites) and therefore effects on any designated sites should not be considered alone, but in the context of the wider environment.

Internationally designated sites

The River Wensum SAC: The cable route has potential to directly affect both the hydrological processes and habitats present within the River Wensum SAC. There are many springs and seepages along the length of the river which would not be detectable during a desk study, and if missed has the potential to damage the river system, resulting in changes to the direction and speed of flow of the river water supply. Furthermore there are floodplain meadows that form an integral part of the SAC that may be directly damaged by setting up the start of the underground cable within the wrong location. We therefore recommend that prior to any decisions on location a hydro-ecologist is employed to survey the area, to check for seepages/springs and to review where to place the cable to avoid damaging the habitats associated with the SAC. We would welcome placement of the cable as far away from the river as feasible, to protect the habitats and wildlife present in close proximity to the river.

A qualifying species of the Wensum SAC is Desmoulin's whorl snail. This species is likely to be present throughout the area surrounding the Wensum, being particularly prevalent in locally designated greenspace such as Lenwade and Great Witchingham Common and ditches and wet margins nearby. A survey should therefore be carried out along the route, which should take place mid to late summer.

Norfolk Valley Fens SAC and component SSSIs: The area along the cable route includes several sites that form part of the Norfolk Valley Fens SAC. These sites, along with many of the locally designated sites in the area, form a complex network of hydrologically linked sites which are very sensitive to changes in water levels, quality or flow. Some of the sites that form part of this network and may be affected by the cable route are Alderford Common, Swanningate Upgate Common, Booton Common SSSIs (though this list is not exhaustive). we recommend that a desk study is carried out to ensure that all SSSIs associated with this SAC that may be affected by the cable route are scoped into the assessment. We advise that the Environmental Statement considers in detail how the placement of the route will affect surface and ground water flow across any of the sites that are components of the Norfolk Valley Fens SAC, along with any County Wildlife sites with a hydrological focus.

North Norfolk Coast SPA, Ramsar and SAC: the proposed corridor and infrastructure sites may have a direct effect to interest features of the above designated sites, or to any of their component SSSIs. The proposal could result in loss of habitat that is functionally linked to these international sites and in disturbance to birds using this habitat during construction. It is likely that the main species of concern within the European and international sites would be Brent and Pink footed geese (although all interest features of the sites should be considered).

Nationally designated sites

As well as all the hydrological issues outlined in the context of the European sites, the nationally designated sites along the route have separate interest features that will need to be taken into

account. The river Wensum SSSI, Alderford Common SSSI and many of the other nationally and locally designated sites along the route support breeding birds including barn owl, kingfisher, warblers, nightingale and turtle doves, for example. Therefore we advise that full breeding bird surveys are undertaken along the full length of the route and mitigation provided accordingly. Also, we advise that best practice is to reinstate as much habitat along the route that supports breeding birds as possible, such as field margins, hedgerows, trees and scrub. Further sites that will need consideration along the route are Cawston and Marsham Heaths, Foxley Wood, Honeypot Wood and Beetley and Hoe Meadows SSSIs, all of which are designated as representative of rare habitats. Cawston and Marsham Heaths is the largest area of Heather-dominated heathland now remaining in east Norfolk whilst Foxley Wood (SSSI and NNR) is the largest example of ancient woodland in Norfolk. Sites designated as examples of particular habitats evidently need to be avoided and consideration should be given on how to avoid pollution of any of these sites.

We have not covered all the SSSIs that may be affected along the route here as we wish to highlight the main issues. However, we advise that all nationally designated sites within the cable route area are given consideration. Further information on SSSIs and their interest features can be found at www.magic.gov. We recommend that the Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within all designated sites that have potential to be affected by the cable route and should identify such mitigation measures as may be required in order to avoid, minimise or reduce any significant impacts.

Locally designated sites

Natural England advises that the Environmental Statement should consider any impacts upon local wildlife or geological sites and avoid these sites where possible, or mitigate for any impacts. Note that many of these sites link directly to SSSIs along the routes, such as those adjacent to Holt Lowes, Booton Common and the River Wensum SSSIs. More information on all the county wildlife sites in Norfolk can be found here: http://www.nbis.org.uk/CWS.

Invasive non-native species

We note that no consideration is given to avoiding impacts of invasive non-native species. It appears that the cable route will also need to cross several rivers and hydrological systems, such as the river Glaven. There is potential for the works to spread invasive species between the rivers and other features. For example it would be possible to contaminate the sites selected for crayfish relocations around North Norfolk, by re-introducing crayfish plague to these sites. Other species in this area that could be transmitted to other locations include the Chinese Mitten Crab and Killer Shrimp. As well as the potential to spread species and disease across waterways, whilst working on the river bank there is potential to spread invasive plant species such as Himalayan Balsam. Therefore it is very important that an invasive species protocol is included in the Environmental Statement. There is also potential to pollute the river during construction or maintenance and therefore we expect the Environmental Statement explain how it is intended to avoid these issues and to include an Environmental Construction Management Plan (CEMP) to protect the river from pollution during works.

Cumulative Impacts

Natural England has particular concerns regarding the cumulative effects of the onshore Hornsea Project Three landfall site when considered in-combination with the proposed Vattenfall onshore cable route. The proximity of the two routes has potential to heighten effects at both cable locations, for example in terms of disturbance to species and disruption of hydrological processes. We expect a full assessment of all potential effects due to the combination of these two cable routes in the Environmental Statement.

The proximity of the two proposed cables routes (i.e. Hornsea Project Three and Norfolk Van Guard) at the beginning of the onshore sections causes concern. The routes pass close to Bacton Gas Terminal, which is located in close proximity to the cliffs along the North Norfolk coastline,

including Mundesley Cliffs SSSI. The cliffs are made of soft material and, despite the presence of a number of coast protection structures, are highly vulnerable to erosion. During the December 2013 storm, the cliff line receded by up to ten metres at the toe of the cliff, with up to three metres lost at the top of the cliff imposing an increased risk to the security of the gas supply process assets within the site. In addition, there are 15 pipelines beneath the beach that may be at risk of exposure and damage. The pipelines come onshore buried beneath the beach and then reach the terminal through shafts located behind the cliffs.

Natural England is also currently working on an application involving short term protection works around Bacton and this is coupled with long term coastal defence works involving sand scraping planned over the next 5-20 years which has potential to alter coastal processes that will need to be taken into consideration in any in-combination and/or cumulative impact assessment.

Furthermore new rights have now commenced on the stretch of coastal path within the vicinity of the landfall. Norfolk County Council, who is the access authority, will lead on resolving a day to day management issues such as the need for a temporary closure and alternative route to enable a sea defence scheme. Taking all that into account, we would expect a comprehensive assessment of in-combination and cumulative effects involving all the above.

Protected Species

We recommend that the Environmental Statement should assess the impact of all phases of the proposal on protected species. The proposed cable route crosses areas known to support high numbers of great crested newt, bats and breeding birds. Badger, reptile, water voles, invertebrates and botanical surveys will also be necessary. We advise that records of protected species are sought from appropriate local biological record centres, nature conservation organisations, groups and individuals. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment. Natural England has adopted standing advice for protected species which includes links to guidance on survey and mitigation which we hope you will find helpful and can be found on our website

We note that as well as the species listed above, we recommend a thorough assessment of the impact of the proposals on habitats and/or species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List, published under the requirements of S41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act 2006 places a general duty on all public authorities, including local planning authorities, to conserve and enhance biodiversity. Further information on this duty is available in the Defra publication 'Guidance for Local Authorities on Implementing the Biodiversity Duty'.

Landscape and visual impacts

As infrastructure associated with the proposed wind farm is evidently near the Norfolk Coast Area of Outstanding Natural Beauty (AONB), consideration should be given to the direct and indirect effects upon this designated landscape. In particular consideration should be given the effect upon its purpose for designation, as well as the content of its management plan.

The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.

Natural England supports the publication Guidelines for Landscape and Visual Impact Assessment, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape

and visual impact assessment.

Soil and Agricultural Land Quality

Impacts from the development should be considered in light of the Government's policy for the protection of the best and most versatile (BMV) agricultural land as set out in paragraph 112 of the National Policy Planning Framework (NPPF). We also recommend that soils should be considered under a more general heading of sustainable use of land and the ecosystem services they provide as a natural resource in line with paragraph 109 of the NPPF.

Annex 6 – Marine Conservation Zone Screening (Appendix C)

The Cromer Shoal Chalk Beds MCZ is an unique habitat in the North Sea and has both geological and biodiversity importance. We do not believe that impacts to interest features of the site can be avoided, if as proposed up to six cables are taken through the site. Therefore, thorough consideration should be given to alternative routes avoiding the MCZ and this should be presented in the Environmental Statement.

If there are not alternative options, then significant impacts will need to be appropriately mitigated and/or measures of equivalent environmental benefit secured. Natural England will continue to work with the Applicant and the MMO through the evidence plan process to identify a suitable option for all parties.

In addition to those features of the MCZ identified in the scoping document, we wish to highlight that Defra has requested that Natural England provides advice to them regarding the potential to add further features to the Cromer Shoal Chalk Beds MCZ as part of the Tranche 3 process. We are currently reviewing the evidence thoroughly to ensure confidence in the rationale for designating any additional features and have consulted with some stakeholders to inform them of the potential for additional features and gather any further evidence. Material consideration of these features will be required if taken forward for public consultation in summer 2017, therefore consideration of these features would be a sensible approach by the developer given the accelerated timeframes for Hornsea Project Three.

From:	Newton Flotman Parish Clerk
To:	Environmental Services
Subject:	Hornsea Project Three Offshore Wind Farm
Date:	16 November 2016 06:42:30

Ref: 161026_EN010080-000064

Thank you for your letter dated 26th October regarding the scoping consultation and notification of the applicant's contact details and duty to make available information to the applicant if requested.

Newton Flotman Parish Council confirm that they do not have any comments in relation to this.

Best regards,

Julie

Mrs Julie King
Clerk to Newton Flotman Parish Council

Tel No. 01508 470759
Email address: clerk@newtonflotmanpc.co.uk
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Norfolk County Council comments on the Hornsea Project Three Offshore Wind Farm
Environmental Impact Assessment
Scoping Report

November 2016

1. Introduction

1.1. The County Council welcomes the opportunity to comment on the above Scoping Report. The officer-level comments below are made on a without prejudice basis and the County Council reserves the right to make further comments on the above proposal throughout the Development Consent Order (DCO) / application process.

2. Strategic Comments

2.1. **General** - the Scoping Report is considered very comprehensive and addresses most of the issues the County Council would expect to see in an EIA. Attached to this schedule (see Appendix) is the County Council's standard Scoping Opinion statement in respect to both onshore and offshore wind farms and their ancillary development. The County Council would ask that this Standard Scoping Opinion be taken into consideration along with the comments below:

2.2. **Onshore cable route & onshore relay station** – it is felt that as part of the EIA there needs to be an investigation into the opportunities for using the imported electricity to provide power to the local network (132 kv) particularly, but not exclusively, in the North Walsham area where it is understood there are energy deficits. The Scoping Report refers to a potential cable relay station being sited within 10 - 15 km of the coast where the offshore cables make landfall. It is understood that there may be the possibility of extending this distance, which could include bringing the market town of North Walsham within the scope of the search area and thus allow for some local benefits in terms of electricity supply. The EIA ought to address whether there is any opportunity for such an option.

2.3. The EIA should also consider whether there are any opportunities for using the offshore electricity supply elsewhere in Norfolk (i.e. to feed into the local networks – 132kv) prior to grid connection into the 400kv network. The EIA should consider the opportunities for onshore cable route to connect to the local distribution networks in and around:

(a) North Walsham – to assist with local electricity supply issues;

(b) Strategic Housing allocation to the North of Norwich; and

(c) Snetterton –

Therefore the EIA should consider the potential opportunities arising from the offshore wind farm as a means of addressing local supply issues in the County.

2.4. **National Grid (400 kv network)** – The EIA needs to consider the wider implications and impact on the 400 kv network resulting from the Norfolk Vanguard and Boreas proposal. The EIA should also consider the cumulative impacts on the network

associated with other consented; and planned offshore proposals, which will connect into the Grid in Norfolk. In particular the EIA should consider whether there will be a need for the existing 400 kv network to be either:

(a) Reinforced; and/or

(b) Upgraded involving new overhead lines.

2.5. While the 400 kv network lies outside the scope of the above proposal there will clearly be a demonstrable impact on the National Grid infrastructure in terms of grid connection and its overhead lines.

2.6. **Onshore Cumulative Impacts** – The County Council welcomes reference on pages 309 (Ecology) and 322 (landscape) to the need to take into account the onshore cumulative impacts arising from this and other proposals/developments. The EIA should consider the opportunities for any potential synergy with other planned/proposed wind farms (i.e. the Vanguard and Boreas Wind Farm Proposals), particularly in relation to the possibility of sharing onshore infrastructure such as cable routes; relay stations and substation connection points.

2.7. **Security** – The EIA should address what security measures will be put in place both during construction and when the project is operational. Given the significant amounts of electricity potentially to be generated from the above proposal (2.4 GW), the County Council would want reassurance that security for any onshore facilities has been properly and effectively addressed and will not have any adverse impacts on local communities or services.

Transport

2.8. The EIA basically says Dong Energy will seek to ensure that the project does not cause any disruption to traffic and that they will look at travel planning. However, it does not actually say a lot in terms of how they will achieve all that. As such the EIA will need to address the following highway matters (please note that these highway comments supersede those in general highway comments in the appended Standard Response:

2.9. **Cabling Route / Grid connection** - description of the route(s) including plans at an appropriate scale incorporating, for example:-

• details of temporary construction compounds;
• identification of any sensitive features along route e.g. impact upon holiday traffic and traffic sensitive streets; and
• traffic impacts of grid connection enabling works.

2.10. If the proposals involve the construction of an **on-shore facilities** then the nature of the traffic likely to be generated will need to be considered. In addition for the largest vehicles proposed to use each access route(s) this must include: -

• minimum width (including unhindered horizontal space);
• vertical clearance; and
• axle weight restriction.

2.11. **Access & Access Route** – The EIA will need to provide a description of the route (including plans at an appropriate scale incorporating swept-path surveys) and include:

• detailed plans of site access/es incorporating sightline provision;
• confirmation of any weight restrictions applicable on the route together with details of contact with the relevant Bridge Engineer;
• overhead/ underground equipment – details of liaison with statutory undertakers - listing statutory undertakers consulted together with a copy of their responses; and
• details of any road signs or other street furniture along each route that may need to be temporarily removed/relocated.

2.12. **Impacts during construction** – The EIA will need to address whether there are any special requirements needed for abnormal loads. If so provide details e.g.:-

• removal and reinstatement of hedgerows – since these are usually in private ownership has contact been made with the owners. Has formal legal agreement been reached or are negotiations pending/ in progress;
• identification of the highway boundary along the construction traffic route together with verification from the Highway Authority (where appropriate to allow access by abnormal loads);
• confirmation of whether the identified route involves the acquisition of third party land and if so has consent been given, (verbal or has a formal legal agreement been entered into);
• confirmation of any required third party easements – e.g. will construction vehicles need to overhang ditches (these are usually in private ownership), private hedges or open land adjacent to the highway. If so, details of consent (verbal or a formal written agreement);
• any modifications required to the alignment of the carriageway or verges/over-runs
• identification of sensitive features along route – including traffic sensitive streets;
• trimming of overhead trees – has a survey been undertaken to identify trees that will need to be trimmed and if so what steps have been undertaken to identify the owners of those trees;
• confirmation of whether any affected trees are covered by a tree preservation order;
• confirmation of whether any of the verges along the route(s) are classified as SSSI or roadside Nature Reserve status. If so, detail any impact;
• confirmation of any extraordinary maintenance agreement/s required by the Highway Authority.

2.13. Should you have any queries with the above transport comments please contact John Shaw (Senior Engineer) on 01603 223231 or email John.R.Shaw@norfolk.gov.uk

Offshore Issues

2.14. **Commercial Fishing** -

The County Council welcomes reference in the Scoping Report to the need for an

assessment of the potential cumulative impacts on commercial fishing interests (paragraphs 9.1.20 – 22 page 199).

Reference in paragraph 9.1.21 to consideration of other wind farms and cabling infrastructure etc should specify;

(a) Which projects will be considered as part of the cumulative analysis. This should include those projects in the East Anglia Zone (Round 3) as well as those other projects off the Norfolk coast consented under previous licencing Rounds; and
(b) Include not just those operational windfarms but also those consented and proposed and include consideration of the Vanguard and the Boreas Windfarms.

Commercial fishing contributes to the coastal economy in Norfolk and as such the impacts of this proposal alongside those already operation, consented or planned needs to be carefully considered.

2.15. **Shipping and Navigation**

2.16. The County Council welcomes reference in the Scoping Report to the need for an assessment of the potential cumulative impacts on shipping and navigation (paragraphs 9.2.36 – 39 page 215).

Reference in paragraph 9.1.37 to the consideration of other wind farms and cabling infrastructure etc should specify;

(a) Which projects will be considered as part of the cumulative analysis. This should include those projects in the East Anglia Zone (Round 3) as well as those other projects off the Norfolk coast consented under previous licencing Rounds; and
(b) Include not just those operational windfarms but also those consented and proposed and include consideration of the Vanguard and the Boreas Windfarms.

2.17. The impacts need to be considered in terms of (a) commercial shipping; (b) fishing vessels and (c) recreational vessels. The County Council acknowledges that it will be a matter for the appropriate regulatory bodies to comment on the detailed matters relating to shipping and navigation, however, the County Council is keen to ensure that there will not be any demonstrable negative impact on Norfolk's ports as a consequence of the proposed offshore wind farms and any potential change in shipping and navigational routes.

2.18. Should you have any queries with any of the above comments (section 2) please contact Stephen Faulkner (Principal Planner) on 01603 222752 or email stephen.faulkner@norfolk.gov.uk

3. Environment

3.1. The scoping report is comprehensive and clearly fit for purpose. Reassuringly the information it presents is up-to-date (including, for example, correct referencing to the Draft Greater Wash SPA and the most recently opened sections of the England

Coast Path).

In paragraph 8.4.2. reference is made to the landfall area and foraging water birds. It correctly identifies that the inter-tidal area is sub-optimal for such feeding waders. However, the Environment Team would draw attention to the wetland area immediately behind the shingle bank, named 'Kelling Quags' (Grid Ref TG094436) which is locally well-known as supporting waders.

There is typographic error in respect of the heading in Table 11.1 (page 304). The heading reads "Regional *destinations*", when it should read "County-level *designations*".

3.2. Should you have any queries with any of the above comments please contact Dr David White (Senior Green Infrastructure Officer) on 01603 222058 or email david.white.etd@norfolk.gov.uk

4. Minerals and Waste

4.1. Norfolk County Council in its capacity as the Mineral and Waste Planning Authority for Norfolk has the following comments to make.

4.2. **Paragraph 10.1.4 Baseline data**
Additional data sources should be added to the list

- Safeguarded Mineral resources mapping, as defined within the adopted Norfolk Minerals and Waste Local Development Framework; and
- Safeguarded Mineral and Waste sites, as defined within the adopted Norfolk Minerals and Waste Local Development Framework.

4.3. **Additional Paragraph after paragraph 10.1.12**
To ensure that the potential for impacts to safeguarded mineral resources and mineral and waste sites are appropriately assessed, an additional paragraph is required:

> Mineral Safeguarding Areas/Mineral Consultation Areas are recognised in national policy, and there is a requirement for Mineral Planning Authorities to define these areas as part of the mineral planning process. The adopted Norfolk Minerals and Waste Local Development Framework addresses these requirements, and forms part of the Development Plan for Norfolk.
> Norfolk County Council in its capacity as the Mineral Planning Authority has defined Mineral Safeguarding Areas to cover sand and gravel, carstone and silica sand, these areas are also defined as Mineral Consultation Areas for mineral resources.
>
> National policy also requires Mineral and Waste Planning Authorities to safeguard existing mineral and waste sites and mineral site allocations. In Norfolk this is defined within the Norfolk Minerals and Waste Local Development Framework, and a list of safeguarded sites is maintained. Safeguarded sites are surrounded by a consultation area. The baseline data contains references and mapping for the safeguarded mineral resources and sites. Minerals and Waste Core Strategy Policy –CS16 'safeguarding'

contains more information regarding mineral resource and mineral and waste site safeguarding in Norfolk.

4.4. Table 10.2 should be amended to take into account the potential for impacts to safeguarded mineral resources and safeguarded mineral and waste sites.

4.5. Should you have any queries with the above comments please contact: Caroline Jeffery (Principal Planner, Minerals and Waste Policy) on Telephone: 01603 222193 or Email: caroline.jeffery@norfolk.gov.uk

5. Lead Local Flood Authority (LLFA)

5.1. The LLFA strongly recommend that any EIA includes or planning application for development is accompanied by a flood risk assessment (FRA) / surface water drainage strategy to address:

- Local sources of flood risk, including those from ordinary watercourses, surface runoff and groundwater
- How surface water drainage will be managed on the substation sites and show compliance with the written Ministerial Statement HCWS 161 by ensuring that Sustainable Drainage Systems for the management of run-off are put in place.
- Post construction ground levels not disrupting current overland flow routes along and across the alignment of the proposed underground cables for land at risk of flooding.
- Temporary arrangements to maintain overland flow paths that cross the alignment of the proposed underground cables for land at risk of flooding.
- The requirement to seek consent from Norfolk County Council (NCC) for works that affect the flow in ordinary watercourses outside of the control of an IDB.

5.2. This supporting information would need to show how the development does not increase flood risk on the site or elsewhere, in line with National Planning Policy Framework (paragraph 103). In this particular case this would include appropriate information on;

- Sustainable Drainage Systems (SuDS) proposals in accordance with appropriate guidance including “Non-statutory technical standards for sustainable drainage systems” March 2015 by Department for Environment, Food and Rural Affairs.

5.3. The LLFA welcome that the applicant indicates that a Flood Risk Assessment (FRA) will be completed and it is recommend that this is undertaken in line with the requirements of the National Planning Policy Framework (NPPF).

5.4. The LLFA also welcome that the applicant indicates that an FRA will include a drainage strategy for the preparation of the onshore HVAC booster station and HVAC/HVDC substation site. It is recommended that appropriate SUDS features are incorporated into the development in accordance with policy guidelines. Where any SuDS are proposed it is important to demonstrate that the “SuDS hierarchy” has been followed both in terms of:

- surface water disposal location, prioritised in the following order: disposal of water to shallow infiltration, to a watercourse, to a surface water sewer, combined sewer / deep infiltration (generally considered to be greater than 2m below ground level),

- the SuDS components used within the management train (source, site and regional control).

5.5. The LLFA would advise the applicant that the CIRA SuDS Manual C697 (2007) has recently been updated, report C753 (2015) is now available free on the CIRIA website. On the 19th February 2016, the Environment Agency updated the guidance on climate change allowances for peak river flow and rainfall intensity. The information for the Anglian Region and transitional arrangements for use within the planning process can be found at https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances. The LLFA highlight that peak river flow climate change allowances should be considered for ordinary watercourses as well as main rivers.

5.6. The LLFA note that an initial review of OS maps and Environment Agency data will be undertaken and include a review of the main rivers (as per section 10.2.6 of the Environmental Impact Assessment: Scoping Report published in October 2016). There are lengths of potentially affected Watercourses in the search area that are controlled by the Norfolk Rivers IDB for which they will need to be consulted on separately.

5.7. Please note, if there are any works proposed as part of this application that are likely to affect flows in an ordinary watercourse outside of the IDB areas, then the applicant is likely to need the approval of the County Council. The Council seeks to avoid culverting, and its consent for such works will not normally be granted except as a means of access. It should be noted that this approval is separate from planning. A link to the application forms can be found here https://www.norfolk.gov.uk/rubbish-recycling-and-planning/flood-and-water-management/information-for-homeowners/consent-for-work-on-ordinary-watercourses.

5.8. The LLFA would appreciate the applicant advising the Council's Water Management team, as soon as practicable, the approximate number of crossings of Ordinary Watercourses and the required timeframes for approval. This will enable the team to have adequate staffing resources in place to ensure approvals are not unduly delayed. A previous approval process for a similar project resulted in 90 separate consents which represents a significant draw on the teams' resources to process. The flood and Water management team are happy to engage in this process prior to application.

5.9. Once the potential sites for the Substations and preferred route for the cables has been finalised the LLFA would expect a drainage strategy to assess and justify compliance with the SuDS hierarchy for surface water disposal location. This would include:

(1) Demonstration of infiltration testing completed to BRE365 requirements or equivalent (including 3 infiltration tests in quick succession at each location tested, each location would be representative across the site and be at depths anticipated

to be used on site). A description of where any infiltration is anticipated to be used in full or partially drained SuDS components within a strategy.
(2) If site wide infiltration is not appropriate due to unfavourable rates, demonstration with evidence as to why there cannot be a connection made to the nearest watercourse.
(3) As a final option, demonstration with evidence that Anglian Water would accept a connection to a surface water sewer.

5.10. The drainage strategy should also contain a maintenance and management plan detailing the activities required and details of who will adopt and maintain the all the surface water drainage features for the lifetime of the development.

Further guidance for developers can be found on our website at https://www.norfolk.gov.uk/rubbish-recycling-and-planning/flood-and-water-management/information-for-developers

5.11. Should you have any queries with any of the above comments please contact Mark Henderson (Flood Risk Officer) on 01603 638006 or email llfa@norfolk.gov.uk

Appendix

Norfolk County Council

Standard Scoping Response to:

Wind Farm Proposals - Potential Information Requirements for inclusion in an / Environmental Impact Assessment / Preliminary Environmental Impact Report (EIA/PEIR)

(October 2016)

The following areas ought to be addressed/covered in the Environmental Impact Assessment (EIA) / Preliminary Environmental Impact Report:

(a) Landscape

1. Landscape and Visual Assessment Including Impact on Heritage Landscape

For both offshore and any associated onshore development / infrastructure (e.g. work compound, sub-station; relay stations etc) the EIA/PEIR will need to provide:

- An assessment of the impact of the development on the landscape and seascape character (where visible from onshore), including landscape in neighbouring counties where they fall within the zone of visual influence;
- An assessment of the visual intrusion caused by the development which should include the preparation of a Zone of Visual Intrusion plan/map;
- Photomontages illustrating the impact of the development (See also Grid Connection Issues below);
- An assessment of the cumulative impact of this development taken together with the other (a) operational wind farms, (b) permitted wind farms in the area and (c) development proposals likely to come forward; and
- An assessment of the impact of the development on the heritage landscape.

2. Transport and Landscape Issues

The EIA/PEIR will need to evaluate the impact on the landscape of upgrading existing roads and creating new access routes in the construction and operational phase of the project (including enhanced signage) as all of this can sub-urbanise a rural landscape. It will also need to consider how these should be mitigated, perhaps through removal and reinstatement at the end of the project. Please also refer to *Highway - Traffic and Access* section.

3. Tourism and Landscape Issues

The EIA/PEIR will need to address the impact of the wind farm on tourism, including tourism occurring in neighbouring counties, which may be affected if the natural landscape is altered sufficiently.

Grid Connection and Landscape Issues

The EIA/PEIR will need to address whether the existing overhead lines and substation are sufficient to be able to cope with the Wind Farm, or whether there will need to be any upgrading of any existing overhead power lines. The EIA/PEIR should also address the cumulative impact on the Grid Network arising from any existing or proposed Wind Farm in the area.

In the event that new power lines are needed (or existing power lines up-graded) or any other infrastructure needs up-grading (e.g. sub-station) there would need to be a description of the route(s) including plans at an appropriate scale incorporating, for example:

- an assessment of their impact (e.g. photomontages etc).
- details of temporary construction compounds
- identification of any sensitive features along route

The EIA/PEIR should consider the possibility of putting over-head power lines underground in order to minimise their impact.

For further information please contact Zoe Tebbutt (Green Infrastructure Officer) on 01603 222768.

(b) Ecology

The ES/EIA will need to address the potential impact on Ecology, including in particular, impact on the following interests:

- designated sites e.g. Sites of Special Scientific Interest (SSSI), National Nature Reserves, Special Protection Areas (SPA), Special Area for Conservation (SAC), County Wildlife Sites (CWS) etc;
- Coastal and sedimentary processes;
- Marine benthos (wildlife of the seabed);
- Fish resources;
- Marine mammals; and
- Birds.

The need to consider cumulative impact is a requirement of the EIA process. This is of particular importance when considering ecological impacts. Projects to be incorporated in such an assessment must include those in the past, present and foreseeable future. Projects to be incorporated in such an assessment must include not only other potential wind farms but also other types of project taking place in the marine environment or onshore so that all elements of the infrastructure are assessed.

For further information I would suggest you contact Dr David White (Green Infrastructure Officer) on 01603 222768.

(c) Cultural Heritage and Archaeology

These issues ought to be discussed with Norfolk Landscape Archaeology (Ken Hamilton) 01362 869275.

(d) Socio-Economic

Commercial Fishing – The EIA/PEIR should consider the potential impact of the offshore scheme, including any underwater cable routes and other ancillary development, on Norfolk's commercial fishing interests. The EIA will need to consider the wider cumulative impacts taking into account existing operational wind farm; those under constructions; those consented and those in planning. The EIA should set out appropriate mitigation, and where necessary indicate what compensation, will be given to those commercial fishing interests in Norfolk adversely impacted by the operation of the wind farm and/or ancillary development. In addition the EIA should provide an indication of the likely impact on the local fishing industry particularly when other proposals are taken into account;

Shipping/Navigation and Ports – The EIA should indicate that suitable navigation and shipping mitigation measures can be agreed with the appropriate regulatory bodies to ensure that Norfolk's Ports (King's Lynn and Wells) are not adversely affected by this proposal. The EIA will need to consider the wider cumulative impacts taking into account existing operational wind farm; those under constructions; those consented and those in planning

Tourism – The EIA should consider the likely impacts on Norfolk's tourism sector;

Economic development - It would be helpful if the EIA/PEIR could provide accurate figures of those likely to be employed both during construction and once the Wind Farm is fully operational. There should also be a statement as to whether the labour would be sourced from local firms or if expertise would need to be imported to the region.

(e) Highway – Traffic and Access

The comments below relate to the onshore works associated with any offshore schemes including: construction of ancillary facilities such as sub-stations; cabling routes; and transporting and servicing of equipment.

1. **Vehicles –** define the nature of the traffic likely to be generated. In addition for the largest vehicles proposed to use each access route(s) this must include: -

- minimum width (including unhindered horizontal space)
- vertical clearance
- axle weight restriction

2. **Access & Access Route –** description of the route (including plans at an appropriate scale incorporating swept-path surveys). Assessment to include site inspection and details of contact with the appropriate Highway Authority (including the Highways Agency for Trunk Roads where applicable). In addition: -

- details of any staff/traffic movements/access routes;
- detailed plans of site access/es incorporating sightline provision

- confirmation of any weight restrictions applicable on the route together with details of contact with the relevant Bridge Engineer
- overhead/ underground equipment – details of liaison with statutory undertakers - listing statutory undertakers consulted together with a copy of their responses
- details of any road signs or other street furniture along each route that may need to be temporarily removed/relocated

3. **Impacts during construction –** are any special requirements needed and if so provide details e.g.:-

- timing of construction works
- removal of parked vehicles along the route(s) – full details will need to be provided – including whether or not alternative parking arrangements are being offered or bus services provided in lieu of potential loss of ability to use private cars
- removal and reinstatement of hedgerows – since these are usually in private ownership has contact been made with the owners. Has formal legal agreement been reached or are negotiations pending/ in progress
- identification of the highway boundary along the construction traffic route together with verification from the Highway Authority
- confirmation of whether the identified route involves the acquisition of third party land and if so has consent been given, (verbal or has a formal legal agreement been entered into)
- confirmation of any required third party easements – e.g. will construction vehicles need to overhang ditches (these are usually in private ownership), private hedges or open land adjacent to the highway. If so, details of consent (verbal or a formal written agreement)
- any modifications required to the alignment of the carriageway or verges/over-runs
- identification of sensitive features along route
- trimming of overhead trees – has a survey been undertaken to identify trees that will need to be trimmed and if so what steps have been undertaken to identify the owners of those trees
- confirmation of whether any affected trees are covered by a tree preservation order
- confirmation of whether any of the verges along the route(s) are classified as SSSI or roadside Nature Reserve status. If so, detail any impact
- confirmation of any extraordinary maintenance agreement/s required by the Highway Authority

4. **Cabling route/grid connection –** description of the route/s including plans at an appropriate scale, incorporating, for example:

- assessment to include site inspection and details of contact with the appropriate Highway Authority (including the Highways Agency for Trunk Roads where applicable)
- traffic details of grid connection enabling works

5. **Impacts during operation**

- details of type and frequency of vehicle to be used to service the facility/structure(s) when in operation
- details of any long-term highway impact e.g. will trees and hedgerows need additional trimming to allow access for service vehicles
- position of structures relative to public highways and/or public rights of way – the minimum distance of which should be no less than 50m

- assessment of any impact on adjacent/affected public rights of way e.g. horses and pedestrians – e.g. with a wind farm are the blades positioned in close proximity to bridleways such that flicker may startle horses

6. **Impacts during decommissioning –** define the expected life span of the facility/structure(s).
- provide details of decommissioning works including an assessment of whether or not the structure is to be scrapped - i.e. can it be broken up on site and removed or will it require the same logistical process as initial construction.

For further Information on highway related matters I would suggest you contact John Shaw (Senior Engineer) on 01603 223231.

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Your Ref : 161026-ENO10080-000064
Our Ref : CIRIS 28329

FAO: Ms Helen Lancaster

25th November 2016

Dear Ms Lancaster,

Re: Application by DONG Energy Limited for an Order Granting Development Consent for the Hornsea Project Three Offshore Wind Farm: Scoping Consultation

Thank you for including Public Health England (PHE) in the scoping consultation phase of this application. Our response focuses on health protection issues relating to chemicals and radiation. Advice offered by PHE is impartial and independent.

PHE will comment further when the ES becomes available.

In order to assist the promoter in the production of the subsequent Environmental Impact Assessment Report (EIA) we have included an appendix which outlines the generic considerations that PHE advises should be addressed by all promoters when they are preparing ESs for NSIPs.

PHE has evaluated the submitted Environmental Impact Assessment Scoping Report (October 2016) alongside the request for a scoping opinion. We do not consider that sufficient information is included within the scoping report (p359) to exclude EMFs from further consideration within the Environmental Impact Assessment; the EIA should address EMF exposure with reference to the measures and standards detailed within the attached appendix.

Notwithstanding the previous point, in terms of the level of detail to be included in ESs, PHE recognises that the differing nature of projects is such that their impacts will vary. PHE's view is that the assessments undertaken to inform the ES should be proportionate to the potential impacts of the proposal. Where a promoter determines that it is not necessary to undertake detailed assessment(s) (e.g. undertakes

qualitative rather than quantitative assessments), if the rationale for this is fully explained and justified within the application documents, then PHE considers this to be an acceptable approach.

PHE will provide further comments when the Preliminary Environmental Information report (PIER) becomes available. Should the promoter or their agents wish to discuss our recommendations or to seek any specific advice prior to the submission of the PIER, PHE would of course be pleased to assist.

Yours sincerely,

NSIP Consultations
nsipconsultations@phe.gov.uk

Please mark any correspondence for the attention of National Infrastructure Planning Administration.

Appendix: PHE recommendations regarding the scoping document

General approach

The EIA should give consideration to best practice guidance such as the Government's Good Practice Guide for EIA[1]. It is important that the EIA identifies and assesses the potential public health impacts of the activities at, and emissions from, the installation. Assessment should consider the development, operational, and decommissioning phases.

It is not PHE's role to undertake these assessments on behalf of promoters as this would conflict with PHE's role as an impartial and independent body.

Consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice. Ideally, EIA should start at the stage of site and process selection, so that the environmental merits of practicable alternatives can be properly considered. Where this is undertaken, the main alternatives considered should be outlined in the ES[2].

The following text covers a range of issues that PHE would expect to be addressed by the promoter. However this list is not exhaustive and the onus is on the promoter to ensure that the relevant public health issues are identified and addressed. PHE's advice and recommendations carry no statutory weight and constitute non-binding guidance.

Receptors

The ES should clearly identify the development's location and the location and distance from the development of off-site human receptors that may be affected by emissions from, or activities at, the development. Off-site human receptors may include people living in residential premises; people working in commercial, and industrial premises and people using transport infrastructure (such as roads and railways), recreational areas, and publicly-accessible land. Consideration should also be given to environmental receptors such as the surrounding land, watercourses, surface and groundwater, and drinking water supplies such as wells, boreholes and water abstraction points.

Impacts arising from construction and decommissioning

Any assessment of impacts arising from emissions due to construction and decommissioning should consider potential impacts on all receptors and describe monitoring and mitigation during these phases. Construction and decommissioning will be associated with vehicle movements and cumulative impacts should be accounted for.

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[1] Environmental Impact Assessment: A guide to good practice and procedures - A consultation paper; 2006; Department for Communities and Local Government. Available from: http://webarchive.nationalarchives.gov.uk/20120919132719/www.communities.gov.uk/documents/planningandbuilding/pdf/151087

[2] DCLG guidance, 1999 http://www.communities.gov.uk/documents/planningandbuilding/pdf/155958.pdf

We would expect the promoter to follow best practice guidance during all phases from construction to decommissioning to ensure appropriate measures are in place to mitigate any potential impact on health from emissions (point source, fugitive and traffic-related). An effective Construction Environmental Management Plan (CEMP) (and Decommissioning Environmental Management Plan (DEMP)) will help provide reassurance that activities are well managed. The promoter should ensure that there are robust mechanisms in place to respond to any complaints of traffic-related pollution, during construction, operation, and decommissioning of the facility.

Emissions to air and water

Significant impacts are unlikely to arise from installations which employ Best Available Techniques (BAT) and which meet regulatory requirements concerning emission limits and design parameters. However, PHE has a number of comments regarding emissions in order that the EIA provides a comprehensive assessment of potential impacts.

When considering a baseline (of existing environmental quality) and in the assessment and future monitoring of impacts these:

- should include appropriate screening assessments and detailed dispersion modelling where this is screened as necessary

- should encompass all pollutants which may be emitted by the installation in combination with all pollutants arising from associated development and transport, ideally these should be considered in a single holistic assessment

- should consider the construction, operational, and decommissioning phases

- should consider the typical operational emissions and emissions from start-up, shut-down, abnormal operation and accidents when assessing potential impacts and include an assessment of worst-case impacts

- should fully account for fugitive emissions

- should include appropriate estimates of background levels

- should identify cumulative and incremental impacts (i.e. assess cumulative impacts from multiple sources), including those arising from associated development, other existing and proposed development in the local area, and new vehicle movements associated with the proposed development; associated transport emissions should include consideration of non-road impacts (i.e. rail, sea, and air)

- should include consideration of local authority, Environment Agency, Defra national network, and any other local site-specific sources of monitoring data

- should compare predicted environmental concentrations to the applicable standard or guideline value for the affected medium (such as UK Air Quality Standards and Objectives and Environmental Assessment Levels)

    - If no standard or guideline value exists, the predicted exposure to humans should be estimated and compared to an appropriate health-based value (a Tolerable Daily Intake or equivalent). Further guidance is provided in Annex 1

    - This should consider all applicable routes of exposure e.g. include consideration of aspects such as the deposition of chemicals emitted to air and their uptake via ingestion

- should identify and consider impacts on residential areas and sensitive receptors (such as schools, nursing homes and healthcare facilities) in the area(s) which may be affected by emissions, this should include consideration of any new receptors arising from future development

Whilst screening of impacts using qualitative methodologies is common practice (e.g. for impacts arising from fugitive emissions such as dust), where it is possible to undertake a quantitative assessment of impacts then this should be undertaken.

PHE's view is that the EIA should appraise and describe the measures that will be used to control both point source and fugitive emissions and demonstrate that standards, guideline values or health-based values will not be exceeded due to emissions from the installation, as described above. This should include consideration of any emitted pollutants for which there are no set emission limits. When assessing the potential impact of a proposed installation on environmental quality, predicted environmental concentrations should be compared to the permitted concentrations in the affected media; this should include both standards for short and long-term exposure.

Additional points specific to emissions to air

When considering a baseline (of existing air quality) and in the assessment and future monitoring of impacts these:

- should include consideration of impacts on existing areas of poor air quality e.g. existing or proposed local authority Air Quality Management Areas (AQMAs)

- should include modelling using appropriate meteorological data (i.e. come from the nearest suitable meteorological station and include a range of years and worst case conditions)

- should include modelling taking into account local topography

Additional points specific to emissions to water

When considering a baseline (of existing water quality) and in the assessment and future monitoring of impacts these:

- should include assessment of potential impacts on human health and not focus solely on ecological impacts

- should identify and consider all routes by which emissions may lead to population exposure (e.g. surface watercourses; recreational waters; sewers; geological routes etc.)

- should assess the potential off-site effects of emissions to groundwater (e.g. on aquifers used for drinking water) and surface water (used for drinking water abstraction) in terms of the potential for population exposure

- should include consideration of potential impacts on recreational users (e.g. from fishing, canoeing etc) alongside assessment of potential exposure via drinking water

Land quality

We would expect the promoter to provide details of any hazardous contamination present on site (including ground gas) as part of the site condition report.

Emissions to and from the ground should be considered in terms of the previous history of the site and the potential of the site, once operational, to give rise to issues. Public health impacts associated with ground contamination and/or the migration of material off-site should be assessed[3] and the potential impact on nearby receptors and control and mitigation measures should be outlined.

Relevant areas outlined in the Government's Good Practice Guide for EIA include:

- effects associated with ground contamination that may already exist

- effects associated with the potential for polluting substances that are used (during construction / operation) to cause new ground contamination issues on a site, for example introducing / changing the source of contamination

- impacts associated with re-use of soils and waste soils, for example, re-use of site-sourced materials on-site or offsite, disposal of site-sourced materials offsite, importation of materials to the site, etc.

Waste

The EIA should demonstrate compliance with the waste hierarchy (e.g. with respect to re-use, recycling or recovery and disposal).

[3] Following the approach outlined in the section above dealing with emissions to air and water i.e. comparing predicted environmental concentrations to the applicable standard or guideline value for the affected medium (such as Soil Guideline Values)

For wastes arising from the installation the EIA should consider:

- the implications and wider environmental and public health impacts of different waste disposal options

- disposal route(s) and transport method(s) and how potential impacts on public health will be mitigated

Other aspects

Within the EIA PHE would expect to see information about how the promoter would respond to accidents with potential off-site emissions e.g. flooding or fires, spills, leaks or releases off-site. Assessment of accidents should: identify all potential hazards in relation to construction, operation and decommissioning; include an assessment of the risks posed; and identify risk management measures and contingency actions that will be employed in the event of an accident in order to mitigate off-site effects.

The EIA should include consideration of the COMAH Regulations (Control of Major Accident Hazards) and the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009: both in terms of their applicability to the installation itself, and the installation's potential to impact on, or be impacted by, any nearby installations themselves subject to the these Regulations.

There is evidence that, in some cases, perception of risk may have a greater impact on health than the hazard itself. A 2009 report[4], jointly published by Liverpool John Moores University and the HPA, examined health risk perception and environmental problems using a number of case studies. As a point to consider, the report suggested: "Estimation of community anxiety and stress should be included as part of every risk or impact assessment of proposed plans that involve a potential environmental hazard. This is true even when the physical health risks may be negligible." PHE supports the inclusion of this information within EIAs as good practice.

Electromagnetic fields (EMF) [include for installations with associated substations and/or power lines]

This statement is intended to support planning proposals involving electrical installations such as substations and connecting underground cables or overhead lines. PHE advice on the health effects of power frequency electric and magnetic fields is available in the following link:

https://www.gov.uk/government/collections/electromagnetic-fields#low-frequency-electric-and-magnetic-fields

[4] Available from: http://www.cph.org.uk/wp-content/uploads/2012/08/health-risk-perception-and-environmental-problems--summary-report.pdf

There is a potential health impact associated with the electric and magnetic fields around substations, and power lines and cables. The field strength tends to reduce with distance from such equipment.

The following information provides a framework for considering the health impact associated with the electric and magnetic fields produced by the proposed development, including the direct and indirect effects of the electric and magnetic fields as indicated above.

Policy Measures for the Electricity Industry

The Department of Energy and Climate Change has published a voluntary code of practice which sets out key principles for complying with the ICNIRP guidelines:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/37447/1256-code-practice-emf-public-exp-guidelines.pdf

Companion codes of practice dealing with optimum phasing of high voltage power lines and aspects of the guidelines that relate to indirect effects are also available:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48309/1255-code-practice-optimum-phasing-power-lines.pdf

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224766/powerlines_vcop_microshocks.pdf

Exposure Guidelines

PHE recommends the adoption in the UK of the EMF exposure guidelines published by the International Commission on Non-ionizing Radiation Protection (ICNIRP). Formal advice to this effect was published by one of PHE's predecessor organisations (NRPB) in 2004 based on an accompanying comprehensive review of the scientific evidence:-

http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/Publications/Radiation/NPRBArchive/DocumentsOfTheNRPB/Absd1502/

Updates to the ICNIRP guidelines for static fields have been issued in 2009 and for low frequency fields in 2010. However, Government policy is that the ICNIRP guidelines are implemented in line with the terms of the 1999 EU Council Recommendation on limiting exposure of the general public (1999/519/EC):

http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publichealth/Healthprotection/DH_4089500

Static magnetic fields

For static magnetic fields, the ICNIRP guidelines published in 2009 recommend that acute exposure of the general public should not exceed 400 mT (millitesla), for any

part of the body, although the previously recommended value of 40 mT is the value used in the Council Recommendation. However, because of potential indirect adverse effects, ICNIRP recognises that practical policies need to be implemented to prevent inadvertent harmful exposure of people with implanted electronic medical devices and implants containing ferromagnetic materials, and injuries due to flying ferromagnetic objects, and these considerations can lead to much lower restrictions, such as 0.5 mT.

Power frequency electric and magnetic fields

At 50 Hz, the known direct effects include those of induced currents in the body on the central nervous system (CNS) and indirect effects include the risk of painful spark discharge on contact with metal objects exposed to the field. The ICNIRP guidelines published in 1998 give reference levels for public exposure to 50 Hz electric and magnetic fields, and these are respectively 5 kV m^{-1} (kilovolts per metre) and 100 μT (microtesla). The reference level for magnetic fields changes to 200 μT in the revised (ICNIRP 2010) guidelines because of new basic restrictions based on induced electric fields inside the body, rather than induced current density. If people are not exposed to field strengths above these levels, direct effects on the CNS should be avoided and indirect effects such as the risk of painful spark discharge will be small. The reference levels are not in themselves limits but provide guidance for assessing compliance with the basic restrictions and reducing the risk of indirect effects.

Long term effects

There is concern about the possible effects of long-term exposure to electromagnetic fields, including possible carcinogenic effects at levels much lower than those given in the ICNIRP guidelines. In the NRPB advice issued in 2004, it was concluded that the studies that suggest health effects, including those concerning childhood leukaemia, could not be used to derive quantitative guidance on restricting exposure. However, the results of these studies represented uncertainty in the underlying evidence base, and taken together with people's concerns, provided a basis for providing an additional recommendation for Government to consider the need for further precautionary measures, particularly with respect to the exposure of children to power frequency magnetic fields.

The Stakeholder Advisory Group on ELF EMFs (SAGE)

SAGE was set up to explore the implications for a precautionary approach to extremely low frequency electric and magnetic fields (ELF EMFs), and to make practical recommendations to Government:

http://www.emfs.info/policy/sage/

SAGE issued its First Interim Assessment in 2007, making several recommendations concerning high voltage power lines. Government supported the implantation of low cost options such as optimal phasing to reduce exposure; however it did not support not support the option of creating corridors around power lines on health grounds,

which was considered to be a disproportionate measure given the evidence base on the potential long term health risks arising from exposure. The Government response to SAGE's First Interim Assessment is available here:

http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_107124

The Government also supported calls for providing more information on power frequency electric and magnetic fields, which is available on the PHE web pages (see first link above).

Liaison with other stakeholders, comments should be sought from:

- the local authority for matters relating to noise, odour, vermin and dust nuisance
- the local authority regarding any site investigation and subsequent construction (and remediation) proposals to ensure that the site could not be determined as 'contaminated land' under Part 2A of the Environmental Protection Act
- the local authority regarding any impacts on existing or proposed Air Quality Management Areas
- the Food Standards Agency for matters relating to the impact on human health of pollutants deposited on land used for growing food/ crops
- the Environment Agency for matters relating to flood risk and releases with the potential to impact on surface and groundwaters
- the Environment Agency for matters relating to waste characterisation and acceptance
- the Clinical Commissioning Groups, NHS commissioning Boards and Local Planning Authority for matters relating to wider public health

Environmental Permitting

Amongst other permits and consents, the development will require an environmental permit from the Environment Agency to operate (under the Environmental Permitting (England and Wales) Regulations 2010). Therefore the installation will need to comply with the requirements of best available techniques (BAT). PHE is a consultee for bespoke environmental permit applications and will respond separately to any such consultation.

Annex 1

Human health risk assessment (chemical pollutants)

The points below are cross-cutting and should be considered when undertaking a human health risk assessment:

- The promoter should consider including Chemical Abstract Service (CAS) numbers alongside chemical names, where referenced in the ES

- Where available, the most recent United Kingdom standards for the appropriate media (e.g. air, water, and/or soil) and health-based guideline values should be used when quantifying the risk to human health from chemical pollutants. Where UK standards or guideline values are not available, those recommended by the European Union or World Health Organisation can be used

- When assessing the human health risk of a chemical emitted from a facility or operation, the background exposure to the chemical from other sources should be taken into account

- When quantitatively assessing the health risk of genotoxic and carcinogenic chemical pollutants PHE does not favour the use of mathematical models to extrapolate from high dose levels used in animal carcinogenicity studies to well below the observed region of a dose-response relationship. When only animal data are available, we recommend that the 'Margin of Exposure' (MOE) approach[5] is used

[5] Benford D et al. 2010. Application of the margin of exposure approach to substances in food that are genotoxic and carcinogenic. Food Chem Toxicol 48 Suppl 1: S2-24

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Your Ref.: 161026_EN010080-000064
Our Ref.:

22 November 2016

Dear Ms Lancaster

Hornsea Project Three Offshore Wind Farm

Planning Act 2008 and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) Regulations 8 and 9

I refer to your letter of 26 October 2016 highlighting that DONG Energy Limited has asked the Secretary of State for a scoping opinion as to the information to be provided in an environmental statement relating to the proposed Hornsea Project Three offshore wind farm.

The Crown Estate has considered the Environmental Impact Assessment Scoping Report dated October 2016 prepared by DONG Energy and finds this to be a very comprehensive document. The Crown Estate's interests relate to the offshore elements of the project and we do not have any comments.

Yours sincerely

[redacted]

D S Curry
Senior Development Manager Offshore Wind

From:	Navigation
To:	Environmental Services
Cc:	Nick Dodson
Subject:	RE: EN010080 - Hornsea Project Three Offshore Wind Farm Environmental Impact Scoping Notification and Consultation
Date:	21 November 2016 13:17:53

Good afternoon Helen,

Trinity House would expect the following to form part of the Environmental Statement:

Navigation Risk Assessment

- Comprehensive vessel traffic analysis in accordance with MGN 543.
- The possible cumulative and in-combination effects on shipping routes and patterns should be fully assessed.
- Any proposed layouts should conform with MGN 543, however, should any proposed locations of offshore structures lie outwith the actual wind farm turbine layout, then additional risk assessment should be undertaken.
- The separation between Hornsea Three OWF and Hornsea One & Two OWF's should be individually risk assessed and the final proposed separation should be submitted to both the MCA and Trinity House for review.

Risk Mitigation Measures

- We consider that the wind farm will need to be marked with marine aids to navigation by the developer/operator in accordance with the general principles outlined in IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) Recommendation O-139 on the Marking of Man-Made Offshore Structures as a risk mitigation measure. In addition to the marking of the structures themselves, it should be borne in mind that additional aids to navigation such as buoys may be necessary to mitigate the risk posed to the mariner, particularly during the construction phase. All marine navigational marking, which will be required to be provided and thereafter maintained by the developer, will need to be addressed and agreed with Trinity House. This will include the necessity for the aids to navigation to meet the internationally recognised standards of Availability.
- Any possible National trans-boundary issues should be assessed, through consultation with the Dutch authorities.
- A decommissioning plan, which includes a scenario where on decommissioning and on completion of removal operations an obstruction is left on site (attributable to the wind farm) which is considered to be a danger to navigation and which it has not proved possible to remove, should be considered. Such an obstruction may require to be marked until such time as it is either removed or no longer considered a danger to navigation, the continuing cost of which would need to be met by the developer/operator.
- The possible requirement for navigational marking of the export cables and the vessels laying them. If it is necessary for the cables to be protected by rock armour, concrete mattresses or similar protection which lies clear of the surrounding seabed, the impact on navigation and the requirement for appropriate risk mitigation measures needs to be assessed.

Kind regards,

Steve Vanstone
Navigation Services Officer
Trinity House

From:	Philip Perkin
To:	Environmental Services
Subject:	RE: 161026_EN010080-000064
Date:	22 November 2016 09:18:51

F.A.O. Helen Lancaster

Thank you for your letter dated 26 October 2016 regarding the applicants request for a scoping opinion.

I can confirm that Waveney District Council does not have any comments.

Regards,

Phil Perkin
Principal Planning Officer

Any requests made under the Freedom of Information Act or the Environmental Information Regulations should be redirected to foi@eastsuffolk.gov.uk clearly stating whether the request applies to Suffolk Coastal District Council, Waveney District Council or both authorities.