

# **SCOPING OPINION**

## **Proposed Norfolk Vanguard Offshore Wind Farm**

Planning Inspectorate Reference: EN010079

November 2016



# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY.....</b>	<b>3</b>
<b>1 INTRODUCTION.....</b>	<b>5</b>
BACKGROUND.....	5
THE SECRETARY OF STATE’S CONSULTATION .....	6
STRUCTURE OF THE DOCUMENT.....	7
<b>2 THE PROPOSED DEVELOPMENT .....</b>	<b>8</b>
INTRODUCTION.....	8
THE APPLICANT’S INFORMATION .....	8
THE SECRETARY OF STATE’S COMMENTS .....	14
<b>3 EIA APPROACH AND TOPIC AREAS .....</b>	<b>22</b>
INTRODUCTION.....	22
EU DIRECTIVE 2014/52/EU .....	22
NATIONAL POLICY STATEMENTS (NPS) .....	22
ENVIRONMENTAL STATEMENT APPROACH .....	23
MATTERS TO BE SCOPED OUT .....	26
ENVIRONMENTAL STATEMENT STRUCTURE.....	27
TOPIC AREAS –OFFSHORE ENVIRONMENT .....	29
TOPIC AREAS –ONSHORE ENVIRONMENT .....	39
TOPIC AREAS –WIDER SCHEME ASPECTS .....	47
<b>4 OTHER INFORMATION .....</b>	<b>50</b>
<b>APPENDIX 1 – PRESENTATION OF THE ENVIRONMENTAL STATEMENT</b>	
<b>APPENDIX 2 – LIST OF CONSULTATION BODIES FORMALLY CONSULTED</b>	
<b>APPENDIX 3 – RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES</b>	





## 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 Norfolk Vanguard Offshore Wind Farm.

This report sets out the Secretary of State's Opinion on the basis of the information provided in Vattenfall Wind Power Limited's ('the Applicant') report entitled 'Norfolk Vanguard Offshore Wind Farm Environmental Impact Assessment Scoping Report' (October 2016) ('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 issues identified are potential impacts upon:

### Offshore

- Benthic ecology, including Annex I habitats;
- Ornithology – displacement, indirect effects and collision risk;
- Marine mammals from construction noise;
- Commercial fisheries; and
- Archaeology and cultural heritage.

### Onshore

- Ecology;
- Land Use;
- Traffic and transport;
- Socio-economics; and
- Archaeology and cultural heritage.

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 3 October 2016, the Secretary of State received the Scoping Report submitted by Vattenfall Wind Power Limited ('the Applicant') 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 Norfolk Vanguard Wind Farm ('the proposed development'). This Scoping Opinion (the 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:
- (a) a plan sufficient to identify the land;*
  - (b) a brief description of the nature and purpose of the development and of its possible effects on the environment; and*
  - (c) 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

#### Description of the proposed development

##### *Offshore*

- 2.2 The key offshore components would be the following:
- Between 120-257 wind turbine generators (WTGs), each with a capacity of between 7-15MW, a maximum turbine hub height of 150m, a maximum rotor diameter of 250m and a maximum tip height of 275m (it is possible more than one turbine model would be used across the site);
  - Offshore Substation Platforms (OSPs) – up to three 600MW OSPs if high voltage alternating current (HVAC) is used, or two 900MW OSPs if high voltage direct current (HVDC) is used (see below);
  - Offshore Accommodation Platforms (OAPs) or Offshore Accommodation Vessels (OAV);
  - Foundations for the WTGs and OSPs – either, or a combination of, monopile, jackets on pin piles, jackets on suction caissons, or gravity base structure;
  - Up to 650km inter-array 66kV cables;
  - Up to six offshore export cables and up to six offshore fibre optic cables (from the OSPs to the shore); and
  - Scour protection, as required for foundations and cables.
- 2.3 Two different electrical connection options are proposed; HVAC or HVDC. The decision as to which option would be used for the project would be agreed post consent and would depend on availability, technical considerations and cost.
- 2.4 Section 1.4.2 of the Scoping Report describes the above offshore components of the proposed development in greater detail.

*Landfall and onshore*

2.5 The onshore grid connection would be from the point at which the offshore cables come ashore ('the landfall') around Bacton, Norfolk, to the existing Necton 400kV National Grid Substation, approximately 50km west-southwest. The key onshore components would be the following:

- Landfall site to bring ashore the offshore cables and connect to the onshore cables requiring up to six transition pits;
- If HVAC - Up to 18 no. onshore underground cables within separate ducts in six separate trenches (i.e. three cables per trench) and up to six fibre optic cables (i.e. 1 per trench)
- If HVDC - up to four onshore cables each in separate ducts in two trenches (i.e. two cables per trench) and up to two fibre optic cables (i.e. 1 per trench)
- Link boxes (if HVAC technology is chosen);
- Jointing pits at regular intervals along the cable route;
- Cable relay station (if HVAC technology is chosen);
- Onshore substation in proximity to the grid connection location at the existing Necton 400kV National Grid Substation;
- Up to 12 no. 400kV underground interface cables between the new onshore substation and the existing Necton 400kV National Grid Substation; and
- Temporary construction areas and access roads.

2.6 Section 1.4.4 of the Scoping Report describes the above onshore components of the proposed development in greater detail.

*Consequential development*

2.7 Potential works at the existing Necton 400kV National Grid Substation may be required and would likely include additional switchgear and electrical equipment. If required these would be consented and constructed by National Grid (i.e. would not form part of the application for Norfolk Vanguard (NV) Offshore Wind Farm (OWF)).

**Description of the application site and surrounding area**

*Offshore*

2.8 The proposed development comprises two distinct array areas: 'NV East' and 'NV West', located approximately 70km and 47km east from the Norfolk coast respectively. These areas and the offshore cable corridor are shown in Figure 1.1 of the Scoping Report. The offshore cable corridor will be refined using information gathered by offshore geophysical surveys.

- 2.9 The offshore site includes areas of sand ridges with associated peaks and troughs and has water depths from 25m-47m relative to Chart Datum (CD) in NV West and from 21m-24m (CD) in NV East. The bathymetry of the offshore areas and provisional cable corridors are presented on Figure 2.1 of the Scoping Report.
- 2.10 The offshore site is dominated by slightly gravelly sand, with areas of sand, slightly gravelly muddy sand and sandy gravel, as illustrated by Figures 2.2 and 2.3 of the Scoping Report.
- 2.11 The offshore cable corridor is crossed by two pipelines, the UK-Netherlands 14 telecommunications cable and one disused marine disposal site. Figures 2.29 and 2.30 of the Scoping Report depict offshore infrastructure and dredging / disposal areas located in and around the offshore area of the proposed development.
- 2.12 The proposed development lies within the Southern North Sea proposed Special Area of Conservation (pSAC). The offshore cable corridor passes through the Haisborough Hammond and Winterton Site of Community Importance (SCI); the Greater Wash Marine proposed Special Protection Area (pSPA); and the Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ). These designations are delineated on Figures 2.31 and 2.32 of the Scoping Report relative to the offshore proposed development site and are discussed further in section 3 of this Opinion.
- 2.13 There are numerous human activities and existing infrastructure in the vicinity of the proposed development, including shipping, in particular two Deep Water Routes (located on Figure 2.21 of the Scoping Report); offshore wind developments; oil and gas pipelines and platforms; oil and gas licensed blocks; aggregate dredging; and dumping and disposal. These are detailed in section 2.14 of the Scoping Report.

*Landfall and onshore*

- 2.14 The Scoping Report presents an 'onshore scoping area' which incorporates all potential land where onshore infrastructure would be located. The precise cable route and location of the substation and (potentially) cable relay station will be refined following receipt of this opinion and further consultation. The onshore scoping area corridor includes search areas for the landfall, new substation and cable relay station are located on Figures 1.3, 1.4 and 1.6, respectively.
- 2.15 The scoping corridor extends westward from the landfall search area within the county of Norfolk and is dominated by arable farming, tourism and the Bacton Gas Terminal in the north. There are several small villages including Happisburgh, Bacton and Walcott within the landfall search area; however, there are no large settlements. The scoping corridor includes a number of roads (notably the A140, the A1067 and the A4); numerous public rights of way (including the



Norfolk Coast Path and national cycle routes); and sections of railway.

- 2.16 There are a number of local, national and internationally designated statutory nature conservation sites within the scoping corridor, as shown on Figure 3.5 of the Scoping Report.
- 2.17 There are numerous heritage assets within the scoping corridor, including:
- 29 Scheduled Monuments;
  - 52 Grade I Listed Buildings;
  - 81 Grade II\* Listed Buildings;
  - 933 Grade II Listed Buildings;
  - five Conservation Areas (including Bacton, Happisburgh, Ingworth, Itteringham and North Walsham); and
  - five Grade II\* and four Grade II Registered Parks and Gardens.
- 2.18 In terms of Agricultural Land Classification (ALC), the scoping corridor is primarily Grade 2 and 3 agricultural land, interspersed with some areas of Grade 1 near the landfall and Grade 4 further west.
- 2.19 The scoping corridor encompasses river systems with associated canal networks and lakes, including the Rivers Bure and Wensum.
- 2.20 The majority of the scoping corridor is located within Flood Zone 1; however it does cross areas of Flood Zone 2 and 3, as shown on Figure 3.1 of the Scoping Report.
- 2.21 A number of existing underground cables and high pressure gas pipelines are located within the scoping corridor.
- 2.22 The Norfolk Coast Area of Outstanding Natural Beauty (AONB) and the Broads National Park are located outwith, but to the north and south of the scoping corridor, respectively.

### **Alternatives**

- 2.23 The Applicant discusses the site selection process at section 1.5 of the Scoping Report. This includes details relating to the offshore array, the landfall, the provisional offshore cable corridor, the grid connection, the onshore substation, the onshore cable route and the cable relay station.

## **Access**

### *Offshore*

- 2.24 A 'dockside marshalling facility' would be required to store offshore infrastructure prior to loading onto construction barges or vessels. The location of such a facility has not yet been identified.

### *Onshore*

- 2.25 The Scoping Report identifies the need for temporary haul roads for the onshore cables installations; however, at this stage their locations have not been identified.

## **Construction**

### *Offshore*

- 2.26 The proposed development would be built out in either two phases of 900MW (HVDC option) or three phases of 600MW (HVAC option). The precise location of each phase across NV East and NV West will be determined on the results of the EIA and post consent site investigations (and therefore will not be decided by the time of DCO application).
- 2.27 Based on a three phase (HVAC) development, offshore construction would start in 2023 and complete in 2027. The Scoping Report has not identified the construction period for a two phase (HVDC) development.
- 2.28 Construction methods are detailed in section 1.4.6 of the Scoping Report. The WTGs and substations would likely be installed using specialist installation vessels (e.g. jack-up or dynamic position technology). Depending on the type of foundations used, installation could require dredging, piling and the use of scour protection.
- 2.29 The offshore cables would be installed using either a water jetting or ploughing technique and would be buried between 1-3m below the seabed. Additional cable protection would be required in some locations.

### *Landfall and onshore*

- 2.30 The landfall ducts would be installed between 2022 and 2024. This would be achieved by Horizontal Directional Drilling (HDD) from the land above the seacliffs to the intertidal zone (short HDD) or into the subtidal zone (long HDD). A pit would be excavated at the exit point on the seabed.
- 2.31 Onshore substation infrastructure and ducting for the onshore cables would be established prior to commissioning the first phase of the

offshore works. For a three phase (HVAC) project, onshore construction would start in 2020 and continue until 2026.

- 2.32 For the onshore cables, temporary access roads and a running track along the cable corridor would be installed. Cable trenches would be excavated and material stored locally before installing the ducts, infilling the trench and reinstating the land. Cables would be pulled through the ducts at a later date.
- 2.33 HDD would be used at some crossing locations, although the locations have not been identified within the Scoping Report. Other methods (e.g. auger boring) will also be considered.
- 2.34 The transition and jointing pits would be mechanically excavated, constructed from concrete and then backfilled and reinstated.
- 2.35 The cable relay station and substation would require the construction of access roads, grading, earthworks, drainage and foundations prior to their installation.

### **Operation and maintenance**

#### *Offshore*

- 2.36 The operation and control of the wind farm would be managed by a System Control and Data Acquisition (SCADA) system connecting each turbine to one or more off-site control rooms.
- 2.37 The primary base for the operations and maintenance (O&M) facility for Norfolk Vanguard is likely to be at a suitable port facility on the Norfolk coast. Options currently include ports at Lowestoft, Great Yarmouth and Wells-next-the-Sea.
- 2.38 Maintenance of offshore infrastructure, including WTGs, foundations, cables and offshore substations would follow either:
  - An onshore strategy: O&M or supply vessels and/ or helicopters to transfer personnel and equipment direct to the wind farm;
  - An offshore strategy: maintenance activities primarily undertaken from an OAV or a fixed offshore platform (with transfer vessels / helicopters to and from the OAV or platform); or
  - A combination of the above onshore or offshore strategies.
- 2.39 There would be no planned maintenance or replacement of the subsea cables; however, repairs could be identified by periodic surveys.
- 2.40 The Scoping Report outlines that the lease for the OWF would be 50 years (Table 1.1) and that the agreement for lease was awarded to the Applicant in 2016 (paragraph 213).

*Landfall and onshore*

- 2.41 No routine maintenance is expected at the landfall.
- 2.42 The substation at Necton and cable relay station near the coast would not be permanently manned. However, routine checks and maintenance would likely be made on a monthly basis. Key maintenance would take place every summer and would require 24/7 working. Most maintenance would take approximately one week; however, some could take up to two months.

**Decommissioning**

- 2.43 It would be a statutory requirement for the proposed development to be decommissioned at the end of its operational life. The detail and scope of the decommissioning works would be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator.
- 2.44 The offshore decommissioning could include the removal of all of the turbine components, part of the foundations (those above seabed level), the inter-array cables, and the export cables.
- 2.45 The substation and cable relay station equipment would likely be removed and reused or recycled. The building may be reused for a future development or demolished. If removing the building, the foundations would be removed to below ground level and the ground covered in topsoil and re-vegetated to return the site to its initial state. The jointing pit and transition pits would also be reinstated to ground level. Any access tracks would be reinstated if required. It is expected that the onshore cables will be removed from ducts and recycled, with the transition pits and ducts left in situ.
- 2.46 As an alternative, the wind farm could be repowered; this would be subject to a new consent application.

**The Secretary of State's Comments**

**Description of the application site and surrounding area**

- 2.47 The Secretary of State expects that, following refinement of the cable route and the identification of the sites for the landfall, cable relay station (if required) and substation, further details on the existing (baseline) environment will be provided within the ES.
- 2.48 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 that are to be included as part of the proposed development.

### **Description of the proposed development**

- 2.49 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 EIA. It is understood that at this stage in the evolution of the scheme, the description of the proposals and even the location of the site may not be 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 there should therefore be more certainty by the time the ES is submitted with the DCO.
- 2.50 The Applicant should clearly define in its draft DCO 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 PA2008 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'.
- 2.51 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.
- 2.52 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, including the area of the offshore elements;
  - Site preparation;
  - Construction processes and methods;
  - Transport routes;
  - 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;
  - Maintenance activities including any potential environmental or navigation impacts; and
  - Emissions - water, air and soil pollution, noise, vibration, light, heat, radiation.

- 2.53 The environmental effects of all wastes to be processed and removed from the site should be addressed. 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.
- 2.54 The Scoping Report has identified the need for works to be undertaken by National Grid at the existing Necton substation. The ES should describe these works as far as possible with the information available at the time. The ES should also identify whether there is any other consequential development, for example any upgrading of overhead lines, and consider any such works within the cumulative assessment.
- 2.55 The Secretary of State notes paragraph 140 of the Scoping Report which explains that the Applicant is awaiting a grid connection offer from National Grid for Norfolk Boreas (a separate project) and that once received, consideration will be given as to whether a common cable corridor would be appropriate.
- 2.56 Should the proposals for Norfolk Vanguard OWF change significantly as a result of this or other substantive spatial or design changes, the Applicant may wish to seek another scoping opinion.
- 2.57 The Scoping Report provides a thorough description of the proposed development; however, the ES should include further clarification, as detailed below.

*Offshore*

- 2.58 In relation to 'Offshore substation platforms and accommodation platform', Table 1.1 of the Scoping Report identifies '2-6 platforms'. It is unclear how many of each type of platforms would be required. Whilst it is appreciated this detail may not be known at this stage, the number of offshore substation platforms and either shared or standalone accommodation platforms should be set out within the ES.
- 2.59 Paragraph 114 of the Scoping Report states that "*It is anticipated that the layout of WTGs will be regular in plan (i.e. turbines will be set out in rows)*". If this layout is relied upon as mitigation (for example in relation to navigation), the Applicant should ensure that this principle is secured.

*Landfall and onshore*

- 2.60 Paragraph 304 of the Scoping Report notes that there is rapid cliff erosion on the coast of north east Norfolk. The ES should explain how erosion rates have been taken into account in determining the depth of cable burial at the landfall, the depths of transition pits and the set-back distance of the cable relay station from the coastline.

- 2.61 The ES should detail the dimensions, number and location of link boxes. It is unclear from the Scoping Report whether access will need to be maintained to the link boxes; this should be clarified.
- 2.62 The Scoping Report identifies the need for jointing pits at regular intervals along the cable route (every 500-1000m) and that the precise location of the jointing pit would be determined during detailed design. It also notes the need for link boxes at 'a number of locations within the cable corridor'. The ES should identify a worst case scenario for the number of jointing pits and link boxes. The Secretary of State welcomes the proposal to locate jointing pits at the edge of field boundaries or roads wherever possible. Where any such commitments are made in specific locations, these should be secured for example through a construction method statement or Code of Construction Practice (CoCP)/Construction Environmental Management Plan (CEMP).
- 2.63 Given the length of the onshore cable, there is the potential for numerous points at which the cable will need to cross roads, railways, watercourses, gas, water and electrical infrastructure. The ES should identify the locations and type of all such crossings. Where commitments are made within the ES to use a specific method as mitigation (e.g. HDD below the coastal floodplain grazing marsh and the River Wensum and 'sensitive locations' as noted in paragraph 825 of the Scoping Report), the Applicant should ensure that such methodology is secured via the draft DCO. Similarly, the Scoping Report states that HDD would be used at the landfall (either by 'long' or 'short' HDD methods); therefore its use at this location should also be secured.

### **Grid connection**

- 2.64 The connection of a proposed OWF into the relevant electricity network is an important consideration. Therefore, the Secretary of State welcomes the intention to include within the proposed DCO application the export cable to shore, the onshore cabling, the cable relay station and substation as part of the overall project so that the potential effects can be assessed within the accompanying ES.
- 2.65 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.
- 2.66 The Secretary of State recommends that careful consideration should be given to how the Applicant meaningfully consults on, and properly assesses, the likely impacts arising from the proposed on-shore cable route. It is hoped that the adoption of an iterative approach will result in a more specific route corridor in order for a robust EIA to be carried out.

## **Flexibility**

- 2.67 The Secretary of State notes the Applicant's intention to apply a Rochdale Envelope approach to the assessment and that, where the details of the scheme cannot be defined precisely for the EIA, a likely worst case scenario will be assessed. The Secretary of State welcomes the reference to Planning Inspectorate Advice Note nine 'Using the 'Rochdale Envelope' in this regard but also directs attention to the 'Flexibility' section in Appendix 1 of this Opinion which provides additional details on the recommended approach.
- 2.68 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. The ES must be capable of demonstrating how any changes to the development within any proposed parameters have been assessed as part of the EIA and that the proposed development would not result in significant impacts not previously considered.
- 2.69 As the type of electrical connection (i.e. HVAC or HVDC) is to be determined post-consent of the DCO, the ES should clearly present a description of the necessary infrastructure, construction methodologies and phasing (i.e. timings) for each option. The ES should justify which option is to be considered for the assessments, noting that a defined "worst case" could vary for different technical disciplines. The Applicant should consider whether one option could result in a greater level of impact if a more intensive construction period, albeit for a shorter length of time, is adopted.
- 2.70 Similarly, the Scoping Report has identified the overall size of the substation compound and the maximum height of buildings and notes that the appearance of the substation will depend on whether HVAC or HVDC would be used. The ES should provide details of the number and dimensions of the buildings for each option along with site layouts. The Applicant should also carefully consider how this will be assessed, particularly in terms of the landscape and visual impact aspect.
- 2.71 The Secretary of State advises that it would be helpful to provide a table within the ES setting out the 'worst case' parameters that have been assessed for each topic area to ensure that a consistent approach has been adopted across all environmental topics in the ES. Care will be needed to ensure that by considering the environmental topics separately, this does not preclude consideration of a worst case arising from a combination of factors. The ES will need to be clear and to demonstrate how this has been assessed.
- 2.72 The Secretary of State does not consider it appropriate as part of this Opinion to address the content of a proposed draft DCO, since these are matters for applicants, but does draw the attention of the Applicant to the Planning Inspectorate's published guidance and



advice on preparing a draft DCO and accompanying application documents. The ES should support the application as described.

### **Access**

#### *Offshore*

- 2.73 The location of the dockside marshalling facility for the construction phase has not yet been chosen. The Secretary of State notes and welcomes paragraph 15 of the Scoping Report which states that "*Port facilities are outside the Order Limits for the DCO application but will be considered where appropriate, e.g. when assessing impacts on traffic and transport*".

#### *Onshore*

- 2.74 The Secretary of State acknowledges that at this stage of the design it is not possible to provide details of the access roads. However, it is expected that by the time the DCO application is made, these details should be known. Therefore, the ES should identify the locations, detail their construction methodology and identify those which would be temporary and those which would be permanent.

### **Alternatives**

- 2.75 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 for further details).
- 2.76 The Secretary of State welcomes the proposal to consider alternatives within Volume 2 of the ES. The Applicant should ensure that the environmental effects considered for different options are clearly identified alongside the main reasons for choosing the final design (taking into account environmental effects).

### **Construction**

- 2.77 The Secretary of State considers that information on the construction phase (covering onshore and offshore activities) should be clearly indicated in the ES, including:
- phasing of programme including anticipated start and end dates;
  - construction methods and activities associated with each phase;
  - size and siting of construction compounds (including on and off site);
  - types of machinery and construction methodology and their anticipated noise levels;
  - lighting equipment/requirements; and

- number, movements and parking of construction vehicles (both HGVs and staff).
- 2.78 The above information should be provided for both phasing options (i.e. HVAC and HVDC).
- 2.79 The Scoping Report identifies the working hours for the construction of the cable relay station and the substation as 07:00 to 19:00; however, has not provided working hours for other construction works. This information should be provided within the ES. Any need for unsocial hours of working should be detailed.
- 2.80 The Scoping Report states that a CoCP would be developed as part of the overall mitigation package. The Secretary of State welcomes that a draft CoCP will be appended to the ES and recommends that clear cross referencing is made between the two documents so it is clear how mitigation proposed in the ES is secured via.

*Offshore*

- 2.81 The ES should identify the location and quantity of any additional cable protection required and of cable/pipeline crossings.
- 2.82 The Scoping Report identifies a short and long option for HDD at the landfall. It is not clear whether the length of the HDD would be determined by the time of application. The Applicant should consider the worst case for assessment and clearly set out the parameters within the ES.
- 2.83 It is noted that piling would be required to construct the turbines. The piling method should be clearly described within the ES and the associated impacts assessed as part of the EIA.

*Onshore*

- 2.84 Paragraph 134 of the Scoping Report states that the maximum corridor width would be 50m, except for short sections at major crossings and engineering constraints where it may be wider. These locations should be identified within the ES.
- 2.85 The Secretary of State welcomes that the location and size of the onshore temporary mobilisations areas (construction compounds) will be defined in the EIA.

**Operation and maintenance**

- 2.86 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; and
  - the number and types of vehicle movements generated during the operational stage (including HGVs, LGVs and staff vehicles).
- 2.87 The likely maintenance requirements associated with all project cabling, including inter-array cabling, should be identified. This should be informed by the experiences at other constructed wind farm developments.
- 2.88 The Secretary of State notes that key maintenance activities associated with the onshore component would take place every summer (taking up to two months) and would potentially require 24/7 working during this period. The Secretary of State would expect to see specific consideration of any 24/7 maintenance working as part of the relevant topic chapters of the ES, and in particular potential impacts on nearby sensitive receptors (including tourism locations) and any mitigation measures proposed. This is discussed further in Section 3 of this Opinion.

### **Decommissioning**

- 2.89 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.
- 2.90 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, the Scoping Report confirms that a decommissioning plan will need to be prepared.

### **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 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. 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 directive by 16 May 2017.
- 3.3 The Secretary of State welcomes that Applicant's intention to align with the new regulations, where practical, however acknowledges that transitional provisions will apply to such new regulations.
- 3.4 On 23 June 2016, the UK held a referendum and voted to leave the European Union (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)**

- 3.5 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 Secretary of State and include the Government's objectives for the development of NSIPs.
- 3.6 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). These 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.
- 3.7 The 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.

## **Environmental Statement Approach**

- 3.8 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.
- 3.9 The Secretary of State notes and welcomes that an Evidence Plan Process will be undertaken to structure technical stakeholder consultation for both EIA and HRA matters. The Secretary of State suggests that this would be an appropriate mechanism through which to agree wherever possible the timing and relevance of survey work as well as the methodologies to be used. The outcomes of the Evidence Plan process relevant to EIA matters should be documented as part of the ES.
- 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 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

### **Overarching methodology**

- 3.12 The Scoping Report has not identified study areas for all of the technical topics. The extent of the study areas should be on the basis of recognised professional guidance, whenever such guidance is available. 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 scope should also cover the breadth of the topic area and the temporal scope, and these aspects should be described and justified. Study areas should 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.

- 3.13 The Scoping Report identifies the need for numerous further surveys to establish the baseline. The Secretary of State advises that the scope of surveys is agreed with relevant consultees.
- 3.14 Paragraph 259 of the Scoping Report states that a matrix approach will be used to frame and present the judgements made within the EIA. The Secretary of State advises that where matrices are used, they are consistent across the topics so that a given magnitude/sensitivity combination results in the same level of significance, irrespective of the topic. The ES should also define the level of significance which is to be considered 'significant in EIA terms'.
- 3.15 The Secretary of State welcomes that the level of confidence in the assessment will be made in the ES and also that if no mitigation is proposed, that the ES will explain why the impact cannot be reduced.
- 3.16 The ES should report on any data limitations encountered in establishing the baseline environment.
- 3.17 Where the Applicant is proposing mitigation by way of management plans or the like and reliance is placed on these in determining significance of residual effects, sufficient detail should be provided as part of the application so as to understand the extent to which they will be effective in mitigating the potential impacts identified, and the minimum measures required to achieve such mitigation. The Secretary of State would also recommend providing a visual organogram (or similar) of such plans so as to understand the nature of interrelationships across the various plans and topic areas (including reference to their security within the DCO).

### **Technical assessments**

- 3.18 The technical chapters of the Scoping Report provide a thorough overview of the existing baseline environment and there is a large amount of existing survey data to draw upon, a lot of which comes from East Anglia THREE and East Anglia FOUR surveys. Where existing survey data is relied upon, their suitability for Norfolk Vanguard OWF should be agreed with relevant consultees; in particular the spatial and temporal scope of the surveys should be considered. The Secretary of State expects and recognises that this is likely to be a key objective of the Evidence Plan Process.
- 3.19 Each technical section of the Scoping Report has provided detailed information on the potential impacts of the proposed development. In

a number of cases, the scoping text has stated that a certain impact is not expected to be significant; however has not scoped out of the EIA and a tick (✓) has been provided in the summary table (identifying a potential impact for that topic as being scoped in). For clarity, the Secretary of State has assumed that even when the Scoping Report text states an effect is not likely to be significant, those impacts to be assessed within the ES are those with a tick in the summary table of each technical chapter. Unless otherwise stated in this Opinion, the Secretary of State agrees with these summary tables.

- 3.20 For a number of technical topics there is little detail on the proposed assessment methodologies and therefore the scope for the Secretary of State to comment in this regard is limited. However, the Secretary of State notes and welcomes the intention to discuss and agree with the appropriate consultees the assessment methodologies (including as part of the Evidence Plan Process) and advises that these are clearly set out within the ES.

### **Cumulative impacts and inter-relationships**

- 3.21 The Secretary of State welcomes the proposal to consider inter-relationships, as discussed throughout the Scoping Report and summarised in Table 2.30 for offshore and Table 3.24 for onshore. The Secretary of State has noted some discrepancies in these tables. For example it is stated that some topics (e.g. Water Resources and Flood Risk) are affected by another topic (e.g. Ground conditions and Contamination); yet the latter is not stated to have effects on the former. The Applicant is encouraged to cross check any similar tables within the ES to ensure consistency.
- 3.22 With regards to Table 3.24, the Secretary of State considers that Water Resources and Flood Risk also has the potential to have effects on Land Use.
- 3.23 Section 2.17 of the Scoping Report identifies the OWFs to be considered as part of the cumulative impact assessment (CIA). The Applicant is advised to agree the projects to be included within the CIA with relevant consultees and in this regard the Secretary of State welcomes that the CIA will be discussed during the Evidence Plan Process. The Applicant should ensure that all projects that have the potential interact with the Norfolk Vanguard OWF are considered and should demonstrate that they have not focussed solely on OWFs, for example by determining whether there are any other developments in the marine area with potential for cumulative impacts. The Applicant's attention is drawn to the Planning Inspectorate's Advice Note seventeen on cumulative effects assessment for further guidance.

- 3.24 The Secretary of State welcomes that any works at the existing Necton 400kV National Grid substation would be considered within the CIA.

### **Matters to be Scoped Out**

- 3.25 Matters are not scoped out unless specifically addressed and justified by the Applicant, and confirmed as being scoped out by the Secretary of State.
- 3.26 The Scoping Report has proposed to scope out a number of topics as a whole, as detailed below. Where certain matters within a topic are proposed to be scoped out, these are addressed within the relevant topic sections of this Opinion.
- 3.27 Whilst the Secretary of State has not agreed to scope out certain topics within the Opinion, this on the basis of the information available at the time. The Applicant should note that this does not preclude the Applicant from reviewing the scope of the assessment at a later date should further information become available. Any subsequent decision to refine the scope of the EIA should be agreed with the relevant statutory consultees and documented in the ES.
- 3.28 In order to demonstrate that topics/matters have not simply been overlooked, where they are scoped out prior to submission of the DCO application, this should be identified and explained within the ES. The ES should explain the reasoning for scoping out topics/issues and justify the approach taken; it would be helpful if this information could be shown in a table format.

### **Offshore Air Quality**

- 3.29 The Scoping Report considers that the number of vessels (up to approximately 12 during construction) and the associated atmospheric emissions would be small in comparison to the total shipping activity in the southern North Sea. It also notes that, marine exhaust emissions are limited in line with the provisions of International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78. Section 2.4 of the Scoping Report therefore proposes to scope out impacts on offshore air quality due to the likely negligible increases of air pollutants on site and the distance from any shore-based receptors.
- 3.30 On this basis, the Secretary of State agrees that offshore air quality can be scoped out of the ES.

### **Offshore Airborne Noise**

- 3.31 The Scoping Report acknowledges the potential for increases in airborne noise levels during construction, operation and decommissioning. However, the Scoping Report considers that given



the distance of Norfolk Vanguard from shore, any offshore works would not result in significant airborne noise to onshore receptors. Any offshore receptors would likely be transitory and the noise impact of construction works will be temporary and intermittent nature.

- 3.32 The Scoping Report states that the main noise source during nearshore cable laying works will be the vessel noise which is unlikely to be distinguishable from the baseline conditions and that the works themselves would be short term.
- 3.33 The exact route of the offshore cable has not yet been determined and the Secretary of State notes there are a number of small settlements along the coast. The Secretary of State considers that insufficient evidence has been provided to demonstrate that construction noise (particularly that associated with cable laying/pulling activities close to the shoreline) would not be audible to residential receptors, and therefore does not agree this can be scoped out at this stage.
- 3.34 The Secretary of State welcomes that the Offshore Ornithology chapter will give consideration to potential noise impacts from cable laying operations to birds along the foreshore”
- 3.35 On this basis, the Secretary of State agrees that offshore airborne noise can be scoped out of the ES.

## **Environmental Statement Structure**

- 3.36 Section 1.6.5 of the Scoping Report proposes the following structure for the ES:
- Volume 1 Non-Technical Summary
  - Volume 2 Environmental Statement
    - Part 1: Introductory chapters
      - Introduction
      - Need for the Project
      - Policy and Legislative Context
      - Site Selection and Assessment of Alternatives
      - Project Description
      - EIA Methodology
    - Part 2: Offshore environment
      - Marine Geology, Oceanography and Physical Processes
      - Marine Water and Sediment Quality
      - Benthic and Intertidal Ecology
      - Fish and Shellfish Ecology

- Marine Mammal Ecology
- Offshore Ornithology
- Commercial Fisheries
- Shipping and Navigation
- Offshore Archaeology and Cultural Heritage
- Aviation and Radar
- Infrastructure and Other Users
- Part 3: Onshore environment
  - Ground Condition and Contamination
  - Air Quality
  - Water Resources and Flood Risk
  - Land Use
  - Onshore Ecology
  - Onshore Ornithology
  - Onshore Archaeology and Cultural Heritage
  - Noise and Vibration
  - Traffic and Transport
  - Health
- Part 4: Wider Scheme Aspects
  - Landscape and Visual
  - Socio-economics
  - Tourism and Recreation
- Part 5: Cumulative and Transboundary Impacts
  - CIA within the former East Anglia Zone
  - Wider Offshore CIA
  - Transboundary Impacts
  - Onshore CIA
  - Summary of Impacts
- Volume 3: Technical appendices

3.37 The Secretary of State considers the cumulative impact assessment and the transboundary impact assessment to be separate from one another and expects both separate aspects to be clearly and separately addressed as part of the ES (with appropriate cross referencing as necessary).

## Topic Areas – Offshore Environment

### **Marine Geology, Oceanography and Physical Processes (see Scoping Report Section 2.2)**

- 3.38 The Secretary of State welcomes the proposal for surveys to develop the understanding of the seabed conditions across the site. The Secretary of State recommends that the scope of these surveys are agreed with the relevant consultees, including the Environment Agency, the Marine Management Organisation (MMO) and Natural England (NE). The survey methodology should be set out within the ES.
- 3.39 The Scoping Report makes numerous references to the use of modelling (both conceptual and empirical) to undertake the assessments; however, has not provided details of these therefore, the Secretary of State cannot provide any meaningful comments at this time. The ES should provide details of all models used including any assumptions and limitations and how these have been factored in to the assessment.
- 3.40 Scour mitigation measures should be detailed within the ES; the EIA should outline a clear justification for the quantity and area to be covered, in addition to the total area of seabed likely to be covered by hard substrata.
- 3.41 The Secretary of State welcomes the consideration of the potential effects of sedimentary processes on Haisborough, Hammond and Winterton SCI.

### **Marine Water and Sediment Quality (see Scoping Report Section 2.3)**

- 3.42 Table 2.3 of the Scoping Report (Concentrations of dissolved trace metals in sub-surface seawater from offshore locations) contains data from 1991-1992. The Applicant should ensure they use the most up to date data available. If not available, this should be explained within the ES along with justification as to the validity of datasets used.
- 3.43 Table 2.5 of the Scoping Report refers to Canadian Sediment Quality Levels. If the applicant intends apply these levels within their assessment, the Secretary of State recommends their use is agreed with the relevant bodies.
- 3.44 Paragraph 335 of the Scoping Report states that “*Any sediment plumes are likely to settle out within a short distance of the activity and limit the overall footprint of the affected area.*” The Scoping Report does not provide any evidence to support this assertion, nor does it quantify what a ‘short distance’ would likely be. The Secretary of State also considers that the sediment plumes would be directly

related to the method and intensity of construction activity, which is yet to be determined. As such, the assertion that designated bathing waters (3.1km and 3.5km from the landfall search area) are unlikely to be affected has not been fully justified. Any such statements should be clarified within the ES, with reference to guidance or studies from which the conclusions have been drawn.

- 3.45 Paragraph 340 of the Scoping Report proposes to scope out accidental release of contaminants during construction, operation and decommissioning on the basis that good practise techniques and procedures would be employed and that all vessels would comply with the International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78. The Secretary of State agrees that with the implementation of such measures, any potential impacts on water and sediment quality are unlikely to be significant and therefore further assessment is not required. However, the Secretary of State seeks assurances that such measures would be employed and therefore considers the matter should still be covered within the ES, along with details of the measures to be employed and how they are secured by the DCO (through the marine license or otherwise). The Secretary of State would expect a draft version of any plans containing such measures to be provided with the DCO application.
- 3.46 The Scoping Report explains that a proportion of the benthic survey sub-samples will be analysed for contaminants and compared to Environmental Quality Standards. It further proposes that, given the likely level of impact as informed by evidence from the East Anglia ONE and East Anglia THREE ES', the assessment of potential impacts on marine water and sediment quality for the proposed development should take the form of a desk-based review. The Secretary of State considers this to be acceptable, however advises that sufficient information is provided within the ES and that conclusions drawn are clearly justified.
- 3.47 The Scoping Report proposes to scope out operational impacts on marine water and sediment quality (with the exception of cumulative impacts) on the basis that any scour effect at each turbine would be highly localised and not expected to result in significant change to water quality; as any re-suspension of contaminated sediments by scouring effects would be localised and as no significantly contaminated sediments are expected in the area that could be released. The Secretary of State considers that insufficient evidence has been provided to justify scoping out these topics at this stage; for example there is no definition of 'highly localised', nor what would constitute a 'significant change to water quality'. In addition, it has not yet been confirmed that there are no contaminated sediments within the offshore area; therefore the results of the survey work will need to be analysed to determine the significance of any proposed risk of the release of contaminated sediments.

**Benthic and Intertidal Ecology (see Scoping Report Section 2.6)**

- 3.48 Figures 2.5 and 2.6 of the Scoping Report show a lower coverage of survey effort within NV West compared to NV East, therefore the Secretary of State welcomes that further surveys were undertaken in summer 2016 and that the methodology was agreed with the MMO and Natural England. The methodology has not been provided within the Scoping Report for further comment; however, the Secretary of State expects this detail to be provided within the ES.
- 3.49 The Scoping Report notes there is no epibenthic trawl data available for the offshore cable corridor, although grab surveys indicate it is broadly comparable with the benthic ecology in NV West. The Applicant should agree with relevant consultees whether or not there is a need for epibenthic trawls within the cable corridor and document any agreement within the ES.
- 3.50 The Scoping Report has proposed to scope out impacts from the 'remobilisation of contaminated sediments' during operation on the basis that "*given the likely levels of sediment contamination no pathway exists for impacts from contaminants*". The Secretary of State agrees that impacts during operation can be scoped out as the potential to mobilise contaminants during operation is so small as to render significant effects unlikely.
- 3.51 An assessment of the potential impacts on Annex I sandbank habitat should be presented within the ES.
- 3.52 The Scoping Report identifies the presence of *Sabellaria spinulosa* reef within NV West and the offshore cable corridor. The ES should consider not only potential direct impacts from construction, but also the potential impacts from maintenance activities on reef that may colonise the cables during the operational phase.
- 3.53 When assessing the potential impacts from loss of habitat, the ES should give consideration not only to habitat loss resulting from scour that occurs around foundations, but also to habitat loss resulting from the introduction of required scour protection.
- 3.54 The Secretary of State welcomes the consideration of underwater noise and vibration during the construction phase in this chapter and the Fish Ecology and Marine Mammal Ecology chapter. The methodology should be agreed with the relevant statutory consultees where appropriate and clearly outlined within the ES. The Applicant's attention is drawn to the recently published guidelines by the National Oceanic and Atmospheric Administration (NOAA) cited in the scoping consultation response from the MMO (see appendix 3 of this Opinion). The baseline environment should be established and potential noise and vibration impacts should be assessed against the baseline. The

methods and modelling software should be detailed within the ES; along with the project specific detail that it utilises.

- 3.55 The Scoping Report has proposed to scope out underwater noise and vibration during the operational phase on the basis that monitoring studies of operational turbines (North Hoyle, Scroby Sands, Kentish Flats and Barrow wind farms) have shown noise levels from to be only marginally above ambient noise levels and as there is no evidence to suggest this low level of noise and vibration has a significant impact on benthic ecology. The Secretary of State agrees that this can be scoped out of the EIA.
- 3.56 Paragraph 411 of the Scoping Report proposes to scope out electromagnetic fields (EMF) on benthic species as effects are likely to be highly localised, and as EMFs are strongly attenuated and decrease as an inverse square of distance from the cable. The Scoping Report references studies which show EMFs do not impact benthic species and habitats. The Secretary of State accepts the evidence presented by the applicant and is content with the proposed approach. The Secretary of State notes that Table 1.1 of the Scoping Report suggests the cable would be buried between 1-3m deep. The applicant should be aware of the statements within NPS EN-3 that if it is proposed to install offshore cables to a depth of at least 1.5m below the sea bed, the applicant should not have to assess the effect of the cables on subtidal or intertidal habitat

### **Fish and Shellfish Ecology (see Scoping Report Section 2.7)**

- 3.57 Table 2.16 of the Scoping Report scopes out 'the re-suspension of contaminants' for all phases of the development; however, paragraph 442 states that in relation to the construction phase there will be further assessment within the EIA. Consistent with the Benthic and Intertidal Ecology chapter, the Secretary of States does not consider construction and decommissioning phase impacts should be scoped out; however, does agree it can be scoped out for operation.
- 3.58 The Secretary of State is broadly content with the proposed approach for Fish and Shellfish Ecology however has had regard to the comments of the MMO (see Appendix 3 of this Opinion) and considers that the EIA should assess the potential effects on sand eel and its habitats. Where sand eel is a prey species for birds, this should inform the ornithological assessment.

### **Marine Mammal Ecology (see Scoping Report Section 2.8)**

- 3.59 The Applicant's attention is drawn to paragraph 2.6.92 of NPS EN-3 and the need to provide details of likely feeding areas; known birthing areas/haul out sites; nursery grounds; and known migration or commuting routes.

- 3.60 Where modelling is undertaken to determine the abundance of cetaceans, the ES should explain the methodology used.
- 3.61 The Applicant's attention is drawn to the existence of the Defra Marine Noise Registry which could inform the baseline noise environment.
- 3.62 The Applicant's attention is drawn to the comments of Norfolk County Council (see Appendix 3 of this Opinion) for potential ornithology data sources.
- 3.63 Paragraph 499 of the Scoping Report proposes to scope out disturbance to seal haul out sites from increased activity at the landfall during all phases of the development. This is on the basis that the distance from the landfall search area to a significant haul out site is a minimum of 10km; therefore no discernible effect is expected. The Secretary of State has had to regard to Natural England's response (see Appendix 3 of this Opinion) which notes that disturbance at seal haul outs from vessel transit to and from operational ports has not been considered. The Secretary of State agrees with Natural England that this should be considered, and if necessary assessed, before disturbance at seal haul outs can be scoped out of the assessment.
- 3.64 The Applicant's attention is drawn to the comments of Norfolk County Council (see Appendix 3 of this Opinion) with regards to the presence of breeding grey seals on the Norfolk Coast; and the advice they refer to from Natural England that if the North Norfolk SAC or Horsey-Winterton SAC were designated today, the grey seal would be a qualifying feature. The Applicant is advised to discuss their approach to the assessment of impacts on seals with Natural England and Norfolk County Council.
- 3.65 Paragraphs 500 and 510 of the Scoping Report propose to scope out impacts to marine mammals from changes to water quality during all phases of the development, as accidental releases would be mitigated through contingency planning remediation measures. The Secretary of State agrees with Natural England that as the project parameters are yet to be defined, the volume of sediment that could be mobilised and the resultant sediment plumes and their broad chemical composition are unknown. The Secretary of State also notes that potential impacts from increased suspended sediments have not been scoped out of the Fish and Shellfish Ecology chapter. Therefore, the Secretary of State does not agree impacts to marine mammals for changes to water quality during construction and decommissioning can be scoped out of the EIA, however does agree it can be scoped out for the operational phase.
- 3.66 Table 2.17 of the Scoping Report proposes to scope out physical barrier effects during construction, although no justification is provided within the preceding text. The assessment should consider

the displacement and potential barrier effects as a result of noise emitted during the construction period and therefore expects this to be covered within the assessment of 'underwater noise' impacts.

- 3.67 Paragraph 508 of the Scoping Report proposes to scope out physical barrier effects during operation because "*Norfolk Vanguard is not located on any known migration routes for marine mammals; spacing between wind turbines is not expected to impinge animal movement, and both seals and porpoise have been shown to forage within operational wind farm sites*". The Secretary of State agrees this can be scoped out of the EIA.
- 3.68 Paragraph 508 of the Scoping Report proposes to scope out EMF impacts on marine mammals and provides references to literature demonstrating that there is no evidence to suggest that existing cables have influenced cetacean movements or that pinnipeds respond to electromagnetic fields. The Secretary of State agrees this can be scoped out of the EIA.
- 3.69 The Secretary of State welcomes the proposal for both soft-start piling and the preparation of a marine mammal mitigation plan (MMMP) in consultation with key stakeholders.
- 3.70 The ES should set out in full the potential risk to European Protected Species (EPS) and confirm if any EPS licences will be required for example, for harbour porpoises and grey seals.
- 3.71 The Applicant's attention is drawn to the comments of Natural England (see Appendix 3 of this Opinion).

**Offshore Ornithology (see Scoping Report Section 2.9)**

- 3.72 The Scoping Report provides data sources for the proposed ornithological assessment within the offshore area; however, it does not detail the data for the offshore cable corridor. This should be detailed within the ES.
- 3.73 The potential for disturbance from the cable laying vessels and associated activities should be considered.
- 3.74 The Scoping Report has referred to Furness (2015) in relation to identifying and defining the relevant biological seasons for each species. The ES should explain the relevance of this reference and whether its use has been agreed with the relevant consultees.
- 3.75 Paragraph 540 of the Scoping Report proposes to scope out indirect impacts on birds resulting from disturbance to prey species within the offshore cable corridor and their habitat on the basis it is likely to be indiscernible. However, Table 2.21 does not propose to scope it out. Without further justification, the Secretary of State does not consider this should be scoped out of the EIA.



- 3.76 The Secretary of State considers that, in accordance with paragraph 2.6.101 of NPS EN-3, consideration should be given to the potential effects on birds through direct habitat loss, for example from the WTGs and OSPs/OAPs both during construction and operation.
- 3.77 Paragraph 542 of the Scoping Report proposes to scope out disturbance and displacement impacts resulting from maintenance or repair activities along the cable route as any potential impacts would be highly localised and episodic. The Secretary of State agrees this can be scoped out of the EIA on the basis that the reference to the cable route refers to the offshore export cable and not the inter-array cables.
- 3.78 The methods of assessing impacts are not clearly stated within the Scoping Report and therefore it is difficult to understand how impacts would be assessed. The methodology should be comprehensively detailed within the ES and agreed with the relevant statutory consultees.
- 3.79 Paragraph 543 of the Scoping Report refers to matrices in order to assess the potential effects of displacement on sensitive species. The ES should clearly set out the methodology associated with, and justification for, their use.
- 3.80 In terms of collision risk modelling, the ES should set out which Band model, avoidance rates, flight height variations and any other relevant information has been used. The parameters used within the model should be detailed and justified (i.e. the Rochdale Envelope should be fully explained) alongside the methodology used for assessing population level impacts.
- 3.81 The Secretary of State notes that ornithological surveys are ongoing within NV West but have been completed for NV East. The Applicant is advised to agree the survey methodology with relevant consultees and to document such agreements within the ES.

**Commercial Fisheries (see Scoping Report Section 2.10)**

- 3.82 The Secretary of State welcomes the proposed consultation with local fisheries organisations and individual fishermen, as well as the appointment of a Fisheries Liaison Officer (FLO) as part of the pre-application process. The continuation of the FLO appointment into the construction and operational phase should be considered.
- 3.83 The loss or restricted access to traditional fishing grounds may have subsequent effects on alternative fishing grounds such as those which are fished by smaller vessels. Impacts on alternative fishing grounds should fully be assessed within the ES.
- 3.84 The ES should identify whether safety zones will be sought around the offshore infrastructure and, if so, the potential effects of these

should be considered within the assessment. If the precise extents are unknown, a realistic worst case scenario should be assessed and the Secretary of State would require the DCO to be limited as such.

- 3.85 Exclusion of certain types of fishing may make an area more productive for other types of fishing. The assessment should include detailed surveys of the effects on fish stocks of commercial interest and the potential reduction or increase in such stocks that will result from the presence of the wind farm development and of any safety or buffer zones.
- 3.86 The Secretary of State welcomes that the proposed cumulative assessment will take into account other wind farm developments within the former East Anglia Zone. Consideration should be given to the wider cumulative impacts arising from other wind farms off the Norfolk Coasts which lay outside this zone. This also applies to the shipping and navigation assessment.

**Shipping and Navigation (see Scoping Report Section 2.11)**

- 3.87 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.
- 3.88 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.
- 3.89 The Secretary of State welcomes the proposed Navigational Risk Assessment (NRA) and directs the Applicant's attention to the comments of the Maritime and Coastguard Agency (MCA) and Trinity House (see Appendix 3 of this Opinion) for their comments on the proposed assessment. The ES should provide details of the collision risk modelling used within the NRA.
- 3.90 Paragraph 614 of the Scoping Report states that the NRA modelling will assume a 10% increase in future traffic. The ES should justify the 10% future case increase.
- 3.91 The Secretary of State welcomes the proposed consultation with the stakeholders identified in paragraph 666 of the Scoping Report.
- 3.92 As with the Commercial Fisheries assessment, this chapter of the ES should identify and consider within the assessment any necessary safety or buffer zones.

**Offshore Archaeology and Cultural Heritage (see Scoping Report Section 2.12)**

- 3.93 The ES should set out the procedures that would be put in place for unknown assets discovered during pre-construction or construction activity. Such procedures should be agreed with Historic England and the MMO and secured, for example through a Written Scheme of Investigation (WSI). The Secretary of State recommends that a draft WSI is provided with the DCO application and draws the Applicant's attention to the comments from Historic England in this regard.
- 3.94 Paragraph 691 of the Scoping Report proposes to scope out impacts to the setting of onshore heritage assets from construction of the offshore works because of the existing context of a busy shipping channel and gas rigs and service vessels. However, the Secretary of State notes the comments of Historic England (See Appendix 3 of this Opinion) which explains that there is a connection between the seabed area and the site of Second World War shipping casualties and that from further surveys it will be possible to elucidate such special features within a wider battlefield context and setting. Historic England also notes that similar offshore wind farm projects have included an assessment on the setting included so that the lack of impact can be demonstrated and proven. Having had regard to the response received by Historic England the Secretary of State considers that this element of the assessment should not be scoped out at this stage.
- 3.95 Similarly operational impacts upon setting are proposed to be scoped out in paragraph 692 of the Scoping Report due to the distance of the array from the coast which is more than the 35km limit identified in DTI guidance. Historic England note that the DTI guidance should not be interpreted so rigidly particularly given that the details of the proposed development has not yet been finalised. The Secretary of State agrees with Historic England that this should not be scoped out at this stage and that the ES should consider changes to historic character within the Historic Seascape assessment.
- 3.96 The Applicant's attention is drawn to the comments of Historic England (see Appendix 3 of this Opinion).

**Aviation and Radar (see Scoping Report Section 2.13)**

- 3.97 The Secretary of State agrees that impacts on military training areas can be scoped out of the assessment on the basis that the RAF Lakenheath North Aerial Tactics Area has a base height above the turbine height and that any potential effects on radar will be assessed.
- 3.98 The Secretary of State notes that an unacceptable impact is predicted on the Cromer Preliminary Surveillance Radar and welcomes that the Applicant is working with NATS to develop mitigation measures. The

Applicant's attention is drawn to the comments made by NATS (see Appendix 3 of this Opinion) relating to safeguarding.

- 3.99 The Scoping Report identifies potential impacts relating to Helicopter Main Routes. The Applicant is advised to liaise closely with helicopter operators to assess the potential impacts and develop suitable mitigation to reduce any identified effects. This should be demonstrated in the ES.

**Infrastructure and Other Users (see Scoping Report Section 2.14)**

- 3.100 It would be useful for figures within the ES to identify the locations of international wind farm developments in addition to those located within UK waters.

- 3.101 The Scoping Report has proposed to scope out a number of matters within this topic which the Secretary of State agrees to, as below:

- Potential interference with other wind farms during all phases of the development - as there is no spatial overlap of wind farm infrastructure.
- Potential interference with oil and gas operations during all phases of the development - as the infrastructure immediately adjacent to Norfolk Vanguard is anticipated to be decommissioned by 2020, i.e. prior to construction of the wind farm (note that should the timescales for decommissioning change during pre-application, the Applicant is advised to reconsider this approach).
- Initiation of unexploded ordnance (UXO) during all phases of the development - as detailed geophysical survey and investigations would identify abandoned UXO and this is a health and safety risk which will be carefully mitigated rather than being an environmental issue. The Secretary of State advises that the mitigation proposed in the event that UXO is found should consider environmental impacts e.g. on species and habitats) and that the geophysical survey and mitigation is secured by a suitably drafted condition within the draft Deemed Marine Licence.
- Impacts on Ministry of Defence (MoD) activities during all phases of the development - due to the distance of the site from the nearest Military Practice and Exercise Area (PEXA) (49.3km at its closest point).
- Physical impacts on subsea cables and pipelines during operation - as standard industry techniques would be followed for maintenance and/or replacement to ensure that other operators' cables and pipelines are not impacted.

- 3.102 The Scoping Report states that there is no spatial overlap of aggregate areas with Norfolk Vanguard (east or west) and therefore

there are limited pathways for impacts upon aggregate dredging activities. The Secretary of State agrees potential impacts on aggregate dredging operations can therefore be scoped out, however welcomes that if the project programme for the proposed dredging by the Bacton Gas Terminal changes (currently proposed to be in 2017), so that it overlaps with the Norfolk Vanguard construction, impacts will be considered.

- 3.103 The Scoping Report proposes to scope out impacts on disposal sites during all phases of the development on the basis that there is no overlap between Norfolk Vanguard and disposal sites. The Scoping Report states that the Warren Springs disposal site (HU202), shown on Figure 2.30, is disused and therefore there is no pathway for impact upon it from export cable installation. No further information on this site has been provided (e.g. what was disposed there and when); therefore the Secretary of State does not have sufficient assurances that there are no pathways for impact. In addition, the assertion in paragraph 777 of the Scoping Report, that "*given the lack of contamination there is no likelihood of resuspension of contaminants*", has not been fully justified. As such the Secretary of State does not agree impacts on disposal sites can be scoped out based on the information presented within the Scoping Report.
- 3.104 The Secretary of State notes that the offshore cable corridor passes through the CON29M Coal and Brine Consultation Areas. The potential for impacts on this area should be considered within the ES and the Secretary of State recommends consultation with the Coal Authority in this regard.

## **Topic Areas – Onshore Environment**

### **Ground Conditions and Contamination (see Scoping Report Section 3.2)**

- 3.105 The ES should identify and assess potential impacts on the Mineral Safeguarding Areas underlying the onshore scoping area (see the comments of Norfolk County in Appendix 3 of this Opinion).
- 3.106 Paragraph 304 of the Scoping Report notes there is rapid cliff erosion on the coast of north east Norfolk. The potential impacts of landfall works on coastal processes, including erosion and deposition, should be addressed with appropriate cross reference to other technical reports including landscape and visual impacts. Reference should be made to the Kelling to Lowestoft Ness Shoreline Management Plan, where appropriate.
- 3.107 The Secretary of State welcomes the proposal to employ a CoCP during site works to ensure that all appropriate Pollution Prevention Guidelines and good practice guidelines are followed. The proposal to provide a draft CoCP with the DCO application is welcomed and the Secretary of State recommends that this document contains sufficient

information as to the minimum measures required to achieve the requisite level of mitigation.

- 3.108 The Scoping Report has scoped out all operational impacts on ground conditions and contamination, with the exception of cumulative impacts. The only justification for this is that operation and maintenance activities would follow standard procedures. Despite the limited justification provided, the Secretary of State does not consider there would be any significant effects from operation and therefore agrees this can be scoped out.
- 3.109 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 Water Resources and Flood Risk section of this Opinion below.
- 3.110 The ES should justify the extent of the study areas used in the assessment.

**Air Quality (see Scoping Report Section 3.3)**

- 3.111 The study areas chosen should be justified within the ES.
- 3.112 The Secretary of State recommends that the methodology and choice of air quality and noise and vibration receptors are agreed with the relevant Environmental Health Department of the local authorities and the Environment Agency.
- 3.113 As no site specific air quality monitoring surveys are proposed, the Applicant should ensure that the air quality data is up to date and its coverage is appropriate for the desk based review.
- 3.114 The Scoping Report proposes to scope out operational air quality impacts as O&M activities will not lead to a significant change in vehicle flows within the study area; however, no vehicle movement figures have been provided in either this chapter or the Traffic and Transport Chapter of the Scoping Report to support this assertion. Nevertheless, the Secretary of State considers that given the nature of the development, this conclusion is likely and therefore agrees that onshore operational air quality can be scoped out of the assessment.
- 3.115 The Secretary of State welcomes the provision of an Air Quality Management Plan to be developed as part of the CoCP and recommends that a draft version is provided with the DCO application.
- 3.116 The ES should clearly set out the methodology for assessing the potential impacts of dust and road traffic emissions.

**Water Resources and Flood Risk (see Scoping Report Section 3.4)**

- 3.117 The Secretary of State welcomes the proposal for a Flood Risk Assessment (FRA) and a WFD compliance assessment; these assessments should form an appendix to the ES. Section 4 of this Opinion provides further comments as to the need for WFD assessment. The scope of these assessments should be discussed and agreed with relevant consultees including the Environment Agency, the relevant internal drainage boards and local planning authorities. Norfolk County Council's response (see Appendix 3 of this Opinion) has provided comments in this regard.
- 3.118 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.
- 3.119 Consideration should be given to the potential impacts on the coastal defence works proposed around Bacton, as noted within Natural England's response (see Appendix 3 of this Opinion).
- 3.120 The Secretary of State recommends that a draft drainage strategy is provided with the ES. The location of any swales and/or attenuation basins used to mitigate flood risk should be identified. Advice from Norfolk County Council on a drainage strategy is provided in Appendix 3 of this Opinion.
- 3.121 The Secretary of State welcomes the proposal to develop a CoCP in line with the relevant CIRIA guidance and Pollution Prevention Guidelines. On-going monitoring should also be identified, agreed with the relevant authorities and secured as part of the DCO to ensure that any mitigation measures are effective.
- 3.122 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.
- 3.123 The Applicant is advised that Flood Defence Consents that may be required for working in/over/adjacent to watercourses have been replaced by Flood Risk Activity Permits under the Environmental Permitting (England and Wales) Amendment (no 2) Regulations 2016.

**Land Use (see Scoping Report Section 3.5)**

- 3.124 The Applicant's attention is drawn to the responses of Anglian Water, National Grid and the Health and Safety Executive (see Appendix 3 of this Opinion) which have provided comments relating to the water infrastructure, major hazard sites, electricity and gas infrastructure within the onshore scoping area.

- 3.125 Safeguarded operational, permitted and allocated sand and gravel extraction sites should within the onshore scoping area should be identified and considered within the ES.
- 3.126 Careful consideration should be given to the siting of the onshore infrastructure in relation to agricultural land; the potential temporary and permanent loss of ALC land should be assessed within the ES. The potential effects on soil quality should be considered and relevant mitigation measures proposed.
- 3.127 The potential for sterilisation of land along the cable route should be assessed within the ES, including interrelated socioeconomic effects.
- 3.128 The Scoping Report identifies the Norfolk Coast Path, Public Rights of Way and Cycle Trails. Norfolk County Council's response (see Appendix 3 of this Opinion) identifies a number of long distance trails which should be acknowledged e.g. Paston Way and the Weavers Way. Appropriate cross reference should be made to the tourism and recreation chapter of the ES.
- 3.129 The Secretary of State welcomes the proposal for a Soils Management Plan and recommends a draft is provided with the DCO application. The relationship of this plan to other relevant plans should also be specified (e.g. if it is to be appended to any CoCP, CEMP or similar).

**Onshore Ecology (see Scoping Report Section 3.6)**

- 3.130 The Secretary of State notes and welcomes the surveys proposed in Table 3.9 of the Scoping Report and advises that their scope and methodology be agreed with relevant stakeholders.
- 3.131 The Scoping Report has identified the need to consider indirect impacts on statutory and non-statutory designated sites for nature conservation through cable routing; however, direct impacts should also be considered if the cable route does not avoid such sites.
- 3.132 The Applicant's attention is drawn to the comments of Natural England (see Appendix 3 of this Opinion) in relation to the assessment of impacts on designated sites, including the need for specific surveys to be undertaken.
- 3.133 The ES should identify the locations where there would be loss of important habitats for example, hedgerow and/or ancient woodland. The Applicant's attention is drawn to the comments of the Forestry Commission (see Appendix 3 of this Opinion) in relation to their Standing Advice on ancient woodland.
- 3.134 The ES should set out the measures for reinstating habitats which are removed during construction.



- 3.135 In accordance with EN-1, the Applicant should demonstrate the efforts made to ensure that activities will be confined to the minimum areas required for the works.
- 3.136 The Applicant should ensure that all mitigation measures proposed within the ES are secured and with this in mind the Secretary of State welcomes the proposal for a project specific Ecological Management Plan. A draft of the plan should be provided with the DCO application. Consideration should also be made to any potential overlapping objectives of ecological and landscaping mitigation measures that may be proposed and secured through management plans.
- 3.137 In terms of potential disturbance to protected species, the assessment should take account of impacts on noise, vibration and air quality (including dust); cross reference should be made to these specialist reports.
- 3.138 The ES should include 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.
- 3.139 Although the potential for the spread of non-native invasive species has been identified at paragraph 967 of the Scoping Report, Table 3.8 does not identify this effect. The ES should include a detailed assessment of non-native invasive species present in water bodies and/or sensitive receptors along the cable route, together with a management plan to prevent the spread of these species (and any disease they carry) to uninfected receptors. The Applicant's attention is drawn to the comments of the Environment Agency and Natural England (see Appendix 3 of this Opinion) in this regard.
- 3.140 The ES should set out in full the potential risk to EPS and confirm if any EPS licences will be required.
- 3.141 The Secretary of State notes the possible need for an Appropriate Assessment in view of the development site's location in relation to European sites (see Section 4 of this Opinion).
- 3.142 The Applicant's attention is drawn to the comments of Natural England (see Appendix 3 of this Opinion).

**Onshore Ornithology (see Scoping Report Section 3.7)**

- 3.143 The Secretary of State notes that the need for further surveys will be determined based on the desk assessment data and the Phase 1 Habitat Survey. As with all other ecological surveys, the Secretary of State advises that the scope and methodology of all surveys are agreed with the relevant stakeholders and notes the intention to agree the recommendations of the 'Onshore Winter/Passage Bird Survey Scoping Report' with Norfolk County Council and Natural

England. The outcomes of this report should be summarised within the ES and included in full as an appendix.

- 3.144 The Applicant's attention is drawn to the comments of Natural England (see Appendix 3 of this Opinion).

**Onshore Archaeology and Cultural Heritage (see Scoping Report Section 3.8)**

- 3.145 The Secretary of State welcomes the proposal to discuss the archaeological evaluation approach with the Norfolk County Council Historic Environment Service and Historic England and to develop a mitigation strategy outlining a programme of further archaeological investigations.

- 3.146 The Applicant should ensure that the study area around the final route corridor is sufficiently broad to give consideration to heritage assets that could be indirectly impacted.

- 3.147 The Scoping Report proposes to scope out the impact upon below ground and above ground archaeology during the decommissioning phase'. However, Historic England note that the demolition of buildings and infrastructure can have an impact greater than that of constructions e.g. if grubbing out of foundations or remediation of contaminants is required. The Secretary of State therefore does not agree this can be scoped out of the EIA.

- 3.148 Appropriate cross reference should be made to the Landscape and Visual Impact Assessment section of the ES. The selection of the viewpoints within the LVIA should incorporate views from cultural heritage locations and should be agreed with the relevant authorities.

- 3.149 The Applicant's attention is drawn to the comments of Historic England (see Appendix 3 of this Opinion).

**Onshore Noise and Vibration (see Scoping Report Section 3.9)**

- 3.150 The Secretary of State recommends that the baseline survey and assessment methodology and choice of noise receptors should be agreed with the relevant Environmental Health Department of the Council and with the Environment Agency.

- 3.151 The ES should provide a description of the noise generation aspects of the proposed development for both the construction and operation stage. Any distinctive tonal, impulsive or low frequency characteristics of the noise should be identified.

- 3.152 Information should be provided on the types of vehicles and plant to be used during the construction phase. The assessment should consider a 'worst case' for receptors, i.e. that within the application site the vehicles and plant are located at the closest possible point to a receptor.

- 3.153 Information should be provided on the layout of onshore infrastructure (e.g. the cable relay station and the substation) and the main sources of noise from these elements should be identified.
- 3.154 Noise impacts on people should be specifically addressed and particularly any potential noise disturbance at night and other unsocial hours such as weekends and public holidays.
- 3.155 Paragraph 1079 of the Scoping Report states that "*vibration will only be considered as an issue where significant piling works are required*"; however no explanation has been given as to what 'significant piling works' are and the Scoping Report has not justified why vibration will not be considered for other construction and related activities e.g. HGV movements. The Secretary of State is of the view that the ES should consider all potential sources of vibration, particularly those in proximity to residential and other sensitive receptors.
- 3.156 Paragraph 1082 of the Scoping Report states that "*there are considered to be no significant sources of vibration associated with the operational scheme*", however this statement has not been justified. For example, no details on potential operational vibration from the cable relay station and the substation have been provided and at this stage their location and proximity to receptors has not yet been determined; therefore the Secretary of State does not agree this can be scoped out at this stage.
- 3.157 Consideration should be given to the potential noise impacts resulting from the maintenance campaigns referred to in paragraph 192 of the Scoping Report, which are started to take place every summer and would require 24/7 working.
- 3.158 The Secretary of State welcomes that the Best Practice Measures will be set out in the CoCP.
- 3.159 The Scoping Report identifies potential operational mitigation measures, including the installation of acoustic enclosures and barriers and the construction of a landform/embankment around the substation. These measures should be taken into account in other technical assessments, for example the landscape and visual assessment and the ecological assessment.
- 3.160 Paragraph 1096 of the Scoping Report states that the spatial coverage of the construction noise assessment would be "*400m from the cable corridor routes where significant activities could affect noise sensitive receptors*". The ES should clearly set out what 'significant activities' would comprise, and should include for potential recreational users of Public Rights of Way (PRoW).
- 3.161 Similarly, paragraph 1096 states that traffic routes subject to "*significant changes in traffic flows*" would be included in the

assessment. The ES should explain how a 'significant change' has been determined in accordance with relevant guidance, with cross reference to the traffic and transport chapter where appropriate.

- 3.162 The Secretary of State welcomes consideration of noise impacts on nature conservation areas. Consideration should also be given to ecological receptors (e.g. protected species) and appropriate cross reference made to the Onshore Ecology chapter.
- 3.163 Consideration should be given to monitoring noise complaints during construction and when the development is operational.

**Traffic and Transport (see Scoping Report Section 3.10)**

- 3.164 The Secretary of State welcomes the proposal to confirm the scope of the assessment with Norfolk County Council and Highways England and recommends that this includes agreement over the sensitive receptors to be considered. Advice from Norfolk County Council on the assessment of traffic is provided in Appendix 3 of this Opinion.
- 3.165 Sensitive receptors are referred to within the Scoping Report; these should be specifically identified and their levels of sensitivity defined within the ES.
- 3.166 The Secretary of State welcomes that potential impacts associated with employee and HGV movements for the offshore construction and operation will be considered; however, does note that this is dependent upon a port being chosen before the application is made.
- 3.167 The ES should set out the traffic demand that has been assumed for the assessment. The assumptions made in deriving the traffic demand should be clearly explained within the ES.
- 3.168 The cumulative assessment should consider the Highways England schemes along the A47 which are noted in paragraph 1102 of the Scoping Report.
- 3.169 The Secretary of State considers that a Construction Traffic Management Plan (CTMP) would be appropriate for the proposed development and recommends that a draft is provided with the DCO application. Necton Parish Council has provided comments on the contents of a CTMP (see Appendix 3 of this Opinion).

**Health (see Scoping Report Section 3.11)**

- 3.170 The Secretary of State notes the proposed provision of a health impact assessment. The Applicant's attention is drawn to the responses from Public Health England and the Health and Safety Executive (see Appendix 3 of this Opinion) for their comments in relation to assessing impacts on public health. See also section 4 of this Opinion for further information.

## **Topic Areas – Wider Scheme Aspects**

### **Landscape and Visual (see Scoping Report Section 4.2)**

- 3.171 Paragraph 1212 of the Scoping Report explains that Zone of Theoretical Visibility (ZTV) mapping will be prepared to indicate where theoretical visibility would occur for the substation and cable relay station. The Secretary of State welcomes this proposal; however, considers it is therefore premature to set the study areas as stated in paragraph 1163. The Applicant should use the ZTV to help define the study area and the ES should describe the model used, provide information on the area covered and the timing of any survey work and the methodology used.
- 3.172 The justification within the Scoping Report that study areas differ for the cable route, the landfall, the cable relay station and the substation because of professional judgement and an understanding of the local landscape and scale of construction has not been elaborated upon. A clear justification for the definition of each of the study areas should be provided within the ES.
- 3.173 The Secretary of State considers the study area for the onshore cable route should extend from the outer edges of the cable corridor and not from the centre line.
- 3.174 The assessment should consider the Honing Hall Registered Park and Garden which is identified on Figure 4.4 of the Scoping Report but is not mentioned within the text.
- 3.175 Section 4.2.1.4 of the Scoping Report has identified a number of potential visual receptors and states that the LVIA would include a baseline assessment of the relevant principal visual receptors. The Applicant's attention is drawn to the comments of Norfolk County Council (see Appendix 3 of this Opinion) regarding the categories of principal visual receptors. The Secretary of State advises that principal visual receptors are agreed with relevant consultees.
- 3.176 The Secretary of State welcomes that viewpoints would be selected in liaison with Norfolk County Council, the Broads Authority and Natural England.
- 3.177 The Secretary of State welcomes the consideration of the Norfolk Coast AONB and The Broads National Park, even though they are not located within the scoping corridor.
- 3.178 The Scoping Report proposes to scope out landscape, visual and cumulative impacts of offshore components for all phases of the development given the distance from onshore landscape and visual receptors (47km); the relative sensitivity of the offshore receptors; and the existing influence of other offshore development and shipping vessels. The Secretary of State agrees a significant effect is unlikely

and that this can be scoped out of the EIA, but welcomes that the potential temporary impacts from the presence of construction vessels close to the coast will be assessed in respect of onshore receptors. The spatial extent of effects close to the coast should be defined i.e. at what distance from the coast they become indiscernible.

- 3.179 Potential landscape and visual impacts of the landfall and onshore cable route during operation are proposed to be scoped out by the Applicant as these elements would be located under ground level. Whilst installation of the cable is a temporary activity, there is the potential for significant longer term landscape and visual impacts caused by the loss of vegetation and the time taken for restoration measures to establish. The Secretary of State agrees that operational impacts from the landfall and onshore cable route can be scoped out; however, visual impacts that may still occur during the operational phase as a result of the loss of hedgerows and trees required for the cable corridor should be assessed and appropriate mitigation should be identified within the ES. Appropriate cross-reference should also be made to the onshore ecology assessment within the ES.
- 3.180 The SoS advises that the ES should make use of photomontages to illustrate the cable relay station and the substation. In producing visualisations, including photomontages and wireframes, views should be verified and visualisations should accord with industry standards.
- 3.181 The LVIA should also include an assessment of any permanent access roads and other infrastructure required at the cable relay station and the substation.
- 3.182 The Scoping Report proposes to scope out cumulative landscape and visual impacts of the landfall and onshore cable route for all phases of the proposed development. The Secretary of State agrees with this approach for operation and decommissioning; however, as the projects to be considered in the CIA have not yet been determined, the Secretary of State does not agree that construction phase cumulative impacts can be scoped out at this stage as it cannot be certain that other large developments may not be constructed concurrently in proximity to these elements (including the Norfolk Boreas project as discussed at paragraph 140 of the Scoping Report).
- 3.183 The assessment should include the consideration of any temporary lighting required for construction, and any permanent lighting for the cable relay station, substation and access roads (if required).
- 3.184 The Scoping Report states that mitigation planting would moderate potential impacts during operation; the Applicant should consider whether planting could be implemented at an early stage during construction to give the maximum amount of time for it to mature. Any proposed mitigation by way of vegetation and planting should be

considered within the ecological assessment. The Applicant is advised to submit a draft landscaping plan with their application.

- 3.185 The Applicant's attention is drawn to the comments of Natural England (see Appendix 3 of this Opinion).

**Socio-economics (see Scoping Report Section 4.3)**

- 3.186 The Secretary of State welcomes the proposed socio-economics assessment. The types of jobs generated should be considered in the context of the available workforce in the area; this applies equally to the construction and operational stages.

**Tourism and Recreation (see Scoping Report Section 4.4)**

- 3.187 The Secretary of State welcomes the proposed tourism and recreation assessment and notes the North Norfolk WFD bathing waters and blue flag beaches in the vicinity of the proposed development. Potential impacts on water quality at these locations and the resultant impacts on tourism and recreation should be considered. Appropriate cross reference should be made to the Marine Water and Sediment Quality chapter.
- 3.188 Consideration should be given as to what impact the use of accommodation for the mobile workforce would have in the short, medium and long term situation for the local tourist industry.

## 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'<sup>1</sup>. 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 a number of European sites<sup>2</sup> could be potentially affected by the proposed development. The Habitats

---

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

<sup>2</sup> 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,



Regulations 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<sup>3</sup>, 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

---

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

<sup>3</sup> 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. It will be particularly relevant to NSIPs where impacts may be complex, large amounts of evidence may be needed or there are a number of uncertainties. It will also help applicants meet the requirement to provide sufficient information (as explained in Advice Note ten) in their application, so the Examining Authority can recommend to the Secretary of State whether or not to accept the application for examination and whether an appropriate assessment is required.
- 4.12 The Secretary of State welcomes that the Applicant has already commenced an Evidence Plan Process that will encompass not only HRA matters, but also EIA matters.

### **Sites of Special Scientific Interest (SSSIs)**

- 4.13 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.
- 4.14 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'.
- 4.15 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.
- 4.16 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)(I) 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)**

- 4.17 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.
- 4.18 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.
- 4.19 Applicants are encouraged to consult with NE 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 whether any issues have been identified which would prevent the EPS licence being granted.
- 4.20 Generally, NE 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.
- 4.21 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.

- 4.22 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<sup>4</sup>.

## **Other Regulatory Regimes**

- 4.23 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.
- 4.24 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**

- 4.25 EU Directive 2000/60/EC (the Water Framework Directive) establishes a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater. Under the terms of the Directive, Member States are required to establish river basin districts and corresponding river basin management plans outlining how the environmental objectives outlined in Article 4 of the Directive are to be met.
- 4.26 In determining an application for a DCO, the Secretary of State must be satisfied that the applicant has had regard to relevant river basin management plans (RBMP) and that the proposed development is

---

<sup>4</sup> 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](http://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/10/PINS-Advice-Note-11_AnnexC_20150928.pdf)

compliant with the terms of the Water Framework Directive and its daughter directives.

- 4.27 The Scoping Report has identified WFD water bodies however has not identified the relevant RBMP for the proposed development; however the Secretary of State notes that it is located within the Anglian River Basin District.
- 4.28 The Scoping Report should explain whether temporary river crossings or bridges would be required; if so, these should be considered within the EIA.
- 4.29 In this respect, the Applicant's attention is drawn to Regulation 5(2)(l) of the APFP Regulations which requires an application for an NSIP to be accompanied by, *'where applicable, a plan with accompanying information identifying-... ..(iii) water bodies in a river basin management plan, together with an assessment of any effects on such sites, features, habitats or bodies likely to be caused by the proposed development'*.
- 4.30 In particular, the WFD assessment should, as a minimum, include:
- The risk of deterioration of any water body quality element to a lower status class;
  - Support for measures to achieve 'good' status (or potential) for water bodies;
  - How the application does not hinder or preclude implementation of measures in the RBMP to improve a surface water body or groundwater (or propose acceptable alternatives to meet RBMP requirements); and
  - The risk of harming any protected area.

## **The Environmental Permitting Regulations and the Water Resources Act**

### **Environmental Permitting Regulations 2010**

- 4.31 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<sup>5</sup>.

---

<sup>5</sup> Available from: <https://www.gov.uk/environmental-permit-check-if-you-need-one>

- 4.32 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.
- 4.33 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**

- 4.34 Under the Water Resources Act 1991 (as amended), anyone who wishes to abstract more than 20m<sup>3</sup>/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 as in the creation of a reservoir or dam, or construction of a fish pass.
- 4.35 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 Agency's WR176 guidance form on applying for a full, transfer or impounding licence<sup>6</sup>:
- 4.36 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.

---

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

### **Role of the Applicant**

- 4.37 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.
- 4.38 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.
- 4.39 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)<sup>7</sup>
- 4.40 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.
- 4.41 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 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**

- 4.42 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,

---

<sup>7</sup> Available from: <http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>



and in particular to the comments from Public Health England and the Health and Safety Executive (see Appendix 3 of this Opinion).

- 4.43 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**

- 4.44 The Scoping Report has acknowledged the potential for transboundary impacts on another European Economic Area (EEA) State.
- 4.45 Regulation 24 of the EIA Regulations, inter alia, requires the Secretary of State to publicise a DCO application if the Secretary of State is of the view that the proposal is likely to have significant effects on the environment of another EEA state and where relevant to consult with the EEA state affected.
- 4.46 The Secretary of State considers that where Regulation 24 applies, this is likely to have implications for the examination of a DCO application. 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.
- 4.47 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 studied 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 OWFs 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<sup>8</sup>.

## 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.

---

<sup>8</sup> 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)<sup>9</sup>.

<b>SCHEDULE 1 DESCRIPTION<sup>10</sup></b>	<b>ORGANISATION</b>
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
	West Norfolk Clinical Commissioning Group
	South Norfolk Clinical Commissioning Group
Natural England	Natural England
The Historic Buildings and Monuments Commission for England	Historic England
The relevant fire and rescue authority	Norfolk Fire and Rescue Service
The relevant police and crime commissioner	Office of the Police and Crime Commissioner for Norfolk
The relevant parish council(s) or, where the application relates to land [in] Wales or	Ryburgh Parish Council
	Stibbard Parish Council
	Fulmodeston Parish Council

<sup>9</sup> Available from: <http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

<sup>10</sup> Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) (the ‘APFP Regulations’)

<b>SCHEDULE 1 DESCRIPTION<sup>10</sup></b>	<b>ORGANISATION</b>
Scotland, the relevant community council	Wood Norton Parish Council
	Briston Parish Council
	Corpusty and Saxthorpe Parish Council
	Itteringham Parish Council
	Erpingham Parish Council
	Colby Parish Council
	Hanworth Parish Council
	East Ruston Parish Council
	North Walsham Parish Council
	Witton Parish Council
	Bacton Parish Council
	Pudding Norton Parish Council
	Hindolveston Parish Council
	Thurning Parish Council
	Melton Constable Parish Council
	Skeyton Parish Council
	Felmingham Parish Council
	Wickmere Parish Council
	Alby with Thwaite Parish Council
	Suffield Parish Council
Antingham Parish Council	
Swanton Abbott Parish Council	
Westwick Parish Council	
Worstead Parish Council	
Honing Parish Council	

<b>SCHEDULE 1 DESCRIPTION<sup>10</sup></b>	<b>ORGANISATION</b>
	Happisburgh Parish Council
	Swafeld Parish Council
	Knapton Parish Council
	Paston Parish Council
	Walcott Parish Council
	Lessingham Parish Council
	Ingworth Parish Council
	Necton Parish Council
	Bradenham Parish Council
	Shipdham Parish Council
	Sporle with Palgrave Parish Council
	Scarning Parish Council
	Litcham Parish Council
	Beeston with Bittering Parish Council
	Mileham Parish Council
	Tittleshall Parish Council
	Brisley Parish Council
	Colkirk Parish Council
	Dereham Parish Council
	North Tuddenham Parish Council
	Hoe Parish Council
	Swanton Morley Parish Council
	North Elmham Parish Council
	Bintree Parish Council
	Holme Hale Parish Council

<b>SCHEDULE 1 DESCRIPTION<sup>10</sup></b>	<b>ORGANISATION</b>
	Whinburgh and Westfield Parish Council
	Yaxham Parish Council
	Little Dunham Parish Council
	Fransham Parish Council
	Great Dunham Parish Council
	Lexham Parish Council
	Kempstone Parish Council
	Wendling Parish Council
	Longham Parish Council
	Gressenhall Parish Council
	Whissonsett Parish Council
	Stanfield Parish Council
	Beetley Parish Council
	Horningtoft Parish Council
	Gateley Parish Council
	Elsing Parish Council
	Lyng Parish Council
	Billingford Parish Council
	Bylaugh Parish Council
	Bawdeswell Parish Council
	Twyford Parish Council
	Foxley Parish Council
	Sparham Parish Council
	Guist Parish Council
	Reepham Parish Council



<b>SCHEDULE 1 DESCRIPTION<sup>10</sup></b>	<b>ORGANISATION</b>
	Marsham Parish Council
	Foulsham Parish Council
	Cawston Parish Council
	Heydon Parish Council
	Aylsham Parish Council
	Great Witchingham Parish Council
	Little Witchingham Parish Council
	Booton Parish Council
	Guestwick Parish Council
	Salle Parish Council
	Wood Dalling Parish Council
	Oulton Parish Council
	Blickling Parish Council
	Burgh and Tuttington Parish Council
	Themelthorpe Parish Council
	Brandiston Parish Council
The Environment Agency	The Environment Agency
The Joint Nature Conservation Committee	Joint Nature Conservation Committee
The Maritime and Coastguard Agency	Maritime & Coastguard Agency
The Marine Management Organisation	Marine Management Organisation
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	Norfolk County Council

<b>SCHEDULE 1 DESCRIPTION<sup>10</sup></b>	<b>ORGANISATION</b>
The relevant strategic highways company	Highways England
The Coal Authority	The Coal Authority
The relevant internal drainage board	Norfolk Rivers Internal Drainage Board
	The Broads 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
The Secretary of State for Defence	Ministry of Defence

<b>RELEVANT STATUTORY UNDERTAKERS</b>	
The relevant Clinical Commissioning Group	North Norfolk Clinical Commissioning Group
The relevant Clinical Commissioning Group	West Norfolk Clinical Commissioning Group
The relevant Clinical Commissioning Group	South Norfolk Clinical Commissioning Group
The National Health Service Commissioning Board	NHS England
The relevant NHS Trust	East of England Ambulance Service NHS Trust
Railways	Network Rail Infrastructure Ltd
	Highways England Historical Railways Estate

<b>RELEVANT STATUTORY UNDERTAKERS</b>	
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
Homes and Communities Agency	Homes and Communities Agency
The 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 Limited
	National Grid Gas Plc
	Scotland Gas Networks Plc
	Southern Gas Networks Plc

<b>RELEVANT STATUTORY UNDERTAKERS</b>	
	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

<b>SECTION 43 CONSULTEES (FOR THE PURPOSES OF SECTION 42(B))<sup>11</sup></b>
Cambridgeshire County Council
Norfolk County Council
Suffolk County Council
Lincolnshire County Council
The Broads National Park
North Norfolk District Council
Great Yarmouth Borough Council
Borough Council of King's Lynn & West Norfolk
Breckland District Council
Broadland District Council

<sup>11</sup> Sections 43 and 42(b) of the Planning Act 2008 (as amended)

<b>SECTION 43 CONSULTEES (FOR THE PURPOSES OF SECTION 42(B))<sup>11</sup></b>
---

Mid Suffolk District Council
------------------------------

West Suffolk - Forest Heath District Council and St Edmundsbury Borough Council
---

Norwich District Council
--------------------------

South Norfolk Council
-----------------------

<b>NON-PRESCRIBED CONSULTATION BODIES</b>
---

Royal National Lifeboat Institution
-------------------------------------



## APPENDIX 3 – RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

List of bodies who replied by the Statutory Deadline:

Anglian Water
Beeston with Bittering Parish Council
Broadland District Council
The Coal Authority
Colkirk Parish Council
Forestry Commission
Fulmodeston Parish Council
Great Yarmouth Borough Council
GTC UK (response was also on behalf of: Utility Grid Installations, Independent Pipelines, Electric Network Company, Quadrant Pipelines and Independent Power Networks)
Health and Safety Executive
Hindolveston Parish Council
Highways England
Highways England (on behalf of Historical Railways Estate)
Historic England
Holme Hale Parish Council
Marine Management Organisation
Maritime and Coastguard Agency
National Grid Gas plc National Grid Electricity Transmission plc
NATS Safeguarding
Necton Parish Council
Natural England
Norfolk County Council
Public Health England
Trinity House
Wood Norton Parish Council

**Richard Kent**

---

**From:** ALLEN, Sarah J <Sarah.ALLEN@nats.co.uk> on behalf of NATS Safeguarding <gmb-bdn-000913@nats.co.uk>  
**Sent:** 06 October 2016 13:31  
**To:** Environmental Services  
**Subject:** RE: EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation (Our Refs: SG23801 & SG23802)  
**Attachments:** East Anglia 4 - Norfolk Vanguard Offshore - East (Our Ref: SG23801); East Anglia 5 - Norfolk Vanguard Offshore West (Our Ref: SG23802)

Good Afternoon,

Please see attached email with regards to this application:

East Anglia 4 - Norfolk Vanguard Offshore Wind Farm – East (Our Ref: SG23801) – no objection  
East Anglia 5 - Norfolk Vanguard Offshore Wind Farm – West (Our Ref: SG23802) – **objection; rationale attached.**

Kind Regards  
NATS Safeguarding

---

**From:** Environmental Services [<mailto:environmentalservices@pins.gsi.gov.uk>]  
**Sent:** 05 October 2016 12:56  
**Subject:** EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation

Dear Sir / Madam,

Please see the attached correspondence on the proposed Norfolk Vanguard Offshore Wind Farm project.

Please note the deadline for consultation responses is **2 November 2016** and is a statutory requirement that cannot be extended.

Regards

Hannah

Hannah Pratt  
Senior EIA and Land Rights Advisor  
Major Applications and Plans

The Planning Inspectorate, 3D Temple Quay House, Temple Quay, Bristol BS1 6PN

Helpline: 0303 444 5000

Email: [environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)

Web: [www.gov.uk/government/organisations/planning-inspectorate](http://www.gov.uk/government/organisations/planning-inspectorate) (The Planning Inspectorate)

Web: [www.infrastructure.planninginspectorate.gov.uk](http://www.infrastructure.planninginspectorate.gov.uk) (National Infrastructure Planning)

Twitter: [@PINSgov](https://twitter.com/PINSgov)

This communication does not constitute legal advice.

Please view our [Information Charter](#) before sending information to the Planning Inspectorate.

\*\*\*\*\*



This email and any files transmitted with it are private and intended solely for the use of the individual or entity to which they are addressed. If you are not the intended recipient the E-mail and any files have been transmitted to you in error and any copying, distribution or other use of the information contained in them is strictly prohibited.

Nothing in this E-mail message amounts to a contractual or other legal commitment on the part of the Government unless confirmed by a communication signed on behalf of the Secretary of State.

The Department's computer systems may be monitored and communications carried on them recorded, to secure the effective operation of the system and for other lawful purposes.

Correspondents should note that all communications from Department for Communities and Local Government may be automatically logged, monitored and/or recorded for lawful purposes.

\*\*\*\*\*

---

If you are not the intended recipient, please notify our Help Desk at Email [Information.Solutions@nats.co.uk](mailto:Information.Solutions@nats.co.uk) immediately. You should not copy or use this email or attachment(s) for any purpose nor disclose their contents to any other person.

NATS computer systems may be monitored and communications carried on them recorded, to secure the effective operation of the system.

Please note that neither NATS nor the sender accepts any responsibility for viruses or any losses caused as a result of viruses and it is your responsibility to scan or otherwise check this email and any attachments.

NATS means NATS (En Route) plc (company number: 4129273), NATS (Services) Ltd (company number 4129270), NATSNAV Ltd (company number: 4164590) or NATS Ltd (company number 3155567) or NATS Holdings Ltd (company number 4138218). All companies are registered in England and their registered office is at 4000 Parkway, Whiteley, Fareham, Hampshire, PO15 7FL.

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---

## Richard Kent

---

**From:** ALLEN, Sarah J <Sarah.ALLEN@nats.co.uk> on behalf of NATS Safeguarding <gmb-bdn-000913@nats.co.uk>  
**Sent:** 06 October 2016 13:27  
**To:** NATS Safeguarding  
**Subject:** East Anglia 5 - Norfolk Vanguard Offshore West (Our Ref: SG23802)  
**Attachments:** 23802\_TOPA\_final.pdf

We refer to the application above. The proposed development has been examined by our technical safeguarding teams and conflicts with our safeguarding criteria.

Accordingly, NATS (En Route) plc objects to the proposal. The reasons for NATS's objection are outlined in the attached report TOPA **SG23802**.

We would like to take this opportunity to draw your attention to the legal obligation of local authorities to consult NATS before granting planning permission for a wind farm. The obligation to consult arises in respect of certain applications that would affect a technical site operated by or on behalf of NATS (such sites being identified by safeguarding plans that are issued to local planning authorities).

In the event that any recommendations made by NATS are not accepted, local authorities are obliged to follow the relevant directions within Planning Circular 2 2003 - Scottish Planning Series: Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) (Scotland) Direction 2003 or Annex 1 - The Town And Country Planning (Safeguarded Aerodromes, Technical Sites And Military Explosives Storage Areas) Direction 2002.

These directions require that the planning authority notify both NATS and the Civil Aviation Authority ("CAA") of their intention. As this further notification is intended to allow the CAA to consider whether further scrutiny is required, the notification should be provided prior to any granting of permission.

It should also be noted that the failure to consult NATS, or to take into account NATS's comments when determining a planning application, could cause serious safety risks for air traffic.

Should you have any queries please contact us using the details below.

Yours faithfully

**Sarah Allen**  
NATS Safeguarding  
[natssafeguarding@nats.co.uk](mailto:natssafeguarding@nats.co.uk)

## Richard Kent

---

**From:** ALLEN, Sarah J <Sarah.ALLEN@nats.co.uk> on behalf of NATS Safeguarding <gmb-bdn-000913@nats.co.uk>  
**Sent:** 06 October 2016 13:25  
**To:** NATS Safeguarding  
**Subject:** East Anglia 4 - Norfolk Vanguard Offshore - East (Our Ref: SG23801)

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully,

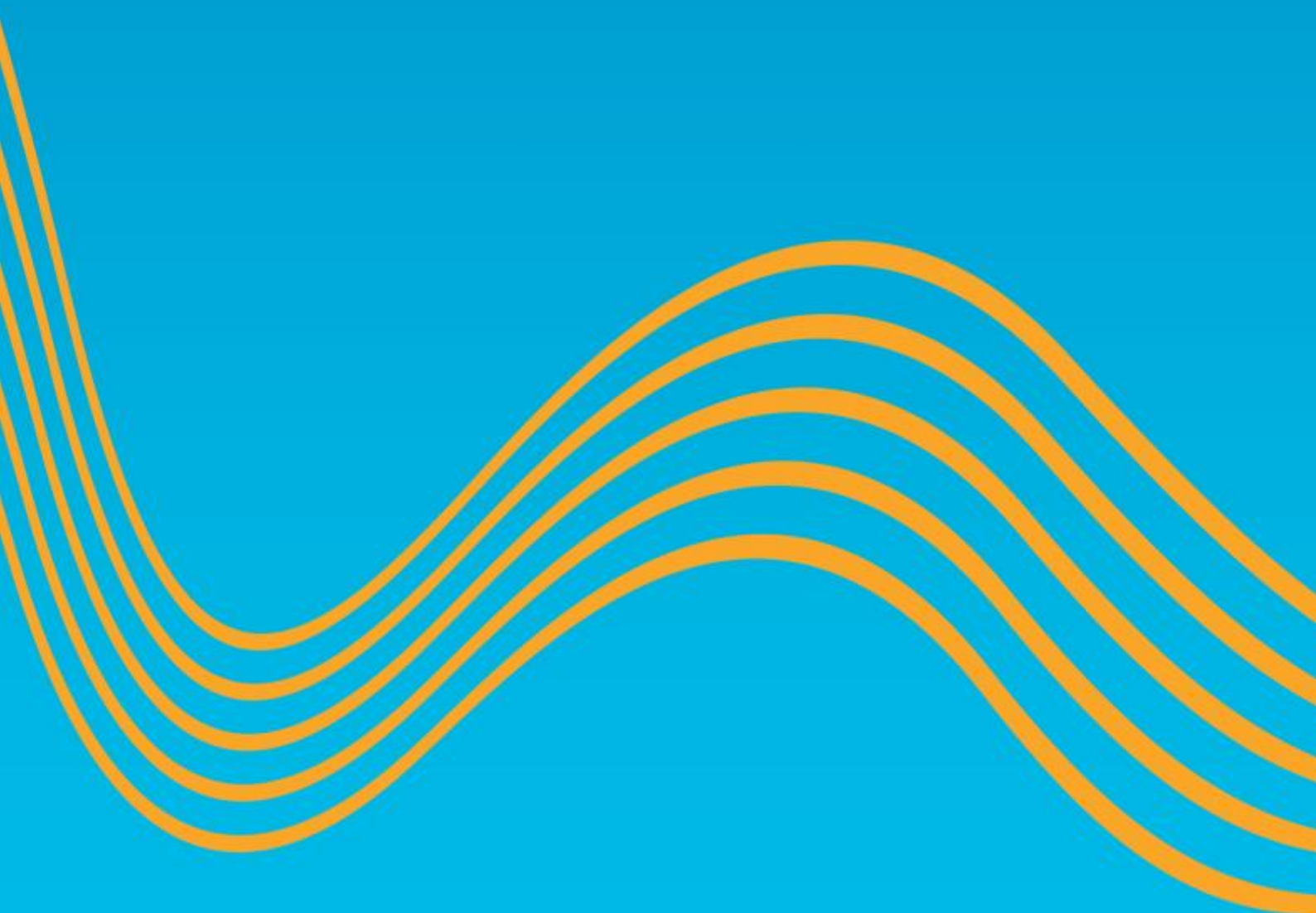
Sarah Allen  
Technical Administrator  
On behalf of NERL Safeguarding Office

**Technical and Operational Assessment (TOPA)**

For East Anglia 5 (Norfolk Vanguard Offshore West)  
Windfarm Development

Issue 1

**NATS reference: SG23802**



**Publication history**

<b>Issue</b>	<b>Month/Year</b>	<b>Changes in this issue</b>
Issue 1	October 2016	

## Contents

<b>1.</b>	<b>Background</b>	<b>4</b>
1.1.	En-route Consultation	4
<b>2.</b>	<b>Application details</b>	<b>5</b>
2.1.	En-route radar technical assessment	6
2.1.1.	Predicted impact on Cromer Radar	6
2.1.2.	En-route operational assessment of radar impact	6
2.2.	En-route navigational aid assessment	6
2.2.1.	Predicted impact on navigation aids.	6
2.3.	En-route radio communication assessment	6
2.3.1.	Predicted impact on the radio communications infrastructure.	6
<b>3.</b>	<b>Conclusions</b>	<b>6</b>
3.1.	En-route consultation	6

# 1. Background

## 1.1. En-route Consultation

NATS is responsible for the safe and expeditious movement in the en-route phase of flight for aircraft operating in controlled airspace in the UK. To undertake this responsibility it has a comprehensive infrastructure of radars, communication systems and navigational aids throughout the UK, all of which could be compromised by the establishment of a wind farm.

In this respect NATS is responsible for safeguarding this infrastructure to ensure its integrity to provide the required services to Air Traffic Control (ATC).

In order to discharge this responsibility NATS is a statutory consultee for all wind farm applications, and assesses the potential impact of every proposed development in the UK.

The En-route radar technical assessment section of this document defines the assessments carried out against the development proposed in section 2.

## 2. Application details

The Planning Inspectorate submitted a request for a NATS technical and operational assessment (TOPA) for the development at East Anglia Five (Norfolk Vanguard Offshore West) as detailed in the table below.

Boundary	Lat	Long	East	North	Hub (m)	Tip (m)
1	3.0377	52.7717	7626592	-4957211	0	275
2	3.1525	52.9040	7649170	-4934009	0	275
3	3.1457	52.9283	7653661	-4934977	0	275
4	3.1601	52.9307	7653923	-4932240	0	275
5	3.1576	52.9396	7655577	-4932596	0	275
6	3.1560	52.9456	7656678	-4932834	0	275
7	3.1552	52.9482	7657161	-4932937	0	275
8	3.1536	52.9541	7658255	-4933173	0	275
9	3.1505	52.9651	7660307	-4933615	0	275
10	3.1486	52.9717	7661520	-4933877	0	275
11	3.0708	53.2464	7712623	-4945040	0	275
12	3.0535	53.2392	7711524	-4948410	0	275
13	3.0453	53.2357	7710987	-4950001	0	275
14	3.0393	53.2333	7710619	-4951178	0	275
15	3.0353	53.2317	7710379	-4951950	0	275
16	3.0343	53.2313	7710318	-4952143	0	275
17	2.8107	53.1411	7696530	-4995523	0	275
18	2.7599	53.0628	7682823	-5006006	0	275
19	2.7599	53.0611	7682509	-5006025	0	275
20	2.7599	52.9288	7658409	-5007520	0	275
21	2.7597	52.8695	7647619	-5008222	0	275
22	2.7595	52.8616	7646185	-5008352	0	275
23	2.7594	52.7529	7626459	-5009581	0	275
24	3.0377	52.7717	7626592	-4957211	0	275

**Table 1 – turbine coordinates and height**



## 2.1. En-route radar technical assessment

### 2.1.1. Predicted impact on Cromer Radar

Using the theory as described in Appendix A and development specific propagation profile it has been determined that the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to cause false primary plots to be generated. A reduction in the radar's probability of detection, for real aircraft, is also anticipated.

### 2.1.2. En-route operational assessment of radar impact

Where an assessment reveals a technical impact on a specific NATS radar, the users of that radar are consulted to ascertain whether the anticipated impact is acceptable to their operations or not.

Unit or role	Comment
Prestwick Centre ATC	<b>Unacceptable</b>
London Area Control Centre ATC	<b>Unacceptable</b>
Aberdeen (En Route) ATC	<b>Unacceptable</b>
RDP Asset Management	<b>Unacceptable</b>
London Military ATC	Acceptable

*Note: The technical impact, as detailed above, has also been passed to non-NATS users of the affected radar, this may have included other planning consultees such as the MOD or other airports. Should these users consider the impact to be unacceptable it is expected that they will contact the planning authority directly to raise their concerns.*

## 2.2. En-route navigational aid assessment

### 2.2.1. Predicted impact on navigation aids.

No impact is anticipated on NATS's navigation aids.

## 2.3. En-route radio communication assessment

### 2.3.1. Predicted impact on the radio communications infrastructure.

No impact is anticipated on NATS's radio communications infrastructure.

## 3. Conclusions

### 3.1. En-route consultation

The proposed development has been examined by technical and operational safeguarding teams. A technical impact is anticipated, this has been deemed to be **unacceptable**.

## Appendix A – background radar theory

### Primary Radar False Plots

When radar transmits a pulse of energy with a power of  $P_t$  the power density,  $P$ , at a range of  $r$  is given by the equation:

$$P = \frac{G_t P_t}{4\pi r^2}$$

Where  $G_t$  is the gain of the radar's antenna in the direction in question.

If an object at this point in space has a radar cross section of  $\sigma$ , this can be treated as if the object re-radiates the pulse with a gain of  $\sigma$  and therefore the power density of the reflected signal at the radar is given by the equation:

$$P_a = \frac{\sigma P}{4\pi r^2} = \frac{\sigma G_t P_t}{(4\pi)^2 r^4}$$

The radar's ability to collect this power and feed it to its receiver is a function of its antenna's effective area,  $A_e$ , and is given by the equation:

$$P_r = P_a A_e = \frac{P_a G_r \lambda^2}{4\pi} = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r^4}$$

Where  $G_r$  is the Radar antenna's receive gain in the direction of the object and  $\lambda$  is the radar's wavelength.

In a real world environment this equation must be augmented to include losses due to a variety of factors both internal to the radar system as well as external losses due to terrain and atmospheric absorption.

For simplicity these losses are generally combined in a single variable  $L$ .

$$P_r = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r^4 L}$$

## Secondary Radar Reflections

When modelling the impact on SSR the probability that an indirect signal reflected from a wind turbine has the signal strength to be confused for a real interrogation or reply can be determined from a similar equation:

$$P_r = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r_t^2 r_r^2 L}$$

Where  $r_t$  and  $r_r$  are the range from radar-to-turbine and turbine-to-aircraft respectively. This equation can be rearranged to give the radius from the turbine within which an aircraft must be for reflections to become a problem.

$$r_r = \sqrt{\frac{\lambda^2}{(4\pi)^3}} \sqrt{\frac{\sigma G_t G_r P_t}{r_t^2 P_r L}}$$

## Shadowing

When turbines lie directly between a radar and an aircraft not only do they have the potential to absorb or deflect, enough power such that the signal is of insufficient level to be detected on arrival.

It is also possible that azimuth determination, whether this done via sliding window or monopulse, can be distorted giving rise to inaccurate position reporting.

## Terrain and Propagation Modelling

All terrain and propagation modelling is carried out by a software tool called ICS Telecom (version 11.1.7). All calculations of propagation losses are carried out with ICS Telecom configured to use the ITU-R 526 propagation model.

## Appendix B – Diagrams



- consented/built
- impact –accepted
- impact –objection
- mitigated
- mitigation –proposed
- no impact
- refused/withdrawn

## Richard Kent

---

**From:** Charles Peter Brindley <colkirkpc@btinternet.com>  
**Sent:** 13 October 2016 09:25  
**To:** Environmental Services  
**Subject:** Your Reference 161005\_EN010079

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

FAO Hannah Pratt

With reference to the above correspondence dated 5 October, Colkirk Parish Council has no comments to make with regards the scoping report consultation

Yours faithfully  
Charles Brindley  
Clerk to Colkirk Parish Council  
Springfield  
Fransham Rd  
BEESTON  
PE32 2LZ  
Tel 01328 701425  
Email [colkirkpc@btinternet.com](mailto:colkirkpc@btinternet.com)

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---

## Richard Kent

---

**From:** Thomas.Anderson@gtc-uk.co.uk  
**Sent:** 13 October 2016 11:28  
**To:** Environmental Services  
**Subject:** 161005\_EN10079

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

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](mailto:tom.anderson@gtc-uk.co.uk)  
Web: [www.gtc-uk.co.uk](http://www.gtc-uk.co.uk)

### NOTE:

This E-Mail originates from GTC, Energy House, Woolpit Business Park, Woolpit, Bury St Edmunds, Suffolk, IP30 9UP

VAT Number: GB688 8971 40. Registered No: 029431.

### DISCLAIMER

The information in this E-Mail and in any attachments is confidential and may be privileged. If you are not the intended recipient, please destroy this message, delete any copies held on your system and notify the sender immediately. You should not retain, copy or use this E-Mail for any purpose, nor disclose all or any part of its content to any other person. Whilst we run antivirus software on Internet E-Mails, we are not liable for any loss or damage. The recipient is advised to run their own up to date antivirus software.

Thank you

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---

## Richard Kent

---

**From:** Galloway, Davina <Davina.Galloway@highwaysengland.co.uk>  
**Sent:** 19 October 2016 16:00  
**To:** Environmental Services  
**Cc:** Adkins, Connor  
**Subject:** EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

FAO: Hannah Pratt

Thank you for sending the above EIA scoping notification and consultation document to Highways England. I am responding as the Asset Manager for the A47 trunk road. I note the proximity to the A47 and would ask that we be consulted on any further scoping work for this site if it is going to impact in any way – eg congestion due to the movement of equipment, noise or general impact on our network.

Any work that is carried out must take in Department for Transport policies and DfT Circular 2/2013.

Regards.

Davina Galloway

**Davina Galloway**

Asset Delivery Manager

Operations 'East'

Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW

**Tel:** +44 (0) 300 4704840

**Web:** <http://www.highways.gov.uk>

*This email may contain information which is confidential and is intended only for use of the recipient/s named above. If you are not an intended recipient, you are hereby notified that any copying, distribution, disclosure, reliance upon or other use of the contents of this email is strictly prohibited. If you have received this email in error, please notify the sender and destroy it.*

**Highways England Company Limited | General enquiries: 0300 123 5000 | National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF |**  
<https://www.gov.uk/government/organisations/highways-england> | [info@highwaysengland.co.uk](mailto:info@highwaysengland.co.uk)

Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

Consider the environment. Please don't print this e-mail unless you really need to.

## Richard Kent

---

**From:** Charles Peter Brindley <beestonbitteringpc@btinternet.com>  
**Sent:** 24 October 2016 09:38  
**To:** Environmental Services  
**Subject:** Your Reference 161005\_EN010079

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

FAO Helen Pratt

With regards the above consultation on the Norfolk Vanguard Offshore Wind Farm project, the concerns of Beeston with Bittering Parish Council are:

- 1 Where will the onshore cable lines go
- 2 Where will the surface equipment be located

The sooner that the answers to these two questions can be answered the better and only then will this parish council be able to provide more substantive feedback on its concerns.

Yours sincerely  
Charles Brindley  
Clerk to Beeston with Bittering Parish Council  
Springfield  
Fransham Rd  
BEESTON  
PE32 2LZ  
Tel 01328 701425  
Email [beestonbitteringpc@btinternet.com](mailto:beestonbitteringpc@btinternet.com)

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---



## Richard Kent

---

**From:** Irwin, Matthew <Matthew.Irwin@highwaysengland.co.uk>  
**Sent:** 21 October 2016 12:22  
**To:** Environmental Services  
**Subject:** EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation

Hi Hannah

In response to the above/below, Historical Railways Estate owns a number of structures in the area described and potentially some small pieces of land.

The structures are predominantly former rail bridges/tunnels/walls, many with roads running over/under them.

Happy to give more specific information if required.

As a Civil engineer my knowledge of specific eco/env issues is somewhat limited, but bats, newts, dormice, badgers are not unknown in and around our structures.

Kind regards

Matt

**Matthew Irwin, Civil Engineer**

Highways England, Historical Railways Estate (on behalf of Department for Transport)  
Hudson House, Toft Green, York, North Yorkshire, YO1 6HP  
Tel: +44 (0) 1904 524849 Mob: 07713 707 932  
Web: <http://www.highwaysengland.co.uk>

**From:** Environmental Services [<mailto:environmentalservices@pins.gsi.gov.uk>]  
**Sent:** 05 October 2016 12:56  
**Subject:** EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation

Dear Sir / Madam,

Please see the attached correspondence on the proposed Norfolk Vanguard Offshore Wind Farm project.

Please note the deadline for consultation responses is **2 November 2016** and is a statutory requirement that cannot be extended.

Regards

Hannah

Hannah Pratt  
Senior EIA and Land Rights Advisor  
Major Applications and Plans

The Planning Inspectorate, 3D Temple Quay House, Temple Quay, Bristol BS1 6PN

Helpline: 0303 444 5000

Email: [environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)

Web: [www.gov.uk/government/organisations/planning-inspectorate](http://www.gov.uk/government/organisations/planning-inspectorate) (The Planning Inspectorate)

Web: [www.infrastructure.planninginspectorate.gov.uk](http://www.infrastructure.planninginspectorate.gov.uk) (National Infrastructure Planning)

Twitter: [@PINSGov](https://twitter.com/PINSGov)

This communication does not constitute legal advice.

Please view our [Information Charter](#) before sending information to the Planning Inspectorate.

\*\*\*\*\*

This email and any files transmitted with it are private and intended solely for the use of the individual or entity to which they are addressed. If you are not the intended recipient the E-mail and any files have been transmitted to you in error and any copying, distribution or other use of the information contained in them is strictly prohibited.

Nothing in this E-mail message amounts to a contractual or other legal commitment on the part of the Government unless confirmed by a communication signed on behalf of the Secretary of State.

The Department's computer systems may be monitored and communications carried on them recorded, to secure the effective operation of the system and for other lawful purposes.

Correspondents should note that all communications from Department for Communities and Local Government may be automatically logged, monitored and/or recorded for lawful purposes.

\*\*\*\*\*

*This email may contain information which is confidential and is intended only for use of the recipient/s named above. If you are not an intended recipient, you are hereby notified that any copying, distribution, disclosure, reliance upon or other use of the contents of this email is strictly prohibited. If you have received this email in error, please notify the sender and destroy it.*

**Highways England Company Limited | General enquiries: 0300 123 5000 | National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF | <https://www.gov.uk/government/organisations/highways-england> | [info@highwaysengland.co.uk](mailto:info@highwaysengland.co.uk)**

*Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ*

Consider the environment. Please don't print this e-mail unless you really need to.

## Richard Kent

---

**From:** Ron Graham <ron@wootton.rlshost.net>  
**Sent:** 21 October 2016 23:51  
**To:** Environmental Services  
**Subject:** Your ref. 161005\_EN010079. Application by Vattenfall Wind Power Limited for an Order Granting development Consent for the Norfolk Vanguard Offshore Wind Farm.

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Information/comment from Holme Hale Parish Council (HHPC) that should be considered in the environmental statement relating to the scoping report. The HHPC are concerned about the proposals to site a new sub-station at Necton, and following an initial review of these plans it is considered that an environmental impact assessment should take into account the following:

- the size and scale of the site/buildings proposed, which will have a major visual impact on the residents of Holme Hale and Necton
- the extensive/intrusive light pollution that would result
- public health issues, particularly as the proposed site is close to a popular local primary school
- security issues, especially given the close proximity of a very active RAF base

Comments submitted by Mr Ronald Graham (Parish Clerk) on behalf of Holme Hale Parish Council.

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---

Sent electronically to:

[environmentalservices@pins.gsi.gov.uk](mailto: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](http://www.nationalgrid.com)

21<sup>st</sup> October 2016

Dear Sir/Madam,

**Ref: EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation**

I refer to your letter dated 5<sup>th</sup> October 2016 in relation to the above proposed application for a Development Consent Order for the proposed Norfolk Vanguard Offshore Wind Farm. Having reviewed the Scoping Report, I would like to make the following comments:

**National Grid infrastructure within / in close proximity to the onshore scoping area:**

**Electricity Transmission**

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

- 4VV (400kV) overhead line route
  - Norwich Main to Walpole 1
  - Norwich Main to Walpole 2
- Necton (400kV) Substation

**Gas Transmission**

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

**Gas Terminal:**

- Bacton Gas Terminal

**Above Ground Installation:**

- Swanton Abbot Above Ground Installation

**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 05 - Bacton to Yelverton
- Feeder Main 27 - Bacton to Kings Lynn

## **Gas Distribution**

National Grid has the following Gas Distribution assets situated within or in close proximity to the proposed onshore scoping area:

- High and Intermediate pressure (above 2 bar) Gas Pipelines and associated equipment;
- Low or Medium pressure (below 2 bar) gas pipes and associated equipment;
- Above ground gas sites and equipment.

Please find enclosed plans showing the location of National Grid's 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](http://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.
- 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.
- 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 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](mailto:box.landandacquisitions@nationalgrid.com) as well as by post to the following address:

The Company Secretary  
1-3 The Strand  
London  
WC2N 5EH

In order to respond at the earliest opportunity National Grid will require the following:

- Draft DCO including the Book of Reference and relevant Land Plans
- Shape Files or CAD Files for the order limits

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 notwithstanding any discussions taking place in relation to connections with electricity or gas customer services.

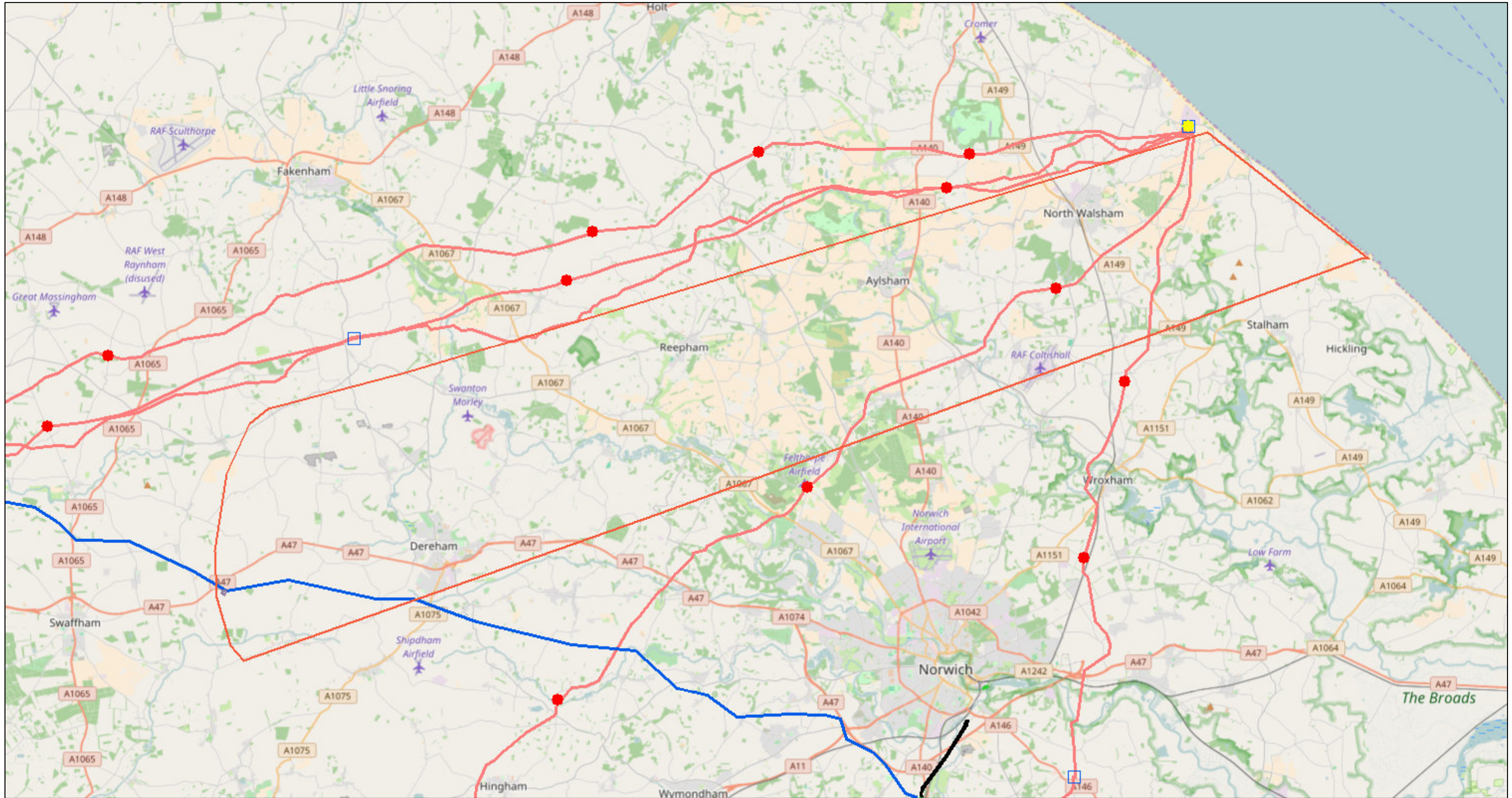
Yours Faithfully



**Nick Dexter.**



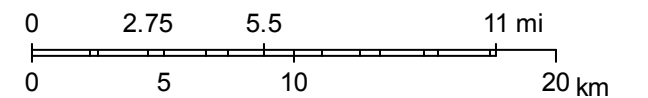
# NG Transmission Apparatus



October 14, 2016

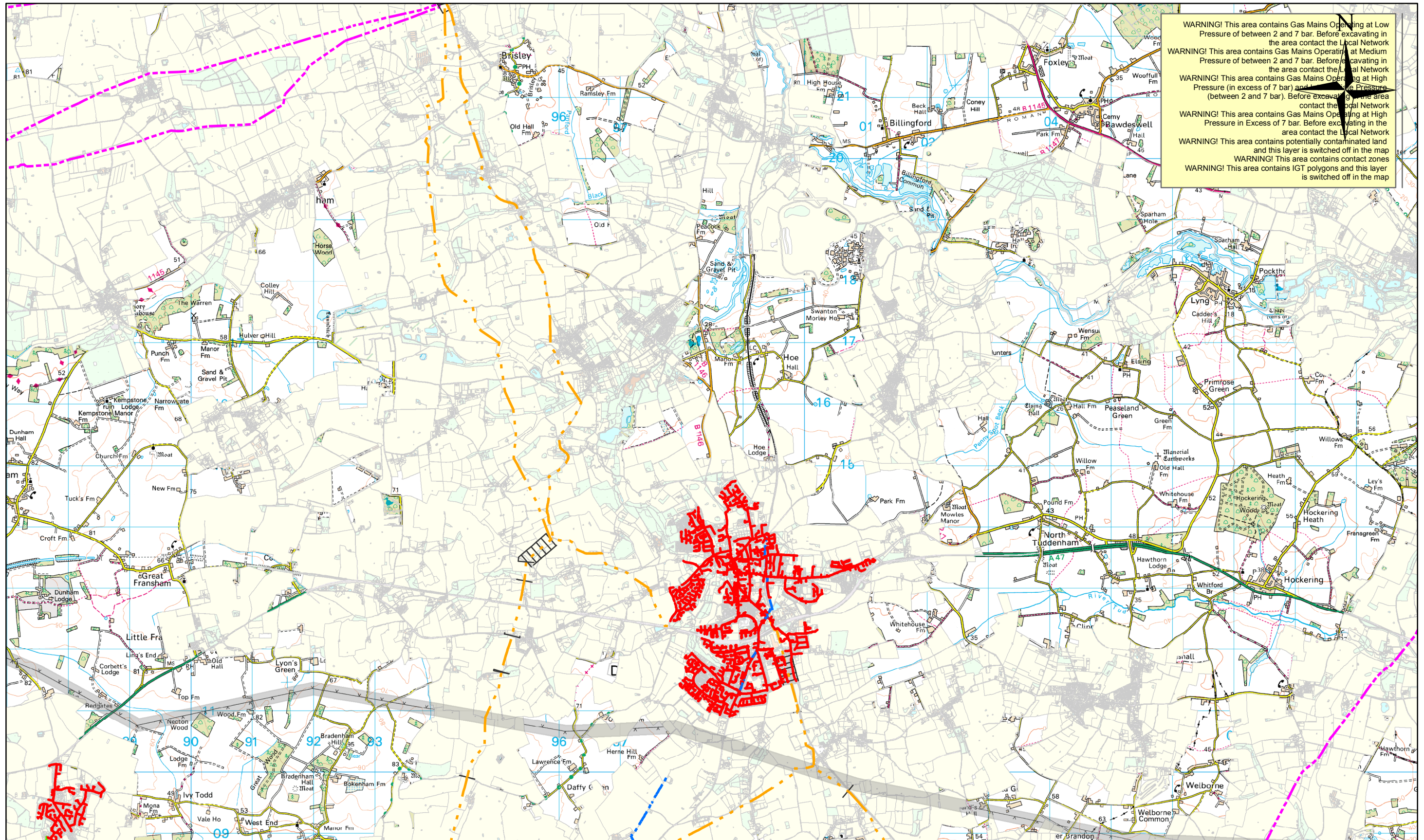
1:288,895

- AGIS**
- Block Valve (BV)
  - Transferred Offtake (XT)
  - Multi Junction (MJ)
- LINE**
- 400
- GAS\_PIPE\_FEEDER**
- N
- AGI Boundary**
- Operational (OPB)
- 132** Site (STB)
- CABLE



Map data © OpenStreetMap contributors, CC-BY-SA





WARNING! This area contains Gas Mains Operating at Low Pressure of between 2 and 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at Medium Pressure of between 2 and 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at High Pressure (in excess of 7 bar) and above. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at High Pressure in Excess of 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains potentially contaminated land and this layer is switched off in the map

WARNING! This area contains contact zones

WARNING! This area contains IGT polygons and this layer is switched off in the map

SCALE: 1:60000 @ A3  
 USER ID: CHRISTOPHER.B  
 DATE: 19-Oct-2016 11:24:34  
 ESRI ID: CB501356  
 MAP REF: 598491, 315701  
 CENTRE: CLEE1EA1, 1001

LP GAS MAIN  
 M/P GAS MAIN  
 I/P GAS MAIN  
 H/P GAS MAIN  
 N/H/P GAS MAIN

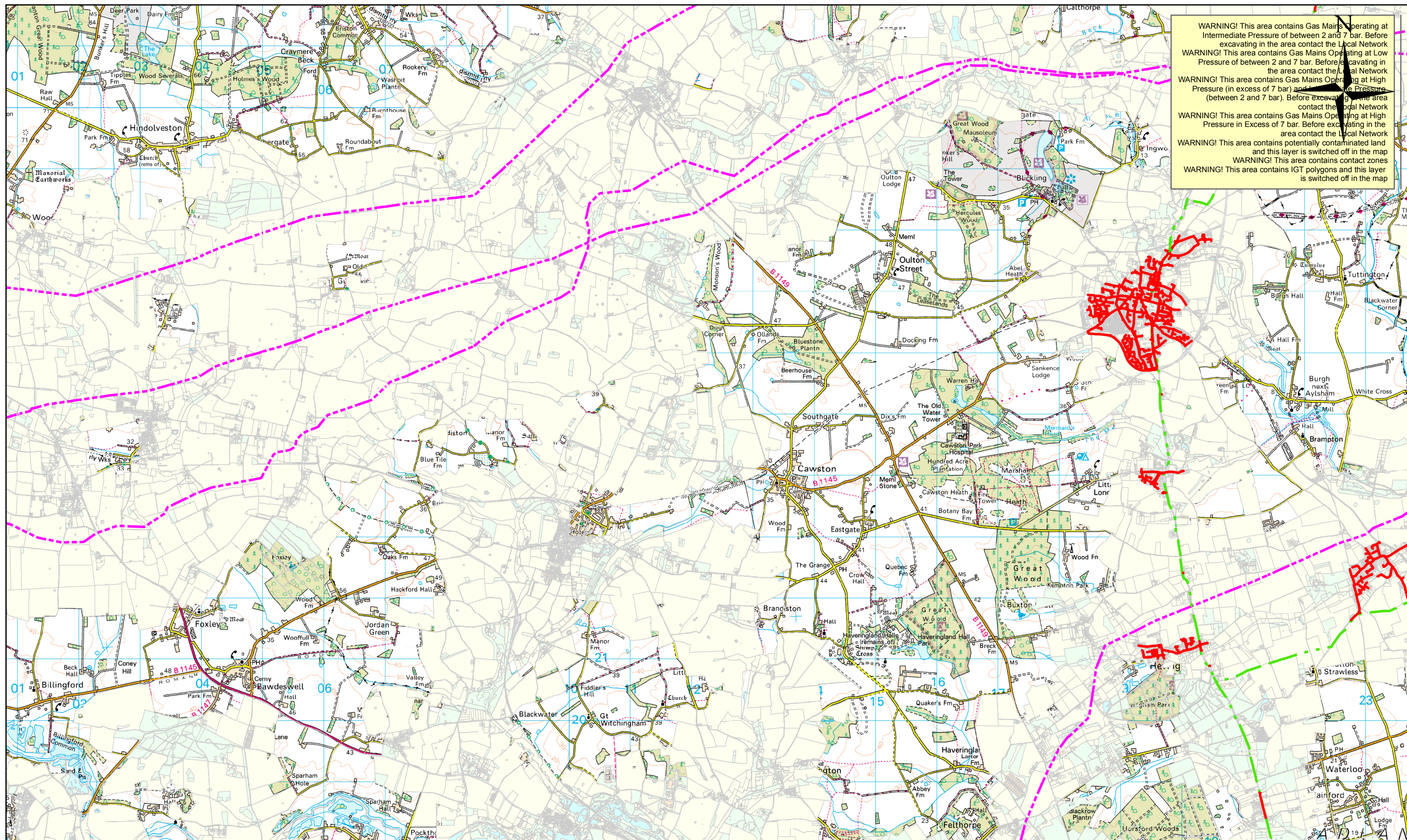
ABANDON - LP  
 ABANDON - MP



This plan shows those pipes owned by National Grid Gas plc in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Gas plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

This plan is reproduced from or based on the OS map by National Grid Gas plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved





WARNING! This area contains Gas Mains Operating at Intermediate Pressure of between 2 and 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at Low Pressure of between 2 and 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at High Pressure (in excess of 7 bar) and Intermediate Pressure (between 2 and 7 bar). Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at High Pressure in Excess of 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains potentially contaminated land and this layer is switched off in the map

WARNING! This area contains contact zones

WARNING! This area contains IGT polygons and this layer is switched off in the map

SCALE: 1:60000 @ A3  
 USER ID: CHRISTOPHER.B  
 DATE: 19-Oct-2016 11:28:19  
 ESRI ID: CB501356  
 MAP REF: 612318, 324843  
 CENTRE: CLEE1EA1, 1001

L/P GAS MAIN  
 M/P GAS MAIN  
 I/P GAS MAIN  
 H/P GAS MAIN  
 N/H/P GAS MAIN

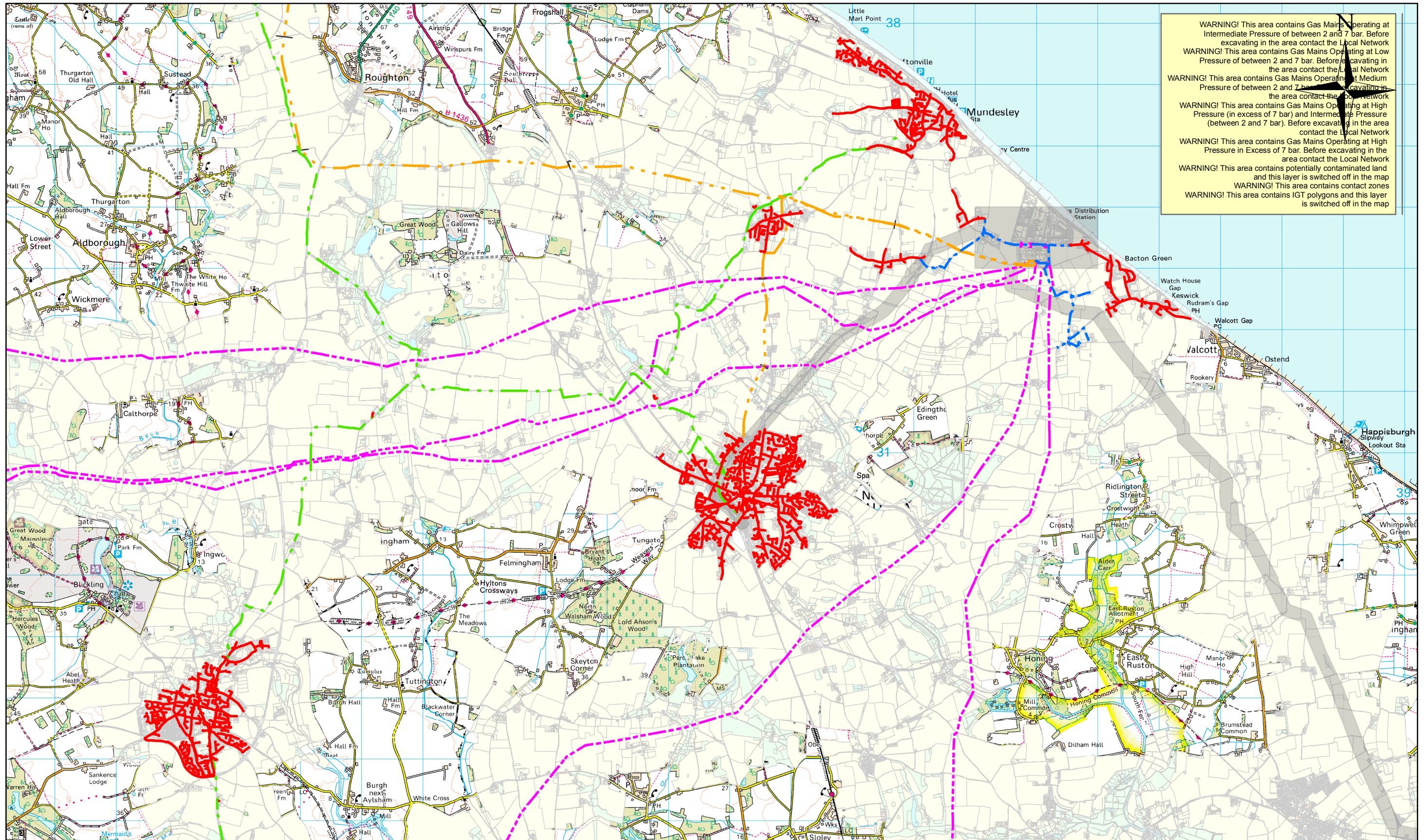
ABANDON - LP  
 ABANDON - MP



This plan shows those pipes owned by National Grid Gas plc in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Gas plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

This plan is reproduced from or based on the OS map by National Grid Gas plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved





WARNING! This area contains Gas Mains Operating at Intermediate Pressure of between 2 and 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at Low Pressure of between 2 and 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at Medium Pressure of between 2 and 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at High Pressure (in excess of 7 bar) and Intermediate Pressure (between 2 and 7 bar). Before excavating in the area contact the Local Network

WARNING! This area contains Gas Mains Operating at High Pressure in Excess of 7 bar. Before excavating in the area contact the Local Network

WARNING! This area contains potentially contaminated land and this layer is switched off in the map

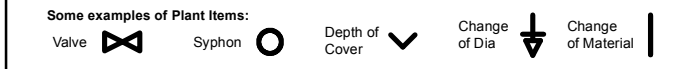
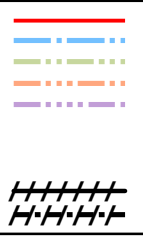
WARNING! This area contains contact zones

WARNING! This area contains IGT polygons and this layer is switched off in the map

SCALE: 1:60000 @ A3  
 USER ID: CHRISTOPHER.B  
 DATE: 19-Oct-2016 11:32:48  
 ESRI ID: CB501356  
 MAP REF: 627708, 331490  
 CENTRE: CLEE1EA1, 1001

L/P GAS MAIN  
 M/P GAS MAIN  
 I/P GAS MAIN  
 H/P GAS MAIN  
 N/H/P GAS MAIN

ABANDON - LP  
 ABANDON - MP



This plan shows those pipes owned by National Grid Gas plc in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners.

The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Gas plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

This plan is reproduced from or based on the OS map by National Grid Gas plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved



# Norfolk County Council comments on the Norfolk Vanguard Offshore Wind Farm

## Environmental Impact Assessment

### Scoping Report

October 2016

#### 1. Introduction

- 1.1. The County Council welcomes the opportunity to comment on the 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 (Appendix 1) 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. **Transport / Highways** – the County Council is satisfied with the level of detail expressed in the Scoping Report regarding transport and highway matters.
- 2.3. **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 5 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.

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. In addition to the electricity supply deficits that exist around North Walsham there are also electricity supply issues around the Snetterton area. 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 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. **Commercial Fishing** - the Scoping Report specifically refers to the need to take into account the potential cumulative impacts of other wind farm developments within the former East Anglia Zone (page 150 para 583). While supporting this principle, it is felt that the EIA should take into account the wider cumulative impacts arising from other operational, consented and proposed wind farms off the Norfolk Coast (i.e. taking into account wind farms consented under earlier consenting rounds / licencing regimes). 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.
  - 2.7. **Shipping and Navigation** – The Scoping Report (page 179 paragraph 659) refers to the potential cumulative impacts on shipping and navigation arising from other sites in the former East Anglia Zone. This needs to be extended to the wider cumulative impacts arising from other operational, consented and proposed wind farms off the Norfolk Coast (i.e. taking into account wind farms consented under earlier consenting rounds / licencing regimes). 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.
  - 2.8. **Onshore Cumulative Impacts** – The County Council welcomes reference on page 318 paragraph 1155 to the need to take into account the onshore cumulative impacts arising from this and other proposals. The EIA should consider the opportunities for any potential synergy with other planned/proposed wind farms, particularly in relation to the possibility of sharing onshore infrastructure such as cable routes; relay stations and substation connection points.
  - 2.9. **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 (18 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.
  - 2.10. Should you have any queries with the above comments please contact Stephen Faulkner on 01603 222752 or email [stephen.faulkner@norfolk.gov.uk](mailto:stephen.faulkner@norfolk.gov.uk)
3. Environment

- (a) **Ecology**

3.1. Grey seals

The Scoping Report notes that there are no designated sites for grey seals *Halichoerus grypus* in South-east England (para 486), and describes assessing Natura 2000 sites in the context of the HRA that are designated for mobile species such as seals (para 487). Breeding grey seals on Norfolk Coast are relatively recent phenomenon (first modern records from around 2001) but numbers have increased rapidly (2,342 pups born at Blakeney Point in 2015-16 and 1,116 at Horsey). These rookeries post-date the Natura2000 citations and, as such, grey seals were not included as designated features of the North Norfolk SAC or Horsey-Winterton SAC and therefore do not feature in the Conservation Objectives for these sites. Nevertheless recent advice from Natural England is that if designated today, or if the citations are updated, the grey seal would certainly feature as a Conservation Objective of these sites. The County Council would suggest that they should be considered alongside the other Conservation Objectives.

3.2. Little terns

The scoping report makes several references to little terns *Sternula albifrons*. Reference is made to the colony at Great Yarmouth-North Denes SPA. However, the little terns are highly mobile and their breeding locations vary year-on-year. Very small numbers – and sometimes none - have bred at North Denes SPA for the last few years but, instead, the East-Norfolk coast SPA population has used other beaches, mostly to the north. In 2016, 300 pairs nested on the East-Norfolk coast, c20% of the UK population, with the majority at two sites, Eccles and Winterton (although the number of successfully fledged young at the later site was less than 20), and probably some ‘off-shore’ at Scroby Sands. In most ecological assessments of this nature, the east Norfolk population is considered as the ‘SPA population’ whether or not it actually uses the designated site or breeds elsewhere.

3.3. Ornithology data sources

Table 3.10 lists data sources for breeding birds and refers to the *Bird Atlas 2007-11: The breeding and wintering birds of Britain and Ireland*. The *Norfolk Bird Atlas* covers the same time period and would provide greater detail in some matters. The annual *Norfolk Bird and Mammal Reports* (Norfolk and Norwich Naturalist Society) are also highly useful for up-to-date information.

The RSPB currently runs a little tern recovery project in East of England as part of an EU Life+ project, and monitors and protects breeding colonies in Norfolk. Presumably the project team will be able to provide the most up-to-date information on this species. <http://www.littleterns.org/conservation>

## **Recreation**

- 3.4. Where reference is made to PRoW and The Norfolk Coast Path (e.g. para. 902, para. 1,174), other Norfolk long-distance Trails should also be acknowledged (e.g. Paston Way which runs from Cromer to North Walsham and The Weavers Way which runs from North Walsham to Great Yarmouth). These long-distance trails also have promoted circular walks along their length, and all promoted routes might require mitigation if the cable route impacts them.

There is large publically-accessible Forestry Commission woodland, Bacton Woods, in the area where the cable may come ashore, which may need consideration.

Seal-watching on the East coast, mostly at Horsey but now also elsewhere, is a major tourist attraction in winter, with a likely significant contribution to the local economy. A recent survey recorded >100 visitors per hour on the coast path during peak periods at Horsey (*Visitor Surveys at European Protected Sites in Norfolk during 2015- 2016*; Norfolk County Council/ Norfolk Biodiversity Partnership/ Footprint Ecology; July 2016).

The EIA will need to consider the above recreational issues and the potential impacts arising from the planned onshore proposals.

## **Landscape**

- 3.5. Paragraph 1167 page 321 (Landscape Character) refers to the '*North and South Brecks Landscape Character Assessment (2013)*', this should read the '*Norfolk and Suffolk Brecks Landscape Character Assessment (2013)*'. It would be more appropriate for the Breckland District Landscape Character Assessment (2007) by Land Use Consultants to be listed here. Figure 4.4 (drawing PB4476-002-2-50) shows Landscape Character Types as per this assessment. It is recommended that this assessment is principally used for the purposes of the Landscape Visual Impact Assessment (LVIA) for the Breckland administrative area.
- 3.6. The Norfolk and Suffolk Brecks Landscape Character Assessment (2013) focuses on The Brecks landscape, and is not entirely applicable to this proposal as the Brecks area lies outside of the scope of this proposal. Information and reference may, however, wish to be drawn from the report if and where appropriate.
- 3.7. Section 4.2.1.4 is concerned with principal visual receptors. It is felt that 4D category (soft roads) should be scoped in in the same capacity as Public Rights of Way for assessment of visual impacts.
- 3.8. Paragraph 1163 page 321 states that the onshore study area for the LVIA will be based on geographical 'buffer' distances of 5km for the substation, 2km for the cable relay and 500m for the cable route. Paragraph 1212 states that Zones of Theoretical Visibility (ZTV) will be calculated in order to identify viewpoints and assess visual impacts of the substation and cable relay scheme components. Looking at Ordnance Survey data it is not foreseen that the ZTV would extend extensively, if at all, beyond the pre-defined LVIA study area, particularly for the substation. However, the applicant may wish to consider whether a wider study area is required based on ZTV and ground-truthing for the cable relay, particularly if this is to be proposed in the vicinity of the Broads National Park or the AONB.
- 3.9. 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](mailto:david.white.etd@norfolk.gov.uk)



## 4. Minerals and Waste

4.1. Minerals and waste comments are as follows:

4.2. 3.5.1.6 – Local planning policies and designations

This section does not refer to the adopted Norfolk Minerals and Waste Core Strategy and Development Management Policies DPD or the Minerals and Waste Site Specific Allocations DPDs. These minerals and waste planning policy documents form part of the development plan and therefore should be referred to. They can be viewed on our website at: [www.norfolk.gov.uk/nmwdf](http://www.norfolk.gov.uk/nmwdf) on the 'Adopted policy documents' page

4.3. 3.2.1.2 Geology

This section should refer to the Mineral Safeguarding Areas (sand and gravel) that underlie the onshore scoping area. The Mineral Safeguarding Area is shown in the adopted Revised Policies Map (Oct 2013) which is available to view on the County Council's website at: [www.norfolk.gov.uk/nmwdf](http://www.norfolk.gov.uk/nmwdf) on the 'Adopted policy documents' page.

The onshore scoping area also includes safeguarded operational, permitted and allocated sand and gravel extraction sites which should be referred to in this section. Policy CS16 of the adopted Minerals and Waste Core Strategy is relevant. Norfolk County Council has produced Mineral Safeguarding Guidance which outlines the measures needed to ensure that non-mineral development on Mineral Safeguarding Areas within Norfolk complies with adopted policy on the safeguarding of mineral resources. The Guidance is available to view on our website at: <https://www.norfolk.gov.uk/-/media/norfolk/downloads/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/recycling-minerals-and-waste-planning/aggregates-sand-gravel-and-carstone.pdf?la=en>

4.4. Should you have any queries with the above minerals and waste comments please contact Caroline Jeffery (Principal Planner) on 01603 222193 or email [caroline.jeffery@norfolk.gov.uk](mailto:caroline.jeffery@norfolk.gov.uk)

## 5. Lead local Flood Authority

5.1. The County Council have reviewed the Scoping report and wish to make the following comments.

5.2. It is strongly recommend that any EIA includes Flood Risk Assessments (FRA's) and surface water drainage strategies that 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.

5.3. This supporting information would assess the potential for the development to increase the risk of flooding from the proposal or how surface water runoff through the addition of hard surfaces. It will show how this will be managed to ensure that the development does not increase flood risk on the site or elsewhere, in line with National Planning Policy Framework (paragraph 103).

5.4. 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.

5.5. The County Council welcome that the Scoping Report indicates that Flood Risk Assessments (FRA’s) will be undertaken and it is recommended these will be based on the requirements of the National Planning Policy Framework (NPPF) and in line with Planning Practice Guidance (PPG)

5.6. The County Council also welcome that the applicant indicates that the EIA will include drainage strategies. As such it is recommended that appropriate SUDS features are included in the design assessment of the proposed 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 greater than 2m below ground level),
- the SuDS components used within the management train (source, site and regional control).

5.7. The County Council note the following criteria from the Scoping report and welcome these considerations that are applicable to Flood and Water Management issues.

Proximity to residential properties;

Proximity to Source Protection Zones (SPZ);

Flood risk;

Minimise requirement for complex crossing arrangements, e.g. road, river and rail crossings; and

Avoiding ponds and agricultural ditches;

- 5.8. Further to the criteria mentioned above it is noted the following settlements have historical flooding issues and are likely to be sensitive to disruptions to the wider drainage networks:

North Walsham - Drains to the North east (North Walsham and Dilham Canal) and South West (Skeyton Beck);

Dereham - Drains to the East (via Dereham Stream to Wending Beck);

Necton - Drains to the South (River Wissey).

- 5.9. Generally any proposed cable route will likely cross watercourses within the catchments of the River Ant, the River Bure and the River Wensum and will end up crossing the headwaters of the River Wissey. There are significant 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.
- 5.10. 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. In line with good practice, 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.
- 5.11. The County Council would appreciate the applicant advising 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 team's resources to process. The flood and Water management team are happy to engage in this process prior to application.
- 5.12. Once the potential sites for the Substations and route location for the cables have been finalised the County Council would expect a drainage strategy to assess and justify compliance with the SuDS hierarchy for surface water disposal location. This would include:
- (a) 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.
  - (b) 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.

(c) As a final option, demonstration with evidence that Anglian Water would accept a connection to a surface water sewer.

- 5.13. 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.
- 5.14. The County Council would advise the applicant that the CIRIA SuDS Manual C697 (2007) has recently been updated, report C753 (2015) is now available free on the CIRIA website. It is expected that any information submitted after 12 March 2016 to use the 2015 SuDS Manual.
- 5.15. On the 19<sup>th</sup> 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 County Council highlight that peak river flow climate change allowances should be considered for ordinary watercourses as well as main rivers.
- 5.16. 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>
- 5.17. Should you have any queries with any of the above comments please contact Matt Aitchison (Flood Risk Officer) on 01603 223618 or email [llfa@norfolk.gov.uk](mailto:llfa@norfolk.gov.uk)

## 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.

# Hindolveston Parish Council

Clerk: Mrs Joanna Otte tel 01328 822366  
Little Manor, Thursford Road, Little Snoring, Fakenham, NR21 0JN  
e-mail: [hindolvestonpc@googlemail.com](mailto:hindolvestonpc@googlemail.com)

[environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)

25 October 2016  
Your ref: 161005\_EN010079

Dear Secretary of State,

## Vattenfall Wind Power Ltd

Further to your letter of 5 October please find below the response from Hindolveston Parish Council regarding the information that should be provided in the environmental statement for the application by Vattenfall.

It is requested that due care is taken to protect woodland (especially ancient woodland), meadows and areas that are habitats for wildlife, plants, insects even if these sites do not have special designations.

For instance this would include Roadside Nature Reserves (managed by Norfolk Wildlife Trust) e.g. at Brays Lane in Hindolveston and similar areas near Guestwick leading to Wood Dalling.

Yours faithfully,

*Joanna Otte*

Mrs Joanna Otte



Maritime &  
Coastguard  
Agency

Bay 2/20  
Spring Place  
105 Commercial Road  
Southampton  
SO15 1EG  
UK

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

The Planning Inspectorate  
3D Eagle Wing  
Temple Quay House  
2 The Square  
Bristol  
BS1 6PN  
Email: [environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)

Your ref: 161005\_EN010079  
Our ref:

25 October 2016

Dear Sir/Madam

### **Norfolk Vanguard Scoping Report**

We have now had an opportunity to review the Environmental Impact Assessment Scoping Report for the proposed Norfolk Vanguard Wind Farm projects and would comment as follows:

The Environmental Statement should supply detail on the possible the impact on navigational issues for both commercial and recreational craft, viz.

Collision Risk  
Navigational Safety  
Visual intrusion and noise  
Risk Management and Emergency response  
Marking and lighting of site and information to mariners  
Effect on small craft navigational and communication equipment  
The risk to drifting recreational craft in adverse weather or tidal conditions  
The likely squeeze of small craft into the routes of larger commercial vessels.

A Navigational Risk Assessment will need to be submitted in accordance with MGN 543 (and MGN 372) and the MCA Methodology for Assessing the Marine Navigation Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI). This NRA should be accompanied by a detailed MGN 543 Checklist which can be downloaded from the MCA website.

It is noted that traffic data had been collected between September 2012 and April 2014 and that a further 28 day traffic survey (AIS, radar and visual observations) will be conducted to ensure data is up to date. This is supported.

MGN 543 Annex 2 requires that hydrographic surveys should fulfil the requirements of the International Hydrographic Organisation (IHO) Order 1a standard, with the final



HM Coastguard



INVESTORS  
IN PEOPLE | Silver

An executive agency of the  
Department for  
**Transport**

data supplied as a digital full density data set, and survey reports 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.

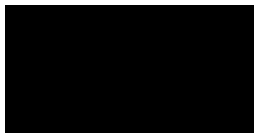
Particular attention should be paid to cabling routes and where appropriate burial depth for which a Burial Protection Index study should be completed and, subject to the traffic volumes, an anchor penetration study may be necessary. If cable protection are required e.g. rock bags, concrete mattresses,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

The radar effects of a wind farm on ships' radars are an important issue and the effects, particularly with respect to adjacent wind farms on either side of a route, will need to be assessed on a site specific basis taking into consideration previous reports on the subject available on the MCA website.

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 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.

Yours faithfully,

A solid black rectangular box used to redact the signature of Nick Salter.

Nick Salter  
Offshore Renewables Advisor  
Navigation Safety Branch



**Hannah Pratt**  
**Senior EIA and Land Rights Advisor**  
3D Eagle Wing  
Temple Quay  
House  
2 The Square  
Bristol, BS1 6PN

**SENT VIA  
EMAIL**

October 28<sup>th</sup> 2016

**Your ref: 161005\_EN010079**

Dear Miss/Mrs Pratt

**Application by Vattenfall Wind Power Ltd for an Order Granting Development Consent for the Norfolk Vanguard Offshore Wind Farm –Scoping consultation**

Thank you for seeking the Forestry Commission's advice about the scope of the Environmental Statement.

As I am sure you are aware we are non-statutory consultees on planning applications in relation to development within 500 meters of ancient woodland.

Having looked at the Scoping Report it does provide maps of ancient woodland in the onshore search area including those designated as SSSIs. We would hope that these will be avoided by careful routing, however what is not clear from the current report (it may be in one which we haven't had sight of) is how these irreplaceable habitats will be protected during the cabling process if it is required to route through or under them. Whilst it may be possible to require compensatory habitat for newer woodland/plantations it is impossible to recreate ancient woodland.

The Forestry Commission would normally refer developers to the technical information set out in Natural England and Forestry Commission's [Standing Advice on Ancient Woodland](#) which sets out Government policy on Ancient Woodland and to the information on policy set out below, this may be passed to the developer if they don't have it already, however, the majority of this is aimed at housing developers, but does help to reinforce the importance of ancient woodland.

Yours sincerely

Corinne Meakins

**East & East Midlands**  
Santon Downham  
Brandon  
Suffolk  
IP27 0TJ

[eandem@forestry.gsi.gov.uk](mailto:eandem@forestry.gsi.gov.uk)

Tel: 01842 815544  
Fax: 01842 811309

Area Director  
David Bole

## Summary of Government policy on ancient woodland

[Natural Environment and Rural Communities Act 2006](#) (published October 2006).

**Section 40** – “Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”.

[National Planning Policy Framework](#) (published March 2012).

**Paragraph 118** – “planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss”.

[National Planning Practice Guidance](#) – Natural Environment Guidance. (published March 2014)

This Guidance supports the implementation and interpretation of the National Planning Policy Framework. This section outlines the Forestry Commission’s role as a non statutory consultee on “*development proposals that contain or are likely to affect Ancient Semi-Natural woodlands or Plantations on Ancient Woodlands Sites (PAWS) (as defined and recorded in [Natural England’s Ancient Woodland inventory](#)), including proposals where any part of the development site is within 500 metres of an ancient semi-natural woodland or ancient replanted woodland, and where the development would involve erecting new buildings, or extending the footprint of existing buildings*”

It notes that ancient woodland is an irreplaceable habitat, and that, in planning decisions, **Plantations on Ancient Woodland Sites (PAWS) should be treated equally in terms of the protection afforded to ancient woodland in the National Planning Policy Framework**. It highlights the Ancient Woodland Inventory as a way to find out if a woodland is ancient.

[The UK Forestry Standard](#) (3rd edition published November 2011).

Page 24: “Areas of woodland are material considerations in the planning process and may be protected in local authority Area Plans. These plans pay particular attention to woods listed on the Ancient Woodland Inventory and areas identified as Sites of Local Nature Conservation Importance (SLNCIs)”.

[Keepers of Time](#) – A Statement of Policy for England’s Ancient and Native Woodland (published June 2005).

**Page 10** “The existing area of ancient woodland should be maintained and there should be a net increase in the area of native woodland”.

[Natural Environment White Paper “The Natural Choice”](#) (published June 2011)

**Paragraph 2.53** - This has a “renewed commitment to conserving and restoring ancient woodlands”.

**Paragraph 2.56** – “The Government is committed to providing appropriate protection to ancient woodlands and to more restoration of plantations on ancient woodland sites”.

[Standing Advice for Ancient Woodland and Veteran Trees](#) (published October 2015)

This advice, issued jointly by Natural England and the Forestry Commission, is a material consideration for planning decisions across England. It explains the definition of ancient woodland, its importance, ways to identify it and the policies that are relevant to it.

The Standing Advice refers to an [Assessment Guide](#). This guide sets out a series of questions to help planners assess the impact of the proposed development on the ancient woodland. [Case Decisions](#) demonstrate how

certain previous planning decisions have taken planning policy into account when considering the impact of proposed developments on ancient woodland.

[Biodiversity 2020: a strategy for England's wildlife and ecosystem services](#) (published August 2011).

**Paragraph 2.16** - Further commitments to protect ancient woodland and to continue restoration of Plantations on Ancient Woodland Sites (PAWS).

# Necton Parish Council

Parish Office, Necton Community Centre  
13 Tun's Road, Necton. Norfolk. PE37 8EH



Hannah Pratt  
Senior EIA & Land Rights Advisor  
On behalf of the Secretary of State  
By email – [environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)

Parish Clerk & RFO:  
Gabrielle Joyce  
[nectonparishcouncil@gmail.com](mailto:nectonparishcouncil@gmail.com)  
Tel: 01760 721665

28 October 2016

Dear Hannah,

## **Application by Vattenfall Wind Power Ltd for an Order Granting Development Consent for the Norfolk Vanguard Offshore Wind Farm**

Further to your letter by email 5 October 2016, we wish to inform the Secretary of State of the following information we consider should be provided in the environmental statement.

- A comprehensive review of the combined impact of Vanguard and Boreas on the human, environmental and social aspects of the sub-station search area. Whilst this application is considering only Vanguard, it is reasonable to consider that Boreas will be offered a connection to the same National Grid substation and the combined impact must be a consideration in this process.
- The above review must include an assessment of the long-term visual impact on the area, taking into consideration the existing sub-stations at Necton and the wind turbines at South Pickenham and Swaffham. The review must consider the rate of industrialisation of this rural landscape.
- A comprehensive traffic management plan, considering the impact on the A47 particularly between Fransham and Necton junctions, currently a single carriageway with multiple speed limits. The wider impact on this section of the A47 should be considered if Great Yarmouth is the selected port, as this will feed commercial traffic directly onto the A47, given the expectation that enhanced port facilities will provide a fringe benefit to its economy.
- The traffic management plan should also recognise that this section of the A47 lies within an expanding residential area, with approximately 300 new dwellings anticipated in Necton alone over the next 10 years. A sector standard measurement of 6-8 car movements a day per dwelling should be used when calculating impact.
- Construction noise calculations, provided in an easy to understand format, ie. comparison with other similar noise types. This should also cover the length of time noise will be experienced and the mechanisms in place for monitoring, evaluation and a community communication plan that includes advance warning as well as a detailed complaint management schedule with proper accountability and consequence.

Website: [www.nectonparishcouncil.norfolkparishes.gov.uk](http://www.nectonparishcouncil.norfolkparishes.gov.uk)

Necton Parish Council is the sole Trustee of Necton Rural Community Centre.  
Registered Charity No: 304016.





- A clear plan regarding light management during construction and operation. Many of our residents continue to be adversely affected by the shortcomings of the existing wind farm. We would want to see that energy conservation is actively practiced and not just incorporated into proposal documentation. Ideally, a robust system of penalties applied on breach of procedure actively policed by an identified independent organisation.
- Assurances that conditions applied through the planning process on Vattenfall will be transferred to any subsequent owner of any and all parts of the project. Reference is made within the scoping report that the off- and on-shore electrical infrastructure will be sold once built and commissioned.
- A detailed landscaping plan, ensuring best use of the existing land features, such as undulations and woodland copses; to include a timetable, begin at pre-construction stage and be applied alongside construction so that when the works are complete, the selected plant-life has matured.
- A plan detailing how contractors will be selected for the groundworks associated with both the cable route and the sub-station. This plan would include expected standards relating to skills, experiences, licences, etc. of contractors and their sub-contractors. We ask for this inclusion to ensure that the experiences of some local farmers during the cabling of the Dudgeon Wind Farm are not repeated.
- A socio-economic assessment of the 3KM site selection area, which identifies the impact on community infrastructure, local businesses and residents. This assessment must include home-workers as a category and the impact on the local house price index. We would welcome a commitment from the applicant to consider a compensation scheme for homeowners who find their sale prices are adversely affected by the presence of substations. We would wish to understand the enduring economic legacy this development would provide to the sub-station area.
- An assessment of how climate change, human health and natural resources will be affected by this development, to include a focus on the sub-station selection area.
- A detailed report on the consideration of alternative sites for the sub-station, including sites outside the selected area.
- The scoping report provides indicative parameters for the substation footprint at 300m x 250m and buildings height at 20m. We would expect these to be maximum dimensions and indeed we would wish to see a reduction in these dimensions, which we feel is possible in this fast developing sector.

We recognise that this project is of national significance and we agree with the need for such projects, however, we are also very aware of the concerns of a number of our residents who have suffered with light and noise pollution during construction and commissioning of the two existing sub-stations (Dudgeon and National Grid). We would wish that this development learns from previous and provides worthy opportunities for the village and wider community. We look forward to having these wishes respected in an Environmental Statement.

Yours sincerely,

Gabrielle Joyce  
Clerk to Necton Parish Council

Website: [www.nectonparishcouncil.norfolkparishes.gov.uk](http://www.nectonparishcouncil.norfolkparishes.gov.uk)

Necton Parish Council is the sole Trustee of Necton Rural Community Centre.  
Registered Charity No: 304016.





Public Health  
England

CRCE/NSIP Consultations T +44 (0) 1235 825278  
Chilton F +44 (0) 1235 822614  
Didcot  
Oxfordshire OX11 0RQ [www.gov.uk/phe](http://www.gov.uk/phe)

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

Your Ref : 161005\_EN010079

Our Ref : 28213

28<sup>th</sup> October 2016

Dear Hannah

**Re: Scoping Consultation  
Application for an Order Granting Development Consent for the proposed  
Norfolk Vanguard Offshore Wind Farm**

Thank you for including Public Health England (PHE) in the scoping consultation phase of the above application. Our response focuses on health protection issues relating to chemicals and radiation. Advice offered by PHE is impartial and independent.

In order to ensure that health is fully and comprehensively considered the Environmental Statement (ES) should provide sufficient information to allow the potential impact of the development on public health to be fully assessed.

At this point in time, there is no body of evidence conclusively linking wind farms with adverse health effects arising from emissions of chemicals. When operational, windfarms should not produce emissions, pollutants, or waste products. Offshore wind farms are located out to sea, away from members of the public, hence the potential for the public to be affected by any emissions from them is very small. However, there is potential for impacts to arise during the construction and decommissioning phases from the transport of material and equipment (e.g. accidental leaks, spills, and releases). The movement of material off-site has the potential to lead to impacts, if not properly managed (e.g. associated with contaminated land or dredged sediment). PHE would expect the applicant to adhere to best practice guidance during these phases and for them to ensure that potential impacts are assessed and minimised.

PHE provides advice on standards of protection for exposure to non-ionising radiation, including the power frequency electric and magnetic fields associated with electricity power lines and associated equipment. A summary of this advice is provided as a separate annex to this document.

PHE considers that the onus is on the applicant to conduct the assessment of compliance with the referenced advice and policy, and to gather and present the information clearly, leaving no additional analysis necessary on the part of PHE. The assessment should be clearly laid out, either as an identified section of a report which can be read in isolation or as a separate report. In respect of electromagnetic fields, compliance with the ICNIRP guidelines should be highlighted. If it is considered not practicable for compliance to be achieved at all locations accessible to the public, the report should provide a clear justification for this. The report should include an appropriate risk assessment showing that consideration has been given to mitigation measures for acute risks. In relation to possible long-term health effects and precaution, the report should include a summary of compliance with Government policy.

We welcome the promoter's proposal to include a Health Impact Review (HIR) within the ES, which will review the health impact of onshore aspects of the project that will be presented in other chapters (i.e air quality, waste, contaminated land etc).

In terms of the level of detail to be included in an ES, we recognise that the differing nature of projects is such that their impacts will vary. Any assessments undertaken to inform the ES should be proportionate to the potential impacts of the proposal, therefore we accept that, in some circumstances particular assessments may not be relevant to an application, or that an assessment may be adequately completed using a qualitative rather than quantitative methodology. In cases where this decision is made the promoters should fully explain and justify their rationale in the submitted documentation.

The attached appendix outlines generic areas that should be addressed by all promoters when preparing ES for inclusion with an NSIP submission. We are happy to assist and discuss proposals further in the light of this advice.

Yours sincerely

[nsipconsultations@phe.gov.uk](mailto: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<sup>1</sup>. 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<sup>2</sup>.

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.

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)

---

<sup>1</sup> 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>

<sup>2</sup> DCLG guidance, 1999 <http://www.communities.gov.uk/documents/planningandbuilding/pdf/155958.pdf>

(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<sup>3</sup> 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

---

<sup>3</sup> 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)

- 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).

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<sup>4</sup>, 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)**

There is a potential health impact associated with the electric and magnetic fields around substations and the connecting cables or lines. The following information provides a framework for considering the potential health impact.

---

<sup>4</sup> Available from: <http://www.cph.org.uk/wp-content/uploads/2012/08/health-risk-perception-and-environmental-problems--summary-report.pdf>



In March 2004, the National Radiological Protection Board, NRPB (now part of PHE), published advice on limiting public exposure to electromagnetic fields. The advice was based on an extensive review of the science and a public consultation on its website, and recommended the adoption in the UK of the EMF exposure guidelines published by the International Commission on Non-ionizing Radiation Protection (ICNIRP):-

<http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/Publications/Radiation/NPRBArchive/DocumentsOfTheNRPB/Absd1502/>

The ICNIRP guidelines are based on the avoidance of known adverse effects of exposure to electromagnetic fields (EMF) at frequencies up to 300 GHz (gigahertz), which includes static magnetic fields and 50 Hz electric and magnetic fields associated with electricity transmission.

PHE notes the current Government policy is that the ICNIRP guidelines are implemented in line with the terms of the 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](http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/PublicHealth/HealthProtection/DH_4089500)

For static magnetic fields, the latest ICNIRP guidelines (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 as advised by the International Electrotechnical Commission.

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 give reference levels for public exposure to 50 Hz electric and magnetic fields, and these are respectively  $5 \text{ kV m}^{-1}$  (kilovolts per metre) and  $100 \text{ } \mu\text{T}$  (microtesla). 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. Further clarification on advice on exposure guidelines for 50 Hz electric and magnetic fields is provided in the following note on the HPA website:

[http://webarchive.nationalarchives.gov.uk/20140714084352/http://www.hpa.org.uk/Topics/Radiation/UnderstandingRadiation/InformationSheets/info\\_IcnirpExpGuidelines/](http://webarchive.nationalarchives.gov.uk/20140714084352/http://www.hpa.org.uk/Topics/Radiation/UnderstandingRadiation/InformationSheets/info_IcnirpExpGuidelines/)

The Department of Energy and Climate Change has also published voluntary code of practices which set out key principles for complying with the ICNIRP guidelines for the industry.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/37447/1256-code-practice-emf-public-exp-guidelines.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/37447/1256-code-practice-emf-public-exp-guidelines.pdf)

[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/48309/1255-code-practice-optimum-phasing-power-lines.pdf)

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) was then set up to take this recommendation forward, explore the implications for a precautionary approach to extremely low frequency electric and magnetic fields (ELF EMFs), and to make practical recommendations to Government. In the First Interim Assessment of the Group, consideration was given to mitigation options such as the 'corridor option' near power lines, and optimal phasing to reduce electric and magnetic fields. A Second Interim Assessment addresses electricity distribution systems up to 66 kV. The SAGE reports can be found at the following link: <http://sagedialogue.org.uk/> (go to "Document Index" and Scroll to SAGE/Formal reports with recommendations)

The Agency has given advice to Health Ministers on the First Interim Assessment of SAGE regarding precautionary approaches to ELF EMFs and specifically regarding power lines and property, wiring and electrical equipment in homes: [http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/Publications/Radiation/HPAResponseStatementsOnRadiationTopics/rpdadvice\\_sage/](http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/Publications/Radiation/HPAResponseStatementsOnRadiationTopics/rpdadvice_sage/)

The evidence to date suggests that in general there are no adverse effects on the health of the population of the UK caused by exposure to ELF EMFs below the guideline levels. The scientific evidence, as reviewed by PHE, supports the view that precautionary measures should address solely the possible association with childhood leukaemia and not other more speculative health effects. The measures should be proportionate in that overall benefits outweigh the fiscal and social costs, have a convincing evidence base to show that they will be successful in reducing exposure, and be effective in providing reassurance to the public.

The Government response to the First SAGE Interim Assessment is given in the written Ministerial Statement by Gillian Merron, then Minister of State, Department of Health, published on 16<sup>th</sup> October 2009: <http://www.publications.parliament.uk/pa/cm200809/cmhansrd/cm091016/wmstext/91016m0001.htm>

[http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_107124](http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_107124)

HPA and Government responses to the Second Interim Assessment of SAGE are available at the following links:

[http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/Publications/Radiation/HPAResponseStatementsOnRadiationTopics/rpdadvice\\_sage2/](http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/Publications/Radiation/HPAResponseStatementsOnRadiationTopics/rpdadvice_sage2/)  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_130703](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_130703)

The above information provides a framework for considering the health impact associated with the proposed development, including the direct and indirect effects of the electric and magnetic fields as indicated 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

## 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<sup>5</sup> is used

---

<sup>5</sup> 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



**Anglian Water Services Ltd**

Thorpewood House  
Thorpewood  
Peterborough  
PE3 6WT

Hannah Pratt  
Senior EIA and Land Rights Advisor  
3D Eagle Wing  
Temple Quay House  
2 The Square  
Bristol  
BS1 6PN

Tel 0345 0265 458  
www.anglianwater.co.uk  
Our ref 00017599

Your ref 161005\_EN010079

1 November 2016

**NORFOLK VANGUARD 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 site. Please find enclosed comments on behalf of Anglian Water.

**General Comments**

Description of the proposed development

Anglian Water is the statutory provider for water and waste water for the development area and as such has waste water 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 Waters assets are available to view at the following address:

<http://www.digdat.co.uk/>

Water Resources - Existing Utilities

It is recognised within the Scoping Opinion that during cable installation there is the potential to impact on water infrastructure. It is important that the applicant is in dialogue with Anglian Water at an early stage as they may be the potential for diversions or the need for improvements. Early engagement will limit any impacts that may arise.

### **Part 3: Onshore - Question 6**

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>

### **Part 3: Onshore – question 8 Search Areas**

As stated above Anglian Water have assets within the search areas identified in the document. At this stage it is not possible for Anglian Water to give specific details regarding potentially affected assets. Once the search areas have been drilled down and further refined Anglian Water will be able to provide more detailed comments and advice.

In paragraph 168 it states that drilling fluid will be used, it is unclear whether there will be a requirement for potable water from Anglian Water during this stage.

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

Anglian Water would welcome further 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 water and wastewater services
- Impact of development on Anglian Water's assets and the need for mitigation

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

Regards

Hannah Wilson  
Planning Liaison Manager



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**



Historic England

EAST OF ENGLAND OFFICE

Ms Hannah Pratt  
The Planning Inspectorate  
3D Eagle Wing  
Temple Quay House  
2 The Square  
Bristol  
BS1 6PN

Direct Dial: 01223 582710

Our ref: PL00045405

1 November 2016

Dear Ms Pratt

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

**EAST ANGLIA VANGUARD OFFSHORE WIND FARM - EIA SCOPING REPORT  
PREPARED FOR VATTENFALL WIND POWER LTD BY ROYAL HASKONINGDHV  
(DOCUMENT REFERENCE: PB4476-102-001) DATED OCTOBER 2016**

Thank you for consulting Historic England on the Environmental Impact Assessment Scoping Report for the East Anglia Vanguard Offshore Wind Farm Project

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



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk







phases of the project - such as the dockside marshalling facility 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 for the Norfolk Vanguard Offshore Wind Farm (Document Reference: PB4476-102-001, dated October 2016), as notified by you in your letter dated 5<sup>th</sup> 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 Vattenfall Wind Power Ltd. are proposing to locate the offshore wind turbines 47km offshore (at the closest point), with an overall generation capacity of 1.8GW, possibly comprising up to 257 turbines with generating capacity of between 7MW and 15MW each. At this stage the foundation design is undecided, but could comprise mono-piles, jackets or gravity base structures. Furthermore, we are aware that the offshore development will comprise two separate areas named "Norfolk Vanguard East" (NV East) and "Norfolk Vanguard West" (NV West). The Scoping Report does not detail proposed locations for up to three Offshore Substation Platforms (OSPs) within the consented offshore array areas and that either four or six electricity export cables will run from the array areas to a landfall location between Happisburgh, Bacton and Walcott. However, a statement in section 1.5.4 (Landfall and provisional offshore cable corridor), states that the minimum (electricity export cable) corridor width of 2km should accommodate cables from both the proposed Norfolk Vanguard and Norfolk Boreas projects. In reference to the latter, we appreciate that the offshore wind farm development called "Norfolk Boreas", which will be the subject of a separate DCO application.



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk





We note that, within Section 1.3.2.6 (Project Design Envelope Principle), the Scoping Report does not offer any particular details regarding layout of seabed infrastructure because the energy generating technology may change. The specifications for further detailed surveys (especially geotechnical surveys) should therefore be left open at this stage. Consequently, we support the approach of adopting a project design envelope that affords the maximum extent of the consent sought by the Applicant; and ensures that as the detailed design of the project is developed, refined and procured within this consented “envelope” prior to construction the marine works can be adapted accordingly. A crucial matter this approach is the commissioning of geophysical and geotechnical surveys to be carried out before works commence, in order to inform turbine array layout (in both proposed offshore development areas) and electricity export route selection. We must stress that the Applicant would need to discuss with us the survey strategy 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 about the use of the term “prior to construction” (as used in the above referenced section).

A fundamental principle must be that survey commissioning, interpretation and report are programmed, so that the eventual engineering design selected for delivery of this project, should consent be obtained, is fully informed and guided by archaeological advice. For example, archaeological advice will be crucial given the statement made in section 1.4.3 (landfall) that Horizontal Directional Drilling (HDD) is likely to be employed from the land above the cliffs into the intertidal zone including the excavation of a cable installation duct pit. Similarly, advice will be highly relevant to inform any offshore cable installation programme that requires trenching to between 1-3m below seabed (section 1.4.6.2) particularly given the proposed route across the southern end of the Smith Knoll and Hearty Knoll sand bank systems off Norfolk.

### **Offshore / The Terrestrial Historic Environment**

It is understood that Vattenfall Wind Power Ltd. are proposing hit landfall for four or six electricity export cables along a stretch of the Norfolk coastline between Happisburgh, Bacton and Walcott. The terrestrial works would include the HDD works within the landfall search area, a cable relay station, onshore cabling (up to 18 cables in six trenches for the HVAC option or 4 cables in two trenches for the HVDC option) and a new electrical substation sited near to the existing Necton National Grid Substation. The final locations for landfall, the relay station and substation sites, and the route of the onshore cabling has not yet been determined. The Scoping Report therefore proposes the EIA would assess defined search areas for each element, focused within the Cable Corridor Search Area running between the Landfall zones to the substation site sectors around Necton.

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



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk



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 is that the proposed landfall between Bacton Green and Eccles-on-Sea, is internationally recognised because it has revealed spectacular evidence of prehistoric human activity. In particular the earliest evidence of human existence in the UK as well as other archaeology - dating back 700,000 years to the Pleistocene-for example the famous hand axes and footprints of *Homo antecessor* found in the area around Happisburgh in 2014.

The landfall area also contains evidence of a more recent and complex historic landscape with a large number of non-designated archaeological sites and areas of archaeological potential. This includes the sites of stretches of Second World War costal defences, medieval and post-medieval banks, Roman field systems, a Bronze Age barrow cemetery and Prehistoric flints scatters. The landfall area also includes a number of designated heritage assets including numerous listed buildings, conservations areas at Bacton and Happisburgh, Happisburgh Manor Registered Park & Garden and the scheduled monuments of Bromholm Priory.

## 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.



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk





Historic England

EAST OF ENGLAND OFFICE

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,



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



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk



*Historic England is subject to the Freedom of Information Act, 2000 (FOIA) and Environmental Information Regulations 2004 (EIR). All information held by the organisation will be accessible in response to an information request, unless one of the exemptions in the FOIA or EIR applies.*



## SUGGESTED QUESTIONS FOR CONSIDERATION: INTRODUCTION

***Q1. Please tell us about any information you can share regarding any or each of the sectors which will help VWPL understand constraints and opportunities associated with identifying the most suitable landfall location within this search area?***

### ***Historic England Comment***

Section 1.6.2 (Stakeholder Consultation) describes that the Evidence Plan Process (EPP) will be undertaken during the EIA to structure technical stakeholder consultation. We therefore make a specific request 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 the EPP as a priority action.

Please also note our comments above with regards to the international importance of Happisburgh. The work of the AHOB project (Ancient Humans of Britain) would be of interest as a starting point to understand the presence of the Cromer Forrest Bed deposits within the area of the landfall..

## SUGGESTED QUESTIONS FOR CONSIDERATION: OFFSHORE

***Q1. Please tell us about further data sources that could be reviewed as part of the site characterisation for each topic?***

### ***Historic England Comment***

Paragraph 676 describes use of previously acquired data e.g. during the Zone Appraisal and Planning (ZAP) exercise for the East Anglia Offshore Wind Farm Zone. Mention is also made of other public records (e.g. UKHO records) as published through geo-spatial data such as "OceanWise". 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. We therefore direct you to obtain geo-spatial data records from the National Record of the Historic Environment and other information as held by Historic England (archive@historicengland.org.uk).

***Q2. Tell us about any other relevant potential impacts for each topic?***

### ***Historic England Comment***

Paragraph 684 states that to determine the "total archaeological resource" with NV East, NV West and along the electricity export cable corridor geophysical surveys and



geotechnical site investigations will be commissioned; we concur with this approach although it is essential that early engagement, as already initiated, is maintained and ideally coordinated through the EPP. The information given in 2.12.2.1 (potential impacts during construction) is useful and we await further discussion based on suitable evidence of how and where Archaeological Exclusion Zones should be employed.

**Q3. Do you agree with the potential impacts that have been scoped out for each topic? If not, please provide details.**

### **Historic England Comment**

The scoping report proposes that the impact upon the setting of offshore heritage is unlikely to be considered significant and has therefore scoped out from the EIA. However, for similar offshore wind farm projects we have seen an assessment on the setting included so that the lack of impact can be demonstrated and proven.

Within paragraph 690 the definition by which the setting of a heritage is assessed if it is to be impacted is taken from Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (Historic England 2015). This definition includes “*visual considerations and other environmental factors such as noise, dust and vibration, spatial associations, and consideration of the historic relationship between places.*” However we find this definition at somewhat odds with the subsequent statement made in paragraph 692 that “*potential impacts of construction of the wind farm upon the setting of offshore heritage assets should be scoped out... As construction activities and additional vessel traffic would occur in the context of one of the busiest shipping channels between south east England and mainland Europe and there is already an influence on the seascape from the existing features of the nearby gas rigs and their service vessels.*”

By way of an example, whilst it is often the case that the setting of individual heritage assets such as known wreck sites are quite often not considered to have a setting as their siting is based on chance alone. Recent studies such as those into the War Channels of the Second World War off East Anglia have shown there is a connection between the seabed area and the site of Second World War shipping casualties. Therefore given the need to include extensive seabed coverage using geophysical survey techniques and other more prescriptive methods it will be possible to elucidate such special features within a wider battlefield context and setting. It is therefore the opinion of Historic England that the setting within the offshore element of this particular topic of Offshore Archaeology and Cultural Heritage is progressed to EIA for additional consideration.



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk



***Q4. Have the relevant potential cumulative impacts been identified? If not, please provide details***

***Historic England Comment***

The statement made in section 2.12.2.1, paragraphs 691, 692 and 695, proposes that the impact from the proposed turbine array upon the setting of the onshore heritage assets should be scoped out due to the distance to the offshore array (based upon the limit of visual significance suggested in the 2005 DTI guidance). Although we note the recommended limit is 35km, we would highlight that ridged criteria such as visual limits cannot necessarily be applied when assessing the significance of heritage assets and the contribution made by their setting (e.g. the contribution that views looking out from the assets make to their overall significance). Such an assessment of significance should instead be a matter of expert judgment of 'what matters and why', framed within a concise narrative description.

Further to this, it is also our understanding that the level of visual impact would depend upon a number of factors - for example the height and size of the turbines and blades, the degree of night time illumination and cumulative factors such as other visible offshore arrays. These details have not yet been finalised and it would be pre-emptive to scope this impact out of the EIA at this stage. It might therefore be appropriate for the Applicant to instead consider assessment regarding the maximum size possible for 15MW turbines and the extent of visibility from selected heritage assets on the adjacent coast during both daylight and any impression of night time illumination, plus cumulative factors with other similar developments.

Within this assessment of setting the Applicant would need to consider Historic Seascape. An assessment of the character of the Historic Seascape is helpful in understanding those historic cultural influences which shape present seascape perceptions across the marine areas and coastal land. This understanding is needed in order to describe and define the level of impact the introduction of another offshore wind farm array would have on the historic seascape. The EIA would need to reference the Historic Seascapae Characterisation (HSC) work by Historic England and with reference to the definition of landscape which is referred to in the UK Marine Policy Statement. Paragraphs 708 and 709 mention the HSC programme, but that text sets out an approach to determine impact to the historic seascape given the proposed development and associated activities, whereas we would encourage the focus to be on determining any change to the historic character and the capacity of the presently perceived historic character to accommodate that change. The historic Seascape is not limited to the setting of onshore heritage and encompasses the land settled by people after the last Ice Age but now submerged, for example 'Doggerland' beneath the North Sea. It also includes material remains from past marine and coastal activity which lie on or beneath the seafloor (e.g. marine archaeology) and the areas of activities that produced those remains, for example historic naval battles or former



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk





maritime trading routes. It should also note modern activities which influence the perception and understanding of Seascape, such as the location of busy shipping channels and existing features of other wind farm arrays, nearby gas rigs and their service vessels.

***Q5. Have the relevant potential transboundary impacts been identified? If not, please provide details***

***Historic England Comment***

The specific reference to cultural heritage associated with wrecks (vessel or aircraft) of non-British, European nationality provides a very limited consideration of this factor which must be developed with a sound methodological approach to determine the nature and substance of any transboundary impacts as relevant to this proposed project.

***Q6. Do you agree with that the proposed approach to assessing each impact is appropriate? If not, please provide details.***

***Historic England Comment***

In reference to how any impact (direct or indirect) might be identified, section 2.12.3 (mitigation) makes very brief reference to Archaeological Exclusion Zones and an archaeological Written Scheme of Investigation (WSI). While this is just a Scoping Report, it is somewhat disappointing that more consideration was not afforded to how a WSI might be tailored to this particular development, with particular reference to the proposed cable landfall location. It is therefore an essential matter that through our involvement in the EPP that every opportunity is taken by the Applicant to develop the outline or draft WSI that will eventually accompany the submission for examination by the Planning Inspectorate. Paragraph 700 explains that the “...WSI will be revised, as and when required, throughout the life of the Norfolk Vanguard project, as new data become available and as aspects of the development evolve post consent.” However, the terms likely to be used in the Deemed Marine Licence(s) within the Development Consent Order (DCO) are likely to require that a WSI is produced and agreed at a specific point in time as a means to ensure consent enforcement. We therefore cannot agree to a constantly revised WSI and we must be clear that any methodological amendment or revision of matters such as AEZs should be addressed through the Method Statements which underpin the WSI.

In terms of the assessment of impacts, the criteria to be used is set out in Tables 1.5 and 1.6. 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



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk



that these should be seen primarily as tools supporting a clearly expressed and non-technical narrative argument. For onshore heritage, the EIA the principles of the NPPF would need to underpin any planning advice in relation to the Historic Environment. The document produced would need to 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.

***Q7. Is there any further guidance relating to each topic that we should be aware of? If so, please provide details.***

### ***Historic England Comment***

A reference is provided for the WSI Model Clauses document published by The Crown Estate, but no reference is given for the "Offshore Renewables Protocol for Archaeological Discoveries" (also published by The Crown Estate, revised edition 2014), which should be included here as a clearly identified and separate matter to be addressed and included within the ES.

### **ADDITIONAL HE COMMENTS: OFFSHORE SECTION**

Section 2.12.4 (Approach To Assessment And Data Gathering) details the proposed programme for summer/autumn 2016 to undertake geophysical survey within NV West and the provisional offshore cable corridor (although data within NV East having been acquired previously for EA FOUR) and geotechnical site investigations across the offshore project area and that such matters have been discussed with Historic England. While we acknowledge that engagement has been initiated with us regarding this survey programme, we request that such matters are incorporated into the Expert Topic Group meetings for the EEP and the role of Historic England is formalised in the Terms of Reference for the EEP Project Steering Group.

### **SUGGESTED QUESTIONS FOR CONSIDERATION: ONSHORE**

***Q1. Please tell us about further data sources that could be reviewed as part of the site characterisation for each topic?***

### ***Historic England Comment***

The Scoping Report has listed the relevant sources to be consulted as part of the EIA. However Table 3.17 states that the data sources used for include the Norfolk Heritage Explorer, but not the Norfolk Historic Environment Record. The NHE cannot be used as an alternative to the NHER for planning purposes as it does not contain the most up-to-date information. The EIA would therefore need to undertake a full search of the NHER to ensure it has considered all appropriate archaeological records.



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk





When considering the impact of works within the landfall zone, we would strongly recommend that the Applicant assess the results of the British Museum's Ancient Human Occupation of Britain project, which carried out extensive surveys and investigations in and around the Norfolk coastline and in particular at Happisburgh. Other recent studies within this coastal zone have included and investigations targeted at examining the submerged palaeolandscape of Doggerland - such as those undertaken by the University of Bradford and University of Birmingham - should also be considered. Consultation and discussion with the project directors (is strongly recommended).

**Q2. Tell us about any other relevant potential impacts for each topic?**

**Historic England Comment**

The EIA should consider the impact upon both designated *and non-designated* on-shore 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 Onshore Scoping Area (for example heritage assets with important long views across the landscape). This should be considered as part of the EIA (e.g. Section 3.8.2.3, Paragraph 1060)

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 Substation and Cable Relay Station. The EIA should assess the magnitude of impact upon the assets and the resulting levels of benefit, loss or harm to significance.

It is imperative that the assessment 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.



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk





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.

**Q3. Do you agree with the potential impacts that have been scoped out for each topic? If not, please provide details.**

#### **Historic England Comment**

Section 1.5 of the Scoping Report makes reference to the type of heritage assets that would be assessed. Some of the terminology used is incorrect and it is unclear whether assets are being scoped out, or if they are just being incorrectly referenced. This needs to be revised accordingly.

For example Section 1.5.7 identifies key principles of the onshore cable route site selection as being to '*avoid proximity to historic buildings; and avoid designated sites*'. It is unclear if the reference to '*designated sites*' refers to the historic environment or ecology, and the use of the phrase '*avoid proximity to historic buildings*' excludes the majority of other heritage assets - e.g. schedule monuments, registered park and gardens, conservation areas, listed buildings, non-designated archaeological sites. The same issues is repeated again in Section 1.5.6 (Paragraph 235) and Section 1.5.8 (paragraph 244)

Similarly, within Section 3.8.2 (Potential Impacts) Paragraphs 1047, 1049 and 1054 talk about setting of built heritage assets and historic landscape only. This is too narrow and needs to consider setting of all designated (and non-designated) heritage assets. It is important to note that buried assets (such as archaeological sites) also have a setting and should not be scoped out of the EIA.

In terms of non-designated heritage assets the EIA should note and assess that these assets also have a setting and it should be highlighted 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 out of foundations or remediation of contaminants is required - and therefore this should be considered as part of the EIA.

***Q4. Have the relevant potential cumulative impacts been identified? If not, please provide details***

Please see our comments above

***Q5. Do you agree with that the proposed approach to assessing each impact is appropriate? If not, please provide details.***

Please see our comments above

***Q6. Is there any further guidance relating to each topic that we should be aware of? If so, please provide details.***

***Historic England Comment***

There is only one mention in the entirety of the Scoping Report of the National Planning Policy Framework (NPPF). The NPPF is the core planning policy within which the terrestrial historic environment is assessed - e.g. through the concepts of significance, benefit and harm - and this should be strongly referenced throughout the scoping Report. There is similarly no mention of the Ancient Monument and Archaeological Areas Act 1979, which pertains to works effecting scheduled monuments or the Planning (Listed building and Conservation areas) Act 1990.

In terms of guidance, the EIA should make full reference to the NPPGF Planning Practice Guidance and the Good Practice Advice Notes produced by Historic England - in particular *GPA 3: The Setting of Heritage Assets*. Guidance detailing geophysical survey, geo-archaeology and the assessment of the marine historic environment is also available.

***Q7. Do you agree with the proposed extent of the study area for the individual topic? If not, please provide details***

- Please see our comments above



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk



**Q8. Please tell us comments for each topic regarding the Search areas and sectors for the following project infrastructure:**

- Please see our comments above
  - Land-fall Search Area (Figure 1.3)
  - Substation Search Area (Figure 1.4)
  - Cable Corridor Search Area (Figure 1.5); and
  - Cable relay station search are (Figure 1.6)

**ADDITIONAL COMMENTS: OFFSHORE SECTION**

The scoping report has provided maps and plans of the Scoping area. However the historic environment map (Page 296) is too small in scale and not useful in assessing the scope of the EIA. Larger scale maps, broken down into sections (as is provided for Ancient Woodland and SSSIs) should be included. It would also be useful to have a map similar to that shown on Page 55 for designated heritage assets within area of Substation and a map similar to that shown on Page 60 for designated heritage assets within area of the Cable Relay Station.

Paragraph 1064 makes reference to the *Historic England Regional Science Advisor* and this should be updated to *Historic England Science Advisor (East of England)* and there are a number of references to guidance and other publications by 'English Heritage' (e.g Paragraph 1068) and these should be updated to 'Historic England' through-out the document.



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749  
HistoricEngland.org.uk





www.broadland.gov.uk

Ask for : Mr M. Rooke  
Direct dial : 01603 430571  
Email : matthew.rooke@broadland.gov.uk  
Our ref : MR/EIA Vattenfall  
Your ref : 161005\_EN10079  
Date : 2 November 2016

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

Dear Ms Pratt

**Scoping consultation: Application by Vattenfall Wind Power Ltd. for an Order Granting Development Consent for the Norfolk Vanguard 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 5 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 for each part of the report. This response includes answers to questions that relate to Broadland District Council's interests in the proposals.

Part 1 Q3. – *Any information that will help the applicant understand constraints & opportunities associated with identifying the most suitable cable route within the search area?*

Conservation Areas – Blicking, Aylsham, Reepham, Cawston, Foulsham, Heydon and Heydon & Salle – extent of each is shown on the Council's web-site.  
County Wildlife Sites – various sites which Norfolk Wildlife Trust manage.  
SSSI – Booton Common, Marsham Heath and Whitwell Common.  
Historic Parkland – Blickling Hall Estate, Heydon Park, Hackford Hall, Salle Park and Booton Hall  
Commons – various sites.  
Ancient Woodlands – various sites.

Part 3 Q1. - *Please tell us about further data sources that could be reviewed as part of the site characterisation for each topic?* - Broadland District Council website – List of all Conservation Areas within the district.

Q2. *Tell us about any other relevant potential impacts for each topic?*

Cultural Heritage - The National Trust is a significant land owner in the onshore cable route search area; I assume that they have been consulted on the scoping report.

Onshore inter-relationships - A significant gas pipeline runs to the north of Blickling Hall and runs to the west of Heydon then south of Foulsham and beyond into Breckland's area - National Grid will comment on these aspects.

Q3. *Do you agree with the potential impacts that have been scoped for each topic? If not please provide details.* - Broadland Conservation Areas have not been plotted or referred to. Also see answer to Part 1 Q 3.

Q4. *Have the relevant potential cumulative impacts been identified? If not please provide details.* - The District Council is aware of another significant offshore wind farm that is currently being consulted upon locally known as the Hornsea 3 Wind Farm by Dong energy, (PINS Ref. 161026\_EN10080-000064) which has a very similar onshore search area with a grid connection to the southwest of Norwich. The cumulative impact of these proposals should be fully assessed under this scoping report.

Q5. *Do you agree the proposed approach to assessing each impact is appropriate? If not please provide details.* - No comment.

Q6. *Is there any further guidance relating to each topic that we should be aware of? If so please provide details.* - No comment.

Q7. *Do you agree with the proposed extent of the study area for the individual topic? If not, please provide details?* - In my opinion the cable corridor search area should run further north to avoid the extensive areas of historic and landscape designations/interests identified.

Q8. *Please tell us your comments for each topic regarding the search areas and sectors for the following project infrastructure:*

- i) *Landfall search area* - No comment
- ii) *Substation search area* - No comment
- iii) *Cable corridor search area* - There are extensive areas of historic and landscape designations/interests within the search area and there is a significant concern about whether a suitable cable route could be found which does not have an adverse effect on these or the setting of these.
- iv) *Cable relay station search area* - No comment

Other comments:

3.5.1.6 Para. 914 - Incorrectly refers to Broadland District as 'Broadlands District'

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

  
**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](mailto:planningconsultation@coal.gov.uk)  
[www.gov.uk/coalauthority](http://www.gov.uk/coalauthority)

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

**[By Email: [environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)]**

Your Ref: EN010079

02 November 2016

Dear Ms Pratt

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

**The Norfolk Vanguard Offshore Wind Farm Project Development Consent Order – EIA Scoping Consultation**

Thank you for your letter of 5 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**



Ms H Pratt  
The Infrastructure Planning Commission  
Temple Quay House  
2, The Square  
Bristol  
BS1 6PN

**Our ref:** AE/2016/120952/01-L01  
**Your ref:** 161005\_EN010079  
**Date:** 2 November 2016

Dear Ms Pratt

**APPLICATION BY VATTENFALL WIND POWER LTD FOR AN ORDER GRANTING DEVELOPMENT CONSENT FOR THE NORFOLK VANGUARD OFFSHORE WIND FARM.**

**PLANNING ACT 2008 (AS AMENDED) AND THE INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2009 (AS AMENDED) – REGULATIONS 8 AND 9. SCOPING CONSULTATION REQUEST**

Thank you for your EIA Scoping consultation letter dated 5 October 2016 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 biosecurity and invasive species, the use of Horizontal Directional Drilling (HDD) and protection of water resources, 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.

**Biosecurity and Invasive Species**

Baseline data sources appear to be thorough for the various ecological receptors and we note that an Ecological Management Plan is proposed at paragraph 967. However, the EIA should include a detailed assessment of invasive non-native species present in water bodies and/or sensitive receptors along the cable route, together with a management plan to prevent the spread of these species (and any disease they carry) to uninfected receptors. For example, the cable route is shown to pass through different parts of the River Wensum where American signal crayfish and crayfish plague are present, whilst our native, protected white –clawed crayfish are present elsewhere in the river. If the disease spreads our native species will be threatened with extinction in this river catchment. Biosecurity is therefore, of the utmost importance and should be included in the EIA. We would expect that within the EIA the cable route would be assessed for the presence of invasive species and associated diseases detailing how



spread will be prevented

### **HDD**

HDD is mentioned at paragraph 834 as an embedded mitigation process and potential risks are discussed at paragraph 873. Although HDD is a recognised method to address sensitive locations there are residual risks to the environment which should be addressed in detail in the EIA. The potential risks to both groundwater resources and surface water bodies from leakage of drilling fluid should be addressed with sufficient information provided in the EIA to provide assurance that the risks to the water environment are fully understood and can be addressed through appropriate measures. Assessments of the use of HDD at each sensitive location should include site and ground investigations, risk assessment, appropriate mitigation and remediation.

### **Water Resources**

#### **River Basin Management Plan**

We note that in paragraph 870 the River Basin Management Plan (RBMP) has been used to identify relevant water bodies but there is no further discussion relating to it. The EIA should include consideration of the actions detailed in the RBMP to maintain and improve our water bodies in compliance with WFD, identifying opportunities for enhancement within the relevant site boundaries.

#### **Temporary river crossings**

The Scoping Report does not appear to mention the use of temporary river crossings or bridges. If any temporary crossings are to be introduced it should be addressed in the EIA giving due consideration of the objectives of the WFD and the actions outlined in the RBMP.

### **Groundwater and Contaminated Land**

We agree with the approach to identifying land contamination as set out in Section 3.2. The EIA should identify any areas of land contamination found within the cable corridor and provide a Preliminary Risk Assessment for each area. The Preliminary Risk Assessment should provide sufficient information for the risks to the water environment to be fully understood and include site investigation and remediation measures. In respect of water resources, we agree the approach outlined in the Scoping Report. We recommend that the cable corridor does not cross or touch any areas designated as source Protection Zone 1.

### **Flood Risk**

Paragraph 226 of the scoping report submitted states that the landfall area has been divided into three sectors as follows: L1 - Bacton Green to Rudram's Gap; L2- Rudram's Gap to Beach Road; and L3 – Beach Road to Bush Estate. The frontage covered by L1, L2 and L3 is managed by North Norfolk District Council, with the exception of the area south of Cart Gap. Landfall work south of Cart Gap or within the Bacton/Walcott flood zone area will require a Flood Risk Activity Permit for Landfall activities within 16 metres of a sea defence or activity that could obstruct/divert flood water within a flood zone. The scoping report recognises that much of the cable route passes through flood zone 1 and has noted that where it passes through zones 2 or 3, an FRA is required. The FRA should be sufficient to provide an understanding of the

flood risk and how it affects this type of development together with an appropriate Management Plan.

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](mailto:barbara.moss-taylor@environment-agency.gov.uk)

## Richard Kent

---

**From:** Mary Runciman [REDACTED]  
**Sent:** 02 November 2016 16:05  
**To:** Environmental Services  
**Cc:** Hannah Pratt  
**Subject:** Norfolk Vanguard EN010079

Dear Sirs

Please find below the response from Fulmodeston Parish Council, North Norfolk District

Although this parish is right on the edge of the scoping area, we feel it appropriate to comment as this parish has the Dudgeon cable corridor running through it and therefore has first hand experience of the impact of such infrastructure projects.

1. The proposed corridor crosses one of the most rural parts of the U.K. There are very few major roads with the majority being small single carriageway roads connecting many very small villages, hamlets and farms which are totally unsuitable for the use of construction vehicles. The Dudgeon project has caused significant damage and destruction of such rural roads and verges together with disruption to local traffic over a prolonged period.
2. The proposed landfall is at a point where the coastline is subject to significant erosion with considerable loss of land each year to the sea and many acres and sometimes homes lost in bad weather such as during the storms of December 2013. The Bacton Gas Terminal is an area subject to high National Security and so would preclude landfall at that point. The rest of the coast is an area of high tourism and therefore unsuitable for the proposed large onshore converter station(s) due to the visual impact in an otherwise very rural location.
3. The scoping corridor then proposes to cross through open extremely rural countryside with an ancient landscape in parts barely touched by time. Accessibility is often difficult and unsuitable for major construction activities. Norfolk was the most densely populated part of England in medieval times and as a consequence there is significant archaeology everywhere. In the case of the Dudgeon cable corridor, significant finds were made such as a very large Anglo Saxon burial site sited on an Iron Age settlement site which was adjacent to a Roman site. In the same area were finds relating to every historical period from Neolithic to the present. None of which had shown up on pre construction surveys or were in an area previously thought to contain such settlements - just one example. Norfolk Vanguard will definitely come across such areas and will cause delays and unforeseen costs.
4. There are numerous water courses to cross, historic parklands with the area between Aylsham and Foulsham being especially rural. Aylsham is an expanding market town therefore development opportunities will limit where the corridor can go as will historic landscapes, parklands and woodland to the east.
5. Dong's Hornsea three project is also being developed at the same time - each company working to a similar time frame without seemingly considering the cumulative impact. It is imperative that this impact is considered as the crossing point of the two cable corridors somewhere in the Heydon/Salle/Reephram area is not only an area of immense historic and environmental importance but also could potentially necessitate crossing the Sheringham Shoal cable route.
6. The activities of the offshore wind farms contribute nothing to the districts they cross - employment is very limited as large national construction companies are used, jobs require very specific specialisms and the construction, operation and maintenance bases are located in places such as Great Yarmouth where the facilities required to operate such wind farms are located and are nowhere near the cable corridors.
7. Many statutory consultees in these very rural areas simply do not have the manpower or funding to deal with such large infrastructure projects which makes consideration and monitoring of environmental impacts difficult thus allowing the potential of long term

environmental damage to occur. Lack of funding also makes enforcement of breaches very difficult.

8. The Government/DECC had supposedly recognised this several years ago with the promise that radial connections of wind farms were not only unnecessarily environmentally damaging, but also not economic with large international renewable companies each working to their own agenda rather than cooperating which would be much more for the National good. At the moment the numerous offshore wind farm projects are for the good of the commercial companies involved - they are not building them for the good of the country. They should be working together to bring the power onshore in appropriate areas, easily accessibly to the National Grid and which are already industrialised, rather than crisis crossing one of the last bastions of rural England such as Norfolk.

9. Consultation at this stage has been very short. Information events for the public were only held last week giving Parish Councils and other bodies little time to consider the information presented. It would also appear that Vattenfall are expecting those of us on the ground to do their work for them by asking us to provide much environmental information - it appeared they had little knowledge or insight of the area they propose to cross.

10. As a Parish Council, we have had no contact from Vattenfall and one of the biggest problems in North Norfolk is lack of Broadband speed making it almost impossible to download large documents such as the EIA scoping report. Parish Councils affected must be supplied with hard copies of future documentation please, plus it should be remembered that many rural parish councils are very small, not all Councillors have computers and we certainly do not have the funds from our very small precepts to print copies.

As a consequence of the above points this Parish Council would not support the development of the Norfolk Vanguard Wind Farm.

Yours faithfully  
M Runciman  
For Fulmodeston Parish Council

Sent from my iPad

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---

**Great Yarmouth Borough Council's comments in response to Norfolk Vanguard Offshore Wind Farm Environmental Impact Assessment Scoping Report Consultation**

Dear Miss H Pratt,

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

Policy CS6 of the adopted Great Yarmouth Core Strategy states that the local economy should be supported through port related development proposals and by encouraging a greater presence of higher value technology and energy-based industries in the borough. Therefore, it is welcomed that Great Yarmouth is considered as an option for the primary base for operation and maintenance facility for the Norfolk Vanguard Offshore Wind Farm, particularly as Great Yarmouth has been recognised as a national Centre for Offshore Renewable Engineering (CORE) with the aim of supporting businesses who wish to invest in offshore wind in the local area.

The Scoping Report considers the potential impacts of the Norfolk Vanguard Offshore Wind Farm on particular species and designated nature conservation sites and identifies the Greater Wash Marine pSPA, which runs from Bridlington in Yorkshire, wrapping around the coast to Great Yarmouth as being of particular importance. This pSPA encompasses a number of ornithological areas, including the foraging areas for the Little Terns from the Great Yarmouth and North Denes SPA colony.

The Scoping Report also draws attention to the potential risk that the movement of operations and maintenance vessels may have on the Little Terns foraging area as they cross between the primary base port<sup>1</sup> and the Norfolk Vanguard Windfarm area, with the possible risk of species displacement. It should be noted that as well as Little Terns there are also colonies of Common Terns at Breydon Water and Scroby Sands which forage in the rivers, harbour and approximately 30km out to sea.

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 where mitigation measures are necessary, should be informed by the Council's Natura 2000 Sites Monitoring and Mitigation Strategy.

However it should be noted that recent correspondence with Natural England states that "*Natural England does not consider that the current proposals for new housing and commercial and industrial*

---

<sup>1</sup> Great Yarmouth is considered as an option for the primary base for the operations and maintenance facility for the Norfolk Vanguard Offshore Wind Farm

*redevelopment of the port area of Great Yarmouth as set out in the adopted Great Yarmouth Local Plan Core Strategy (2015) are likely to have a significant impact on the Outer Thames Estuary pSPA.<sup>2</sup>*

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,

Kind Regards

Emily Smith

---

<sup>2</sup> Quote taken from letter dated 19<sup>th</sup> October 2016 sent from Natural England The Outer Thames Estuary SPA Team to Great Yarmouth Borough Council. Letter that can be shared with potential developers stating Natural England's stance on proposed development in the region of Great Yarmouth.

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

Your ref: EN010079  
Our ref: 4.2.1.5554

HSE email: [NSIP.applications@hse.gov.uk](mailto:NSIP.applications@hse.gov.uk)

FAO Hannah Pratt  
The Planning Inspectorate  
Temple Quay House  
Temple Quay,  
Bristol  
BS1 6PN

Dear Ms Pratt

1 November 2016

**PROPOSED NORFOLK VANGUARD OFFSHORE WIND FARM (the project)  
PROPOSAL BY VATTENFALL WIND POWER LIMITED (the applicant)  
INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2009 (as amended) – Regulations 8 and 9**

Thank you for your letter of 5<sup>th</sup> 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 table below illustrates the major hazard sites and pipelines which may be affected by the onshore elements of the Norfolk Vanguard offshore wind farm. The actual sites and pipelines will depend on the final route of the export cables.

HSE Ref.	Site/Pipeline Operator	Operator Ref.	Site/Pipeline Name
<b>Sites</b>			
H4432	Bacton Storage Company		Bacton
H0467	ENI Hewett Ltd		Bacton
H3535	Interconnector (UK) Ltd		Bacton
H0176	National Grid PLC		Bacton
H0124	Perenco UK Ltd		Bacton
H0501	Shell UK Exploration and Production		Bacton
H0230	BPA		North Walsham
H3355	Allied Grain		Aylsham
H0776	Bernard Matthews		Oulton
H3374	Bernard Matthews		Great Witchingham
H0773	Bernard Matthews		Great Fransham
H3365	Payne Bros (East Anglia)		Beeston
<b>Pipelines</b>			
9584	RWE nPower plc		Bacton to Great Yarmouth

7446	National Grid Gas	1705	5 Feeder Bacton to Yelverton
7450	National Grid Gas	1709	Bacton to Roudham Heath
8371	National Grid Gas	2648	Bacton to Kings Lynn Comp.
12238	National Grid Gas	2739	27 Feeder Bacton to Kings Lynn
7462	National Grid Gas	1720	4 Feeder Bacton to Great Ryburgh
7456	National Grid Gas	1714	Bacton to Hanworth
7455	National Grid Gas	1713	Trunch to Walsham
7454	National Grid Gas	1712	Bacton to Trunch
7409	National Grid Gas	1668	East Dereham to Wells
8372	National Grid Gas	2649	4 Feeder Great Ryburgh to Kings Lynn Comp.
8377	National Grid Gas	2654	Brisley to Bushey Common
7413	National Grid Gas	1672	Bushey Common to Saham Grove
7378	National Grid Gas	1637	Silfield Tee to East Dereham
7414	National Grid Gas	1673	Saham Grove to Swaffham

There are other, non-Major Hazard pipelines in the area (possibly operated by BPA and GPSS) that may also be affected by the proposed NSIP.

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 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,



Dave Adams  
 CEMHD4 Policy





Marine  
Management  
Organisation

Marine Licensing  
Lancaster House  
Hampshire Court  
Newcastle upon Tyne  
NE4 7YH

T +44 (0)300 123 1032  
F +44 (0)191 376 2681  
[www.gov.uk/mmo](http://www.gov.uk/mmo)

Your reference: 161005\_EN010079  
Our reference: DCO/2016/00002

Hannah Pratt  
Senior EIA and Land Rights Advisor

By email only

**2 November 2016**

Dear Hannah,

## **RE: Vanguard – EIA Scoping Consultation**

Thank you for your email dated 5 Oct 2016, consulting the Marine Management Organisation (the “MMO”) on the EIA Scoping report submitted by Vattenfall Wind Power Ltd.’s in respect to an application for development consent under the Planning Act 2008 (the “2008 Act”) to Norfolk Vanguard Offshore Wind Farm.

### **The MMO’s role in Nationally Significant Infrastructure Projects**

The MMO was established by the Marine and Coastal Access Act 2009 (the “2009 Act”) to make a contribution to sustainable development in the marine area and to promote clean, healthy, safe, productive and biologically diverse oceans and seas.

The responsibilities of the MMO include the licensing of construction works, deposits and removals in English inshore and offshore waters and for Welsh and Northern Ireland offshore waters by way of a marine licence<sup>1</sup>. Inshore waters include any area which is submerged at mean high water spring (“MHWS”) tide. They also include the waters of every estuary, river or channel where the tide flows at MHWS tide. Waters in areas which are closed permanently or intermittently by a lock or other artificial means against the regular action of the tide are included, where seawater flows into or out from the area.

In the case of Nationally Significant Infrastructure Projects (“NSIPs”), the 2008 Act enables Development Consent Order’s (“DCO”) for projects which affect the marine environment to include provisions which deem marine licences<sup>2</sup>.

As a prescribed consultee under the 2008 Act, the MMO advises developers during pre-application on those aspects of a project that may have an impact on the marine area or

<sup>1</sup> Under Part 4 of the 2009 Act

<sup>2</sup> Section 149A of the 2008 Act



those who use it. In addition to considering the impacts of any construction, deposit or removal within the marine area, this also includes assessing any risks to human health, other legitimate uses of the sea and any potential impacts on the marine environment from terrestrial works.

## **Norfolk Vanguard Offshore Wind Farm**

Norfolk Vanguard Wind Farm is located approximately 47km off the Norfolk coast. It will have a generation capacity of 1.8 GW. The farm comprises two distinct areas, Norfolk Vanguard East (NV East) and Norfolk Vanguard West (NV West) and will be connected to the shore by offshore export cables installed within the provisional offshore cable corridor.

The MMO has reviewed the consultation documents received 5 Oct 2016 and sets out our initial comments below. The MMO reserves the right to make further comments on the Project throughout the pre-application process and may modify its present advice or opinion in view of any additional information that may come to our attention.

## **Comments on the Norfolk Vanguard Offshore Wind Farm Statutory Consultation**

### **1. General comments**

Where possible, operation and maintenance activities should be assessed within the Environmental Statement (ES). This includes use of jack-ups for repair or component replacements, cable repair, repainting of structures, as well as removal of fauna/flora from monopiles. This list is not exhaustive and we recommend liaising with the MMO through the Evidence Plan Process to ensure the operational phase of the project is fully assessed.

#### **1.1. Benthic**

Overall the approach to assessing the benthic impact appears appropriate. However, a lot of emphasis has been placed on the use of Zone Environmental Assessment (ZEA) data; more emphasis should be placed on the information within the proposed order limits. Expansion on this information will be required in the ES, however, the MMO notes that the use of other sources of data has been proposed and a list of appropriate sources is given in table 2.9. The MMO will continue to engage with the applicant on this issue through the evidence plan process.

#### **1.2. Fisheries**

Overall the key species of importance and potential impacts to fish have been correctly identified. However, the following points should be addressed in the ES.

The data gathered points to the presence of appropriate habitat for sand eels, while themapped spawning areas/nursey grounds for sand eels point to the presence of the species within the area. An assessment of the effects on sand eel including its habitats is therefore required within the ES. We recommend that the aggregate industry sand eel habitat assessment (Marine Space 2013) criteria be considered as an approach during the Environmental Impact Assessment (EIA) to assess habitat significance.

We recommend that any fisheries data taken from previous surveys that is used in the EIA includes all relevant information such as; dates and times of surveys, locations, gears used, mesh size, duration of tow/soak times. Any limitations of the data sources used should be presented in the ES.

For the ES, we recommend a longer time series of data (e.g. up to ten years' worth of fisheries landings data) is used rather than the seven years proposed, to be consistent with applications of a similar nature. Requests for additional data can be submitted to the MMO for consideration. The ES should explain how landing weights have been calculated and we recommend showing the average landed weights broken down by International Council for Exploration of the Sea (ICES) rectangle. This will show any variation in abundance per rectangle for each species.

Table 2.13 uses ICES data to establish the average catch per unit effort per hour for individuals for species recorded in International Bottom Trawl Surveys (IBTS) within the ICES. Having reviewed the table, we believe that the data for both greater sand eel and Raitt's sand eel may be incorrect. For example we have looked at ICES' IBTS data for 2011-2016 for sand eels and the largest catch per unit effort shown in the number per hour is 6.21 for greater sand eel in rectangle 34F2 in Quarter 3 of 2015. This will need to be corrected in the ES, and the MMO will engage with the applicant through the evidence plan process and provide relevant advice as to the accuracy and appropriateness of data.

Point 453 refers to the creation of new habitat through installation of the turbines and associated scour protections. However, it is reasonable to consider this is modification of existing habitat (rather than creation of new habitat), particularly when considering that such structures will be removed at decommissioning, and this should be accurately reflected in the ES.

The key fish and shellfish species in the project area are listed in Table 2.15. Spawning and nursery grounds overlapping the offshore project area (where known) are shown in Figures 2.8 to Figure 2.13. This is important information that will need to be included in the ES.

The MMO would also recommend that the International Herring Larval Survey (IHLS) data is reviewed and considered to determine if any potential underwater noise could impact herring. The extent to which herring larvae may be impacted by sediment plumes for example, should also be considered.

The following information source may provide useful information to help support the ES. The Eastern Sea Fisheries Joint Committee Fisheries Mapping Project Charts, compiled in 2010 may provide some useful fishing boundary information for inshore fishing activities. The data is available from [www.eastern-ifca.gov.uk/about/fisheries/fisheries-mapping-project](http://www.eastern-ifca.gov.uk/about/fisheries/fisheries-mapping-project)

### 1.3. Coastal Processes

The scoping report is overall considered adequate and has scoped in the correct impacts. The following points should be noted and addressed through the EIA.

However, wave data presented in the scoping report is contradictory to paragraphs 297, 298 and 299. Wave data or wind-stress in the form of wave or wind roses are not used to show the measured wave climate and proportions of wave height, periods or directions across the Vanguard East and West Sites. Vanguard East is shallower on the extreme east flank, where depths may be down to 15m. Under moderate storm conditions bed sediments will be suspended under orbital wave currents, with a potential to generate scour. With various water depths involved the effects of orbital wave currents and their potential to create scour in these shallower locations will need to be assessed in the ES.

Ebb tidal asymmetry, the existence of sandbanks and a continuous net flux of bedload transport through the Vanguard site has been noted in paragraph 308. Where cable routes cross the banks, the impact on the banks in terms of hiatus or disruption to sediment transport processes will need to be considered. The ability to install and maintain cable, the potential use of cable protection, and the need for seabed preparation and the resulting impacts should also be considered.

A detailed assessment of the construction footprint and degree of coverage is needed to assess the likely scale and area of impact of deposition of sediments from construction activities.

Note: - Should disposal be required, the Applicant should engage with the MMO on OSPAR disposal site characterisation and sampling requirements.

#### **1.4. Underwater Noise**

Overall the approach outlined in the scoping document is appropriate and the MMO agrees with the impacts scoped in.

Early engagement with the MMO is encouraged to ensure that any noise modelling utilising site-specific physical parameters and project specific detail is appropriate and fit for purpose.

When considering “best available information” it is important to use latest scientific literature. The Applicant is advised to review use of literature and attention is brought to recently published guidelines by NOAA (2016) for updated impact criteria.

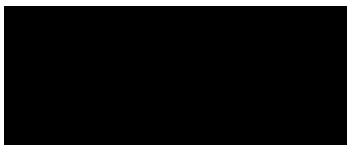
### **Conclusion**

Overall, the applicant has identified and scoped in relevant impacts with the exception of those noted above.

Additionally early engagement with the fishing industry (both local, national and internationally) and those involved in nearby aggregate dredging is recommended. In particular, the formation of a commercial fisheries working group would be advantageous. Meetings could be co-ordinated with other wind farm meetings to be less disruptive. The MMO is prepared to provide further advice on local stakeholders should the applicant request.

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

Yours Sincerely,



Alan Gibson  
Marine Case Manager  
D 0208 0265070  
E [alan.gibson@marinemanagement.org.uk](mailto:alan.gibson@marinemanagement.org.uk)

Copies to:  
Eleanor Nobel MMO  
Ross Hodson MMO  
Cefas Seal Team

Secretary of State  
c/o The Planning Inspectorate  
3/18 Eagle Wing  
Temple Quay House  
2 The Square  
Bristol  
BS1 6PN



Your ref: 161995\_EN010079

2<sup>nd</sup> November 2016

Dear Secretary of State

**INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT)  
REGULATIONS 2009 SI 2263 (as amended) (the EIA Regulations)  
PROPOSED NORFOLK VANGUARD OFFSHORE WINDFARM (the project)  
PROPOSAL BY VATENFALL WINDPOWER LIMITED (the Applicant)**

Thank you for requesting our advice on the Norfolk Vanguard 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 East Anglia ONE and East Anglia THREE Environmental Impact Assessments (EIA) and Environmental Statements (ES). 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, be able to communicate, in their ES, the confidence in their predictions on potential impacts.

Whilst we appreciate the Applicant's intention to identify appropriate mitigation for the impacts predicted to occur as a result of Norfolk Vanguard 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 relocation of development away from sensitive areas is limited. We highlight that whilst appropriate mitigation measures may be identified in relation to project design, for some receptors more radical mitigation measures may require consideration and/or compensation. 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 Norfolk Vanguard, we note that the information and detail provided is limited and is focussed on the high-level of 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 the PEI to present sufficient detail such that an assessment of the Applicant's approach to EIA can be identified.

## **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**

The Norfolk Van Guard 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: , the Hornsea OWF projects and the East Anglia OWF 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-windfarm 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 advice in relation to the scoping report in the **Annexes 1-3**.

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 in-combination impacts with other sea defence projects at the landfall location.
- Potential in-combination terrestrial impacts along the export cable route with that of Hornsea Project 3

If you have any questions regarding the above comments or want to discuss further any of the issues we have raised please contact Alex Thompson [alex.thompson@naturalengland.org.uk](mailto:alex.thompson@naturalengland.org.uk) at Natural England.

Yours sincerely

Alex Thompson

Marine Lead Advisor – Major Casework  
Natural England



## **ANNEX 1: INTRODUCTION (Chapter 1)**

### **EIA Methodology**

#### *Defining Magnitude of Impact and Sensitivity of Receptor*

260-264: It is proposed to assess impacts associated with the construction, operation and decommissioning of Norfolk Vanguard by identifying the sensitivity of each receptor and the magnitude of each effect and combining both metrics together through a matrix analysis to determine impact significance. Effect magnitude will be defined via the extent, duration, frequency and change relative to the baseline, and receptor sensitivity will be determined through the adaptability/tolerance, recoverability and value/importance of each receptor.

We advise that the ES should include a clear description of how each of the categories for extent, duration and frequency are defined and similarly for the sensitivity categories of vulnerability, recoverability and value. The ES should also include a description of how the various combinations of frequency, duration, extent and reversibility of effects have been combined to reach the final prediction of effect magnitude. Similarly, a discussion should be included as to how the various combinations of receptor sensitivity, probability of interaction and magnitude of effect have been combined to reach the final determination of impact significance.

The magnitude and sensitivity scores which contribute to the final impact assessment should be presented for each of the receptors included in the assessment. This should be supported by appropriate references to scientific literature. Where conclusions are based on expert judgements this should be clearly described and discussed in the text. This would add confidence in the validity of the determinations and any subjective decisions or professional judgements based on experience that are made by the applicant are transparent and clear.

Furthermore, we highlight the importance and difficulty of establishing the uncertainty associated with data. The level of uncertainty/confidence associated with each significance assessment should be discussed based on the nature of evidence used and how this evidence was used to determine impact significance.

There might be effects or receptors for which the proposed assessment approach may not be suitable. This should be assessed on an effect/receptor basis. Where a different approach is chosen this should be clearly justified and the approach fully explained within the application.

#### *Evaluation of Significance*

266 - 268: Within the ES, impacts should be quantified, where reasonable to do so, and discussed alongside qualitative information to present the most accurate conclusion of risk to that particular receptor. In some cases, impacts are likely to have more quantified estimates and it is advised that this detail is incorporated into the application, with reference to any studies or expert judgements undertaken. Again, it is important that there is detailed presentation of the uncertainty associated with any quantitative estimates to establish confidence in conclusions drawn.

#### *Cumulative Impacts*

275: We welcome the Applicant's intention to agree the approach to cumulative impact assessment (CIA) with consultees. This will form an important component in assessing the true potential impacts of the development of these two projects.

## **ANNEX 2: OFFSHORE (Chapter 2)**

### **Marine Geology, Oceanography and Physical Processes**

#### *Approach to assessment and data gathering*

321: Natural England welcomes the commissioning of a number of detailed surveys to address gaps in the existing survey coverage and to provide up-to-date data with which to inform the ES.

### **Marine Water and Sediment Quality**

#### *Water Quality*

326: The data presented in support of this chapter is over 20 years old (circa 1992), where available more recent data should be used to inform the assessment.

342: We advise that more information to support the conclusion that the Norfolk Vanguard sites would not release contaminants or have associated impacts on water quality during operation activities should be presented.

### **Benthic and Intertidal Ecology**

#### *Benthic Ecology*

404 - 405: An assessment of the amount of potential maintenance work likely to be required across the lifetime of the development should be presented within the Environmental Statement. This should also include the likely maintenance requirements associated with all project cabling, including inter-array cabling. Such an assessment could be informed by the experiences at other constructed wind farm developments which, whilst unlikely to represent directly comparable results, should enable a more informed assessment of maintenance requirements. These requirements, as assessed, should then be tied to the associated potential environmental impact such as associated benthic impact as a result of a need for increased protection or stabilisation material.

#### *Approach to data gathering and assessment*

We acknowledge that the Applicant engaged Natural England to review geophysical and benthic sampling survey methodology before commencing the survey work. We would welcome ongoing consultation on survey methodologies as part of the Evidence Plan process.

### **Marine Mammals**

464: It is not clear from this paragraph whether the site specific surveys referred to are ornithology surveys where marine mammal data have been collected or if they are marine mammal only surveys.

466: There appears to be a typo in the last-but-one bullet point. Presumably this is meant to include harbour seal. Also, if the timeline allows, SCANS III survey data should be incorporated.

478: We advise that the impact assessment should take account of the Southern North Sea pSAC for harbour porpoise, not just the North Sea Management Unit. The information provided by the applicant in relation to potential effects on the pSAC from construction noise will form the basis for the Habitats Regulations Assessment (HRA). We also advise that the approach to assessing impacts on the Southern North Sea pSAC should be discussed and agreed with the relevant

statutory bodies during the Evidence Plan process to ensure the most appropriate and up to date methods and information are incorporated.

482: Figures 2.14 and 2.15 appear to show grey and harbour seal mean at sea usage estimates to be 0 – 1.0 individuals per km<sup>2</sup> at the array and 0 – 5 individuals per km<sup>2</sup> in the provisional offshore cable corridor for both species, not 0 – 0.2 individuals per km<sup>2</sup> as stated here.

497: We advise that the assessment of vessel interaction should also take account of the increase in the number of vessel movements in the area and the associated increase in underwater noise, as well as increased likelihood of collision.

499: Natural England is satisfied that given the distance to the nearest seal haul out at landfall is at least 10km; disturbance at seal haul outs is unlikely to be a significant effect. However, disturbance at seal haul outs from vessel transit to and from operational ports is not considered here and should be before disturbance at seal haul outs can be scoped out of the assessment.

500: Natural England considers changes to water quality should remain scoped in to the EIA until further information is known about the project parameters. The foundation type and installation methods for cables for example are not currently known for the project and therefore the volume of sediment that could be mobilised and the resultant sediment plumes are unknown.

508: Natural England is satisfied that physical barrier effects during operation may be scoped out of the assessment.

509: Natural England is satisfied that electromagnetic fields may be scoped out of the assessment of impacts to marine mammals.

510: Natural England is satisfied that changes to water quality during operation may be scoped out of the assessment.

## **Offshore Ornithology**

The format of our response in this section is to respond to the Applicant's questions posed in paragraph 288.

*Please tell us about further data sources that could be reviewed as part of the site characterisation for each topic?*

We consider that the aerial survey data that have been collected for the old East Anglia FOUR site and 4km buffer and the additional aerial survey data collected for the Norfolk Vanguard East site provide sufficient data for characterising the Vanguard East site, as the entire offshore wind farm footprint and 4km buffer have been covered for a minimum of two years. For the Norfolk Vanguard West site and 4km buffer we consider the existing aerial survey data and the proposed continuation of surveys will provide a sufficient baseline for site characterisation provided the surveys are continued for the expected 24 months.

The Scoping Report does not provide an indication of which data will be used to characterise the offshore cable corridor area. Whilst we note that the East Anglia Zone survey data will likely cover this area, this data are now fairly old (between 5-8 years old). We note that the provisional cable corridor for Norfolk Vanguard overlaps the Greater Wash pSPA. Therefore we advise that the data used for the Greater Wash pSPA could be used for characterisation assessments. We note that impacts are most likely to be displacement of red-throated diver and common scoter due to the presence of cable laying vessels during the laying of the cable.

556: The Applicant states that further data will be available from SOSS and the RSPB tagging studies. We would also advise that data from other tagging studies e.g. FAME/STAR and the DECC SEA funded tagging study and lesser black-backed gulls from Alde-Ore Estuary could also be used to establish connectivity of relevant colonies with the Vanguard offshore wind farm sites.

*Tell us about any other relevant potential impacts for each topic?*

536 – 538: We agree that the potential impacts from construction section currently covers disturbance and displacement and indirect impacts through effects on habitats and prey species for both within the offshore wind farm sites and the offshore cable corridor.

539: We would advise that the laying of the offshore cable not only has the potential to disturb prey species and habitats, but the presence of cable laying vessels has the potential to disturb the birds themselves, especially more sensitive species such as red-throated diver and common scoter (which are proposed qualifying features of the Greater Wash pSPA). It is not clear whether this potential impact will be considered within the disturbance and displacement potential impact highlighted in the Scoping Report. As the provisional cable corridor overlaps with the proposed boundary of the pSPA, we advise that this potential impact should be considered.

540: Indirect impacts through effects on habitats and prey species with the offshore wind farm sites during construction focuses on disturbance from noise generated by piling. We recommend that consideration is also given here to the potential for increased sediment from construction of the turbine foundations and laying of cables within the arrays themselves.

Any indirect impacts on habitat and prey for all assessment stages (construction, operation, decommissioning) should be linked to the relevant habitat and prey assessment chapters - fish and shellfish ecology, benthic ecology and water and sediment quality assessments.

Regarding operational potential impacts, consideration could also be given to direct habitat loss from individual turbine location within the project footprint, although it is acknowledged that this likely to be small.

*Do you agree with the potential impacts that have been scoped out for each topic? If not, please provide details.*

Table 2.21: Summarises the impacts relating to offshore ornithology:

We agree with the scoping in of indirect impacts through effects on habitats and prey within the provisional offshore cable corridor during operation. However, for decommissioning this would depend on whether the cables are left in situ or are removed. If they are removed, then we would advise scoping in, as is the case for construction. Note this is contradictory with paragraph 540 of the potential impacts during construction (Section 2.9.2.1), which states: '*...Disturbance effects on prey are likely to be short term, temporary and localised around the cable placement. The resultant indirect impact on any foraging birds (if present) is likely to be indiscernible and it is therefore proposed that this impact should be scoped out from further consideration within the EIA.*'

We agree with the scoping in of the collision risk during operation and decommissioning, whilst there is the possibility of bird collision with vessels during construction and decommissioning, this is likely to be very minor, with the main impact from collision being with the operational turbines.

We agree that the main barrier effect of the project will be whilst it is operational and should therefore be scoped in.

*Have the relevant potential cumulative impacts been identified? If not, please provide details.*

549: We agree with the potential cumulative impacts that have been identified by the Applicant, namely: collision risk and barrier effects which impact upon migration routes and prey species. However, consideration should also be given to cumulative displacement impacts.

We also note that other offshore windfarms within the former East Anglia Zone could be of relevance in terms of potential for overlap in construction periods and hence advise that cumulative construction impacts are considered.

*Have the relevant potential transboundary impacts been identified? If not, please provide details*

551: We agree with the Applicant's approach to assessing potential transboundary impacts and welcome building upon the work undertaken by East Anglia ONE and East Anglia THREE to identify potential receptors and stakeholders.

*Do you agree with that the proposed approach to assessing each impact is appropriate? If not, please provide details.*

553 – 558: We note that the information provided on the proposed approach to assessing each impact is at a high level and in many cases further detail could be provided regarding the actual approach to the assessments. For example, for collision risk assessments we agree that the assessments should be carried out using the Band (2012) model. We would also recommend that information is provided around Band model options, avoidance rates, flight height variations etc. and would suggest that these are aspects agreed during the Evidence Plan process.

We advise that whilst the predicted potential effects of displacement on sensitive species will be assessed using matrices to compare varying levels of displacement with varying levels of additional mortality, further information could be provided on what sensitive species might be assessed. We also recommend the inclusion of an example matrix along with reference to relevant guidance on this assessment approach.

*Is there any further guidance relating to each topic that we should be aware of? If so, please provide details.*

We recommend that the Applicant reviews the following publications when producing the Environmental Statement. We note however, that the Applicant should review any relevant guidance documents that are published between this response and the submission of the Environmental Statement:

- Marine Scotland Science review of avoidance rates (Cook et al. 2014: Cook, A.S.C.P., Humphreys, E.M., Masden, E.A. & Burton, N.H.K. (2014) The Avoidance Rates of Collision Between Birds and Offshore Turbines. Scottish Marine and Freshwater Science Volume 5 Number 16. Available from: <http://www.gov.scot/resource/0046/00464979.pdf>).
- SNCB joint response to Cook et al. (2014): NRW, NIEA, NE, JNCC & SNH (2014) Joint Response from the Statutory Nature Conservation Bodies to the Marine Scotland Science Avoidance Rate Review.
- NE/JNCC (2012) displacement note: Joint NE & JNCC Interim Advice Note: Presenting information to inform assessment of the potential magnitude and consequences of displacement of seabirds in relation of Offshore Windfarm Developments

- 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>).
- 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](https://www.bto.org/sites/default/files/u28/downloads/Projects/SOSSMAT_Instructions.pdf)  
And: the SOSS Migration Assessment Tool, available from: <https://www.bto.org/science/wetland-and-marine/soos/projects>

*Additional comments on offshore ornithology*

Table 2.20: It appears that the Birds of Conservation Concern (BoCC) listing from BoCC 3 (Eaton et al. 2009) has been used. This listing has since been updated by BoCC 4, we advise the Applicant to see Eaton et al. (2015), available online at: <http://britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf>

534: Whilst no other SPAs overlap the site or cable corridor we advise that sites are included that may have potential connectivity with the project site (i.e. Flamborough, Alde-Ore and Bass Rock). We advise that these sites are discussed and agreed during Evidence Plan Process.

535: Regarding the Greater Wash pSPA, the Applicant states that the *pSPA encompasses the foraging areas of common, Sandwich and little terns from a number of colonies, including The Wash SPA (for little and Sandwich)*. We note that the species in brackets should be the little tern and not Sandwich for the Wash SPA. We advise the Applicant to consider the draft conservation advice package for the Greater Wash pSPA, available at: <https://www.gov.uk/government/publications/marine-conservation-advice-for-special-protection-area-the-wash-uk9008022/the-wash-spa-site-information>

## **ANNEX 3: ONSHORE (Chapter 3)**

### *Onshore Ornithology*

Natural England note that the scoping assessment for the ornithological receptors associated with terrestrial and coastal habitats appears to be based on the previous winter and passage bird survey scoping report on which Natural England provided comment under our DAS in September 2016. Natural England's comments are provided for consideration in Appendix 1.

984: We advise that more detail is provided on breeding birds. We note that the desk based review of ornithological receptors conducted by the Applicant in August 2016, but advise that more detail from this study is included in the scoping report.

993: We advise that sites with breeding bird features are listed along with the sites identified with passage and wintering ornithological interest features.

Table 3.14: Passage and over wintering birds are listed as red on BoCC 4 (Eaton et al. 2015), along with their relative abundance (high, medium, low), which has been based on the data from the BTO UK Bird Atlas 2007-2011. We advise the inclusion of the same information for breeding birds for the scoping area.

Table 3.15: When listing the UK bird species of principal importance (excluding BoCC red list species), which may be present within the onshore scoping area, we recommend the Applicant clarifies whether this list considers species that may be present during just the passage and wintering period, or whether it also includes species that may be present during the breeding season as well.

We also recommend the inclusion of a list of UK habitats of principle importance recorded within the onshore scoping area which have suitability to support breeding and passage and wintering bird species.

### *Internationally Designated Sites*

The onshore cable route and infrastructure has the potential to affect five European sites and several nationally designated sites. 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.

### ***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. 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 further concern relates to invasive species. It appears that the cable route will also need to cross several rivers and hydrological systems, such as the river Glavin. 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.

A qualifying species of the Wensum SAC is Desmoulin's land snail. This species is likely to be present throughout the area surrounding the Wensum, being particularly prevalent in locally designated greenspace nearby such as Lenwade and Witchingham Common. 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 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 and Potter and Scarning Fens East Dereham 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 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.

***Broadland SPA, Ramsar and North Norfolk Coast SPA:***

Broadland SPA is at some distance from the cable route and proposed infrastructure sites and therefore we would not expect direct effects to this site, or to any of its component SSSIs. However the proposal could result in loss of habitat that is functionally linked to these European sites and in disturbance to birds using this habitat during construction. Therefore we advise that a survey to ascertain whether there is any functionally linked habitat in the vicinity of the route is carried out to inform the need for more detailed survey (if necessary). 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). We advise that wintering wigeon and bean goose are qualifying species of the Yare Broads and Marshes SSSI.

***Paston Great Barn SAC/SSSI*** also lies close to the beginning of the cable route (near Bacton). This site is designated as the only known example of a maternity roost of barbastelle bat in a building. We advise that bat surveys will need to be carried out all along the route and draw your attention to this particular site, which will need to be considered in the context of the Habitats Regulations Assessment if there is potential to affect foraging features of its qualifying species.

***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 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, Honey Pot 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](http://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 Beetley and Hoe Meadows CWS, which is adjacent to the SSSI of the same name. More information on all the county wildlife sites in Norfolk can be found here: <http://www.nbis.org.uk/CWS>.

#### *Cumulative Impacts*

Natural England has particular concerns regarding the cumulative effects of the onshore Vattenfall landfall site when considered in-combination with the proposed Hornsea 3 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 landfall presents a complicated scenario for the cable route when considered alone, but this is of further concern due to the proximity of the two proposed cables at the beginning of the onshore sections. 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. Furthermore new rights have now commenced on the stretch of coastal path within the vicinity of Bacton. 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 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.

**APPENDIX 1: Natural England's response to the Applicant regarding the EIA Ornithological Desk based assessment: Onshore passage and wintering birds' for Norfolk Vanguard OWF under DAS 2093**

Date: 09 September 2016  
Our ref: 178639  
Your ref: PB4476.003.024



Kathy Wood  
Vattenfall Windpower Ltd  
1 Tudor Street  
London  
EC4Y 0AH

**BY EMAIL ONLY**

Dear Kathy

**RE: PB4476.003.024 Review of 'EIA Ornithological Desk based assessment: Onshore passage and wintering birds' for Norfolk Vanguard OWF under DAS 2093**

Thank you for requesting a review of the above document as part of the Norfolk Vanguard evidence plan process. Natural England provide the following advice under our Discretionary Advice Service.

**Summary**

- Natural England recognises that this is not an assessment, but a scoping report to determine survey requirements.
- It appears that some SSSIs and County Wildlife sites are missing from the report, we advise that these are added.
- Natural England recommends that surveys start in October, rather than the proposed November, to ensure the whole winter period is covered.
- We would normally advise that at least two years of survey are undertaken to ensure that inter-annual variation is taken into account. However, we accept that there is limited value in a second year of winter surveys if the presence of geese and swans will be determined by the crop regime. We therefore advise that together with any survey and/or WeBS data, information about predicted crop patterns at the time of the proposed work are taken into account.

**Detailed Comments**

*Role of Document*

1. Natural England advises that the title of the document is referred to as a scoping report, as its purpose seems to be to determine what detailed information needs to be collected to inform an EIA.
2. Paragraph 7 states that "if habitats are suitable for breeding, passage and wintering bird surveys, surveys over autumn/winter 2016 and spring 2017 would be required." However, as

the document is focussed on passage and wintering birds, Natural England advises that this document is expanded to cover breeding bird interest. Alternatively, if a separate scoping document has been produced covering breeding birds then reference to that should be made in this document.

3. Natural England advises that the key area for passage and wintering birds is likely to be the area near North Walsham with birds from the Broadland SPA using functionally linked land. We note (in paragraph 8) that no specific surveys are proposed until a detailed onshore cable route corridor is known, and that the purpose of this scoping report is to determine whether surveys may be required for passage and wintering birds over autumn/winter 2016 and spring 2017.
4. Natural England has recently commissioned maps for pink footed goose functionally linked land, and are willing to make these draft maps available (attached with this letter). These maps will be useful to inform the location of more detailed ground-truth surveys. This survey information, together with the consideration of the planned cropping regime within the route corridor, can then be used to avoid significant impacts on passage and wintering birds.
5. Paragraph 10 states that the breeding bird surveys, if required, can be undertaken during summer 2016, should this be 2017? We note that there is no planned desk based study for breeding birds at this time and recommend that some desk study, such as contacting local biological record centres and consulting local bird reports, is carried out to help determine the focus of the breeding bird surveys, in addition to considering the cable route.
6. We advise that the EIA scoping document considers impacts on County Wildlife Sites or BAP species. Also, the potential impact of the loss of non-designated breeding/roosting habitat should be considered before finalising the route. The cumulative effect of a number of small losses of hedgerow and other breeding/roosting habitat should be avoided wherever possible, and best practice of mitigating for any loss of breeding habitat should be undertaken. Therefore, it is likely that some targeted breeding bird surveys may be necessary.

#### *Scope of document*

7. We note that the desk study identifies designated sites within 5km of the scoping area. For some species (e.g. pink footed geese) Natural England considers that an appropriate Impact Risk Zone, may be up to 25km from a designated site. However, due to the nature of this proposal, because there is no significant permanent loss of habitat and due to the temporary nature of the impacts of the operations, we are content that a 5km buffer around SPAs and 1km around SSSIs is appropriate in this case.
8. We advise that as well as focussing on nationally and internationally important interest features, consideration is also given at the earliest possible stage to County Wildlife Sites, BAP priority species and species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). We note that there are plans to conduct the impact assessment through a review of what? and habitat assessment walkover surveys when more information about the project is available. However, information on Section 41 species may be obtainable through the local Biological Records Centre and through the BTO Birdtrack tool. Having this information will help determine a cable route that minimises the amount of breeding habitat affected.

#### *Relevant legislation*

9. Natural England advises that reference to The Natural Environment and Rural Communities (NERC) Act 2006 is included in this section. The NERC act introduced a new duty for all public bodies to have regard to the conservation of biodiversity.

#### *Data sources*

10. We advise that other data sources including local biological records should be included in this document.

#### *Methodology*

11. As stated above, an Impact Risk Zone of 5km is considered appropriate given the temporary nature of the impacts. Whilst we advise that the foraging range of pink footed geese are up to 25km, it is unlikely that the proposed development will result in permanent displacement.
12. Natural England agrees with a survey buffer of 1km for SSSIs given the nature of the proposed development. However we would question whether all SSSIs have been identified. We also recommend that any County Wildlife Sites are also identified and considered.

#### *Screening of ornithological risk areas*

13. We recommend that all the SSSIs likely to support ornithological interest are reviewed and included in the report. We also advise that County Wildlife Sites are considered, particularly with reference to breeding birds.

#### *Identification of ornithological survey locations*

14. As stated above, we suggest that the functionally linked land maps (attached) can also be used to determine the location of the surveys for passage and wintering birds.

#### *Baseline environment*

15. There are a number of SSSIs missing from Table 3.1 and therefore missing from the subsequent section on ornithological interest features in section 3.3. These include sites that are constituent parts of Broadland SPA. For example, Broad Fen, Dilham SSSI and Ant Broads and Marshes SSSI are both missing. We advise that all SSSIs within the scoping area are checked, and any missing SSSIs are included.
16. Mattishall Moor SSSI is included as having no winter/passage features although the site supports wintering snipe.
17. We assume the SSSIs that are designated for breeding birds will be considered in a separate scoping exercise for breeding birds, but advise that this should be made clear. The other SSSIs that are designated for breeding birds include: River Wensum SSSI (breeding birds), Dereham Rush Meadow SSSI (breeding & wintering birds), River Nar SSSI (breeding birds), Cawston & Marsham Heaths SSSI (breeding heathland birds & wintering hen harrier), Westwick Lakes SSSI (wintering waterfowl), Booton Common SSSI (breeding birds), Badley Moor SSSI (breeding birds) Dillington Carr, Gressenhall SSSI (Assemblage of breeding birds mixed:



lowland open water, woodland), Swanton Novers Wood SSSI (Aggregations of breeding birds: honey buzzard).

18. Paragraph 36 states that there are six designated sites containing ornithological interest features to passage or wintering birds. As Mattishall Moor SSSI is missing, as are the constituent SSSIs to Broadland SPA this figure is incorrect.
19. Table 3.2 is incorrect as it omits Mattishall Moor SSSI, it would also be more appropriate to include some of the constituent SSSIs that form Broadland SPA

#### *Ornithological Interest Features*

20. Table 3.3 - the population counts used for Broadland SPA are not from the SPA citation, which is available to download from:  
<http://publications.naturalengland.org.uk/publication/5310905098901248>
21. The counts presented here look to have come from the 2001 SPA Review (Stroud et al. 2001), which have no legal status, and therefore the counts from the citation should be used here.
22. Paragraph 47 states Broadland SPA when it should be Cawston and Marsham Heaths SSSI.
23. Paragraph 49 refers to Broadland SPA when it should be Westwick Lakes SSSI.
24. In the list of designated sites Mattishall Moor SSSI should be included. It is in an area of fen and marshy grassland and supports reed bunting and regularly records wintering snipe.
25. The summary should include the correct number of designated sites. Also consideration should be given to any County Wildlife Sites and presence of any BAP priority species.

#### *Screening of ornithological risk*

26. Section 3 is missing some designated sites and interest features that may affect passage and wintering features. Also as stated previously risk areas should include breeding bird interest.
27. The area of land around Mattishall Moor SSSI needs to be included as a risk area, and this should be included with Table 4.1

#### *Proposed Ornithological Surveys*

28. Paragraph 75 should include Mattishall Moor SSSI and the component SSSIs within Broadland SPA.
29. Paragraph 80 suggests one survey per month from November 2016 to March 2017, Natural England would recommend surveys start in October to ensure the whole winter period is covered. We would normally require at least two years of survey to ensure that inter-annual variation is taken into account. However, we accept that there is limited value in a second year of winter surveys if the presence of geese and swans will be determined by the crop regime. It

is therefore recommended that together with any survey, information about predicted crop patterns at the time of the proposed work are taken into account.

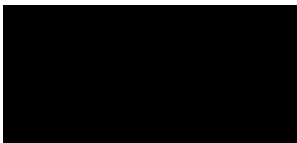
30. The same comments apply in relation to paragraph 85, but should also relate to Mattishaw Moor SSSI.

*Conclusions and further work*

31. It should be recognised that this is not an assessment, but a scoping report to determine survey requirements. The ornithological risk areas should include any missing SSSIs and any County Wildlife sites.
32. This scoping report mentioned breeding bird interest but did not adequately cover the survey requirements. It is recommended that this scoping report is expanded to cover breeding birds, or an assessment considering impacts on breeding birds. It is recommended that the assessment is not restricted to breeding birds from designated sites, but also includes consideration of the impacts of loss of un-designated breeding habitat along the proposed route.

If you have any queries on the advice given please contact me (details given below).

Yours sincerely



Alex Thompson  
Marine Lead Advisor – Major Casework  
East Midlands Area Team  
Email: [alex.thompson@naturalengland.org.uk](mailto:alex.thompson@naturalengland.org.uk)  
Phone: 02080267613  
Mobile: 07557203948

## Richard Kent

---

**From:** Stephen Vanstone <Stephen.Vanstone@thls.org>  
**Sent:** 02 November 2016 11:33  
**To:** Environmental Services  
**Cc:** Nick Dodson  
**Subject:** RE: EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation

Good morning Hannah,

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 some structures such as OSP's lie outwith the actual wind farm turbine layout, then additional risk assessment should be undertaken.

### Risk Mitigation Measures

- We consider that the wind farm(s) 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.
- Appropriate buffer zones surrounding the two IMO Deep Water Routes should be fully considered.
- 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:** Environmental Services [<mailto:environmentalservices@pins.gsi.gov.uk>]  
**Sent:** 05 October 2016 13:37  
**To:** Navigation  
**Cc:** Thomas Arculus; Nick Dodson  
**Subject:** EN010079 - Norfolk Vanguard Offshore Wind Farm - EIA Scoping Notification and Consultation

Dear Sir / Madam,

Please see the attached correspondence on the proposed Norfolk Vanguard Offshore Wind Farm project.

Please note the deadline for consultation responses is **2 November 2016** and is a statutory requirement that cannot be extended.

Regards

Hannah

Hannah Pratt  
Senior EIA and Land Rights Advisor  
Major Applications and Plans

The Planning Inspectorate, 3D Temple Quay House, Temple Quay, Bristol BS1 6PN

Helpline: 0303 444 5000

Email: [environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)

Web: [www.gov.uk/government/organisations/planning-inspectorate](http://www.gov.uk/government/organisations/planning-inspectorate) (The Planning Inspectorate)

Web: [www.infrastructure.planninginspectorate.gov.uk](http://www.infrastructure.planninginspectorate.gov.uk) (National Infrastructure Planning)

Twitter: [@PINSGov](https://twitter.com/PINSGov)

This communication does not constitute legal advice.

Please view our [Information Charter](#) before sending information to the Planning Inspectorate.

\*\*\*\*\*

This email and any files transmitted with it are private and intended solely for the use of the individual or entity to which they are addressed. If you are not the intended recipient the E-mail and any files have been transmitted to you in error and any copying, distribution or other use of the information contained in them is strictly prohibited.

Nothing in this E-mail message amounts to a contractual or other legal commitment on the part of the Government unless confirmed by a communication signed on behalf of the Secretary of State.

The Department's computer systems may be monitored and communications carried on them recorded, to secure the effective operation of the system and for other lawful purposes.

Correspondents should note that all communications from Department for Communities and Local Government may be automatically logged, monitored and/or recorded for lawful purposes.

\*\*\*\*\*

---

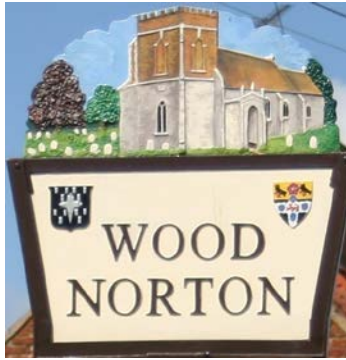
This communication, together with any files or attachments transmitted with it contains information which is confidential and may be subject to legal privilege and is intended solely for the use by the named recipient. If you are not the intended recipient you must not copy, distribute, publish or take any action in reliance on it. If you have received this communication in error, please notify [postmaster@thls.org](mailto:postmaster@thls.org) and delete it from your computer systems. Trinity House reserves the right to monitor all communications for lawful purposes. Receipt of this email does not imply consent to use or provide this email address, or any others contained therein, to any third party for any purposes. The contents of this email are protected under international copyright law. This email originated from the Corporation of Trinity House of Deptford Strond which is incorporated by Royal Charter in England and Wales. The Royal Charter number is RC 000622. The Registered office is Trinity House, Tower Hill, London, EC3N 4DH.

*To save energy and paper please print this email only if you really need to.*

---

**This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>**

---



## WOOD NORTON PARISH COUNCIL

[environmentalservices@pins.gsi.gov.uk](mailto:environmentalservices@pins.gsi.gov.uk)

1 November 2016

Your ref:161005\_ENO10079

Dear Secretary of State,

### **Vattenfall Wind Power Ltd**

I am writing on behalf of Wood Norton Parish Council to convey our response regarding the information that should be provided in the environmental statement for the application by Vattenfall.

We should like it noted that there is a field within the parish which lies immediately to the NW of the buildings comprising Cromes (located about ½ mile E of the main village, on Foulsham Road) which contains important earthworks thought to represent the remains of an earlier settlement of the village.

Wood Norton Parish Council would also like to request that wherever possible there is cooperation amongst companies such as Vattenfall in the sharing of trenches to convey power cables and also of substations, to minimise the disruption such work involves, and to restrict the visual impact to the greatest possible extent.

Yours faithfully,

*Linda Jennings*

CLERK: Linda Jennings

