



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

East Anglia ONE North Offshore Wind Farm

**Relevant Representations of Natural England**

For:

The construction and operation of East Anglia ONE North Offshore Windfarm, a 800 MW Wind Farm located approximately 36km off the Suffolk coast, covering an area of approximately 208km<sup>2</sup>.

Planning Inspectorate Reference: EN010077

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27 January 2020

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# NATURAL ENGLAND'S RELEVANT REPRESENTATIONS IN RESPECT OF EAST ANGLIA ONE NORTH OFFSHORE WIND FARM

Planning Inspectorate Reference: EN010077

## 1. Legislative and Policy Framework

1.1. Natural England is a non-departmental public body established under the Natural Environment and Rural Communities Act 2006 (“NERC Act”). Natural England is the statutory advisor to Government on nature conservation in England and promotes the conservation of England’s wildlife and natural features.<sup>1</sup> Natural England’s remit extends to the territorial sea adjacent to England, up to the 12 nautical mile limit from the coastline.<sup>2</sup>

1.2. Natural England is a statutory consultee:

- in respect of environmental information submitted pursuant to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (‘the EIA Regs’);<sup>3</sup>
- in respect of plans or projects that are subject to the requirements of the Conservation of Habitats and Species Regulations 2017 (the “Habitats Regulations”) which are likely to have a significant effect on European protected sites – that is, sites designated as Special Areas of Conservation (“SACs”) and Special Protection Areas (“SPAs”) for the purposes of the EU Habitats and Birds Directives;<sup>4</sup>
- in respect of proposals likely to damage any of the flora, fauna or geological or physiological features for which a Site of Special Scientific Interest (“SSSI”) has been notified pursuant to the Wildlife and Countryside Act 1981 (the “1981 Act”);<sup>5</sup> and
- in respect of all applications for consent for Nationally Significant Infrastructure Projects which are likely to affect land in England.<sup>6</sup>

1.3. Pursuant to The Conservation of Offshore Marine Habitats and Species Regulations 2017 (the “2017 Regulations”). Under Regulation 28(4) (a) of the 2017 Regulations, where the assessment relates to a European offshore marine site, the competent authority must consult the JNCC (Joint Nature Conservation Committee). Where the assessment relates to a European site (including a European marine site), then the competent authority must consult Natural England, in accordance with regulation 28(4) (b) of the 2017 Regulations.

1.4. It is also the Government’s policy to consult Natural England in respect of sites listed for the purposes of the Convention on Wetlands of International Importance especially as

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<sup>1</sup> NERC Act ss. 1(2), (2) and 4

<sup>2</sup> NERC Act, s.1(3)

<sup>3</sup> Regs. 3(1), 10(6), 9(1), 11(1), 20(3)(g), 22(3)(f), 24(5)(f) of the EIA Regs

<sup>4</sup> Regulation 61 of the Habitats Regulations

<sup>5</sup> Section 281 of the 1981 Act

<sup>6</sup> Planning Act s.42; Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, reg. 3 and sch. 1.

Waterfowl Habitat signed at Ramsar on 2nd January 1971 (“Ramsar sites”) as if they were European protected sites.<sup>7</sup>

- 1.5. The Examining Authority should note that pursuant to an authorisation made on the 9th December 2013 by the JNCC under paragraph 17(c) of Schedule 4 to the Natural Environment and Rural Communities Act 2006, Natural England is authorised to exercise the JNCC’s functions as a statutory consultee in respect of applications for offshore renewable energy installations in offshore waters (0-200nm) adjacent to England. This application was included in that authorisation and, therefore, Natural England will be providing statutory advice in respect of that delegated authority. However, JNCC retains responsibility as the statutory advisors for European offshore marine sites that are located outside the territorial sea and UK internal waters (i.e. more than 12nm offshore) and continues to provide Natural England advice on the significance of any potential impacts on interest features of those sites.
- 1.6. In determining this application, the Secretary of State will be acting as the competent authority for the purposes of the Habitats Regulations and the 2017 Regulations. The Secretary of State is also a section 28G authority with specific duties under the 1981 Wildlife and Countryside Act in respect of SSSI.
- 1.7. Further detail on the legislative and policy framework through which Natural England provide advice on proposed plans or projects is included within Appendix H.

## **2. Relevant Representation and Written Representations**

- 2.1. Natural England’s advice in these representations is based on information submitted by Scottish Power Renewables Ltd (the Applicant), in support of its application for a Development Consent Order (DCO) in relation to East Anglia ONE North Offshore Wind Farm (the project). The project refers to the construction and operation of an offshore wind farm of up to 800MW. The export cable makes landfall north of Thorpeness, Suffolk, and the grid connection is at the existing National Grid substation at Friston in Suffolk.
- 2.2. In the interests of issue resolution Natural England has combined Relevant Representation and Written Representations within this response. This is to provide the detail on all issues as early as possible to allow more time for discussion and resolution.
- 2.3. These representations contain a summary of what Natural England considers the main nature conservation, landscape and related issues with regards the Development Consent Order (DCO) application, as well as the Deemed Marine Licences (DML) contained therein, and indicate the principal submissions that it wishes to make at this point. If required and appropriate Natural England will develop these points through further Written Representations. Natural England may wish to revise our advice or add additional points, particularly if further information about the project becomes available and it reserves the right to bring such matters to the Examining Authority’s attention.

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<sup>7</sup> National Planning Policy Framework (July 2018), para 176; PINS Advice Note 10: Habitats Regulation Assessment for nationally significant infrastructure projects, p.3.

- 2.4. Natural England has been working closely with Scottish Power Renewables Ltd to provide advice and guidance on the East Anglia Two (EA2) and East Anglia One North (EA1N) Wind Farms since 2017. Natural England has also been working with the Marine Management Organisation, Environment Agency and the Centre for the Environment, Fisheries and Aquaculture Science to provide coordinated advice in relation to each of our remits. Following the Planning Inspectorate's acceptance of the application on 22 November 2019, Natural England has agreed to attend meetings with the developer to develop statements of common ground as part of the examination process and to try and resolve outstanding issues. Please note that our Risks and Issue log (Appendix I) will cover all of Natural England's outstanding concerns throughout the examination
- 2.5. Natural England intends, if possible, to continue discussions with Scottish Power Renewables Ltd. to seek to resolve all concerns through the provision of further assessment and/or information by which can then lead to the agreement of the outstanding issues in statements of common ground. Failing satisfactory agreement, Natural England advises that the matters set out in sections 3 to 5 and the Appendices, will require consideration by the Examining Authority as part of the examination process.
- 2.6. The Examining Authority may wish to ensure that the matters set out in these representations are addressed as part of the Examining Authority's first set of questions, to ensure the provision of information early in the examination process.

### **Structure of Representations**

- 2.7. These representations provide an overview of Natural England's advice. They are set out as below:
- Section 3 identifies the designated sites and natural features for which there may be impact pathways for this application.
  - Section 4 summarises Natural England's overall view of the application.
  - Section 5 sets out the main issues which Natural England considers need to be addressed by the Secretary of State. These are issues where more information is required in order to complete the assessment.
- 2.8. Natural England's detailed responses, constituting Natural England's Written Representations, where more detailed explanation of issues has been considered relevant, may be found in the following Appendices:
- Appendix A Offshore Ornithology
  - Appendix B Marine Mammals
  - Appendix C Terrestrial Ecology
  - Appendix D Landscape
  - Appendix E Seascape
  - Appendix F1 All other matters
    - Appendix F2 NE cable protection position paper (DRAFT)
    - Appendix F3 Generic Advice on Annex I *Sabellaria spinulosa*
  - Appendix G Development Consent Order and Associated Documents

- Appendix H Legislative and Policy Framework
- Appendix I NE Risks and Issues log

### 3. Designated Sites and Species Potentially Affected by this application:

3.1. The project redline boundary for EA1N extends between the onshore substation at Friston to the landfall north of Thorpeness in Suffolk, with the wind farm array located approximately 43km off the Suffolk coast in the southern North Sea.

3.2. The designated sites and interest features included within Tables 3.1 and 3.2 are those which may be affected by the proposed project. Links have been provided to the citation or conservation objectives of designated sites. We have provided links, rather than hard copies, as these are large and live documents which are updated on a regular basis to incorporate the most up to date evidence. In order to avoid potentially out of date or inaccurate documents being referred to during the examination we recommend that the links are utilised. If the examiner would also like hard documents please let us know at the earliest opportunity.

**Table 3.1 European Sites**

Site Name	Citation	Features for which Outstanding Concerns Remain
Outer Thames Estuary SPA	<a href="#">Outer Thames Estuary SPA - UK9020309</a>	Red-throated diver ( <i>Gavia stellata</i> ), Non-breeding
Southern North Sea SAC	<a href="#">Southern North Sea SAC - UK0030395</a>	Harbour porpoise ( <i>Phocoena phocoena</i> )
Sandlings SPA	<a href="#">Sandlings SPA - UK9020286</a>	Nightjar ( <i>Caprimulgus europaeus</i> ) Woodlark ( <i>Lullula arborea</i> )
Flamborough and Filey Coast SPA	<a href="#">Flamborough and Filey Coast SPA - UN9006101</a>	Kittiwake ( <i>Rissa tridactyla</i> ) Gannet ( <i>Morus bassanus</i> ) Guillemot ( <i>Uria aalge</i> ) Razorbill ( <i>Alca torda</i> )
Alde-Ore Estuary SPA	<a href="#">Alde-Ore Estuary SPA - UK9009112</a>	Lesser black-backed gull ( <i>Larus fuscus</i> )

**Table 3.2 National Sites**

Site Name	Site Detail	Features for which outstanding concerns remain
Suffolk Coast and Heaths AONB	<a href="#">Management Plan 2018-2023</a>	Character and Setting of the AONB
Leiston Aldeburgh SSSI	<a href="#">Leiston - Aldeburgh SSSI - 2000370</a>	Leiston-Aldeburgh contains a rich mosaic of habitats including acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle. This mix of habitats in close juxtaposition and the associated transition communities between habitats is unusual in the Suffolk Coast and Heaths. The variety of habitats support a diverse and abundant community of breeding and overwintering birds, a high number of dragonfly species and many scarce plants.
Flamborough Head SSSI	<a href="#">Flamborough Head SSSI - 1002289</a>	Kittiwake ( <i>Rissa tridactyla</i> ) Guillemot ( <i>Uria aalge</i> ) Razorbill ( <i>Alca torda</i> )
Alde-Ore Estuary SSSI	<a href="#">Alde-Ore Estuary SSSI 1003208</a>	Lesser black-backed gull ( <i>Larus fuscus</i> )

3.3. **European Protected Species** - An application for a wildlife licence may be required if the application will have impacts on EPS. We advise the applicant to apply for a licence at the earliest opportunity for the following species:

- Cetaceans - Harbour Porpoise
- Bats – Barbastelle
- Amphibians –Great Crested Newt

3.4. Competent Authorities must have regard for the Habitats' Regulations when discharging any of their functions, including the granting of a DCO/DML and the discharge of associated conditions. The advice provided in this letter is based on the information currently available in support of this application and may be updated on the basis of additional information such as pre-construction surveys.

#### 4. The Overall Position of Natural England

4.1. In relation to SPAs and SACs, the assessment provisions of the Conservation of Habitats and Species Regulations 2017 (and the Offshore Habitat Regulations) require that a competent authority may only agree to a plan or project of this nature after having ascertained, on the basis of an appropriate assessment, that it will not affect the integrity of the site(s). By this it is meant that such a plan or project may be granted authorisation only on the condition that the competent authority is convinced, beyond reasonable scientific

doubt, that it will not adversely affect the integrity of the site(s) concerned<sup>8</sup>. On the basis of the information submitted, Natural England is not satisfied that it can be excluded beyond reasonable scientific doubt that the project would have an adverse effect alone or in combination on the integrity of the:

- Outer Thames Estuary SPA
- Flamborough and Filey Coast SPA
- Alde-Ore Estuary SPA
- Southern North Sea SAC
- Sandlings SPA.

N.B. Sandlings SPAs is underpinned by a number of SSSIs and therefore has overlapping interest features and supporting habitats.

4.2. In addition to the lack of certainty of adverse effect on the European sites listed above, Natural England believes that the ES does not provide the competent authority with sufficient information to make a decision in relation to the EIA regulations for the following bird species: red-throated diver, gannet, kittiwake, guillemot, razorbill, puffin, herring gull, lesser black-backed gull or great black-backed gull.

## 5. Main Issues

- 5.1. This section outlines the principal issues that Natural England has with the EA1N application. The issues set out below require further work, or clarification, to enable a complete and robust assessment to be undertaken. If the issues are not resolved Natural England will not be able to exclude adverse effect on the integrity of the relevant SACs and SPAs beyond reasonable scientific doubt, having regard for the conservation objectives for those sites.
- 5.2. Each issue has been assigned a risk rating and colour coded accordingly, please see Table 5.1 which sets out Natural England's categorisation, which has been developed for all our OWF NSIP representation from Section 42 consultations onwards. In the interests of brevity, Natural England has only included issues which are identified as amber risk or higher within this representation for EA1N.
- 5.3. Natural England's issues have been briefly summarised in Table 5.2, while detailed comments for specific topics have been provided in the relevant appendix and all red and amber comments are collated in Appendix I 'Risks and Issues Log'.
- 5.4. In relation to SACs and SPAs, the risk to which Natural England refers to in the EA1N Risks and Issues Log, is the risk of the decision-maker proceeding without sufficient information to allow it to be convinced, beyond reasonable scientific doubt, of an absence of adverse effect on the sites concerned. A high risk rating indicates a grave risk of adverse effect(s) unless further information and/or assessment and/or project modifications suffice to dispel scientific doubt. To be clear, Natural England is not ranking these issues in terms of the acceptability of impacts on sites or their features.

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<sup>8</sup> CJEU Case no. C-127/02. *Landelijke Vereniging tot Behoud van de Waddenzee & Nederlandse Vereniging tot Bescherming van Vogels –v- Staatssecretaris van andbouw, Natuurbeheer en Visserij* [2004].



**Table 5.1 Natural England’s risk rating with colour coding**

ES Section/ Issue	Natural England’s Comment	Risk
	<p><b>Purple</b></p> <p>Note for Examiners and/or competent authority. May relate to DCO/DML</p>	
	<p><b>Red</b></p> <p>Natural England considers that unless these issues are resolved it will have to advise that (in relation to any one of them, and as appropriate) it is not possible to ascertain that the project will not affect the integrity of an SAC/SPA and/or comply fully with the Environmental Impact Assessment requirements and/or avoid significant adverse effect on landscape/seascape, unless the following are satisfactorily provided:</p> <ul style="list-style-type: none"> <li>• new baseline data;</li> <li>• significant design changes; and/or</li> <li>• significant mitigation;</li> </ul> <p>Natural England feels that issues given Red status are so complex, or require the provision of so much outstanding information, that they are unlikely to be resolved during examination, and respectfully suggests that they be addressed beforehand.</p>	
	<p><b>Amber</b></p> <p>Natural England considers that if these issues are not addressed or resolved by the end of examination then they would become a Red risk as set out above. Likely to relate to fundamental issues with assessment or methodology which could be rectified; preferably before examination.</p>	
	<p><b>Yellow</b></p> <p>These are issues/comments where Natural England doesn’t agree with the Applicant’s position or approach. We would flag these at the PEI<sub>r</sub> stage with the view that they would be addressed in the Application. But otherwise we are satisfied for <u>this particular project</u> that it will not make a material difference to our advice or the outcome of the decision-making process. However, it should be noted that this may not be the case for other projects. Therefore it should be noted by interested parties that just because these issues/comments are not raised as part of our Relevant Representations in this instance it should not be understood or inferred that in other cases or circumstances Natural England will take this approach. Furthermore, these may become issues should further evidence be presented.</p>	
	<p><b>Green</b></p> <p>Natural England supports the Applicant’s approach.</p>	

5.5. In the interests of providing the best support and advice possible, Natural England would appreciate feedback on the effectiveness and usefulness of this format of response, to inform future responses on EA1N and other applications.

**Table 5.2 – EA1N Main Issues and Associated Risk Ratings**

Summary of Natural England’s key concerns regarding:	Risk Rating
<b>Offshore Ornithology (Appendix A)</b>	
Red-throated diver displacement impacts on Outer Thames Estuary SPA	Red
Collision Risk Modelling (CRM) parameters	Yellow
Cumulative and in-combination assessments (displacement and CRM);	Red
Scale of predicted cumulative and in-combination collision impacts and requirement for mitigation.	Red
Post-construction monitoring.	Red
<b>Marine Mammals (Appendix B)</b>	
Need for regulatory mechanism to manage multiple Site Integrity Plans (SIPs) across offshore wind farm projects.	Purple
Frequency of piling and UXO activities	Red
<b>Terrestrial Ecology (Appendix C)</b>	
Potential for supporting habitat loss within the Sandling SPA	Yellow
Clarification of redline boundary for cable corridor	Red
Potential for disturbance to designated breeding features of Sandlings SPA	Red

Request for SNCB consultation on management plans and provision of outline documents during examination	
<b>Landscape and Visual Impact Assessment (LVIA) – Terrestrial aspects of the project (Appendix D)</b>	
Need for more information on construction phase activities and subsequent impacts to landscape and Suffolk Coast and Heaths AONB.	
<b>Seascape and Landscape Visual Impact Assessment (SLVIA) - 'Offshore' elements of the project (Appendix E)</b>	
Night-time effects of navigational lighting have not been assessed for rural locations	
Significant cumulative effects with the EA2 OWF project.	
<b>Development Consent Order, Deemed Marine Licences and related certified documentation (Appendix G)</b>	
Definitions of commencement, and offshore preparation are not appropriate as they may allow damaging works to be undertaken prior to approval of monitoring, mitigation or construction plans.	
Cable protection should not be permitted to be deployed over any area over the full lifetime of the project.	
Unexploded ordnance (UXO) is not appropriately described within the Development Consent Order (DCO)/Deemed Marine Licences (DML)s	



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**Appendix A to the Relevant Representations of Natural England**

**Offshore Ornithology**

For:

The construction and operation of East Anglia ONE North Offshore Windfarm, a 800 MW Wind Farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208 km<sup>2</sup> .

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27 January 2020

## **Appendix A – Offshore Ornithology**

**In compiling this response the following documents have been considered:**

- 5.3.EA1N Information to Support Appropriate Assessment Report
- 6.1.12 EA1N Environmental Statement Chapter 12 Offshore Ornithology
- 6.3.12.2 EA1N Environmental Statement Appendix 12.2 Ornithology Technical Appendix
- 6.3.12.3 EA1N ES Appendix 12.3 Supplementary Information for the Cumulative Impact Assessment.
- 8.13 EA1N Offshore In Principle Monitoring Plan

### **Main issues**

**The following topics comprise Natural England’s main offshore ornithological concerns:**

1. Red-throated diver displacement impacts on conservation objectives of the Outer Thames Estuary SPA.
2. Collision Risk Modelling (CRM) parameters
3. Cumulative and in-combination assessments (displacement and CRM);
4. Scale of predicted cumulative and in-combination collision impacts and requirement for mitigation.
5. Post-construction monitoring.

The specific comments in the table below have been considered within these topics.

### **Summary of key consenting issues**

Natural England considers that the most critical issue concerning offshore ornithology is the impact of displacement on red-throated diver from the Outer Thames Estuary Special Protection Area (OTE SPA). Specifically, Natural England is concerned that the location of the EA1N array, which abuts the SPA boundary, will through displacement effects result in a long-lasting reduction in the availability of diver habitat in part of the SPA and a change of the distribution of divers within the SPA, and therefore conclude that there would be an adverse effect on site integrity, both alone and in-combination with other plans and projects. To address the risk of adverse impacts on the SPA, Natural England recommends that the proposed array is reconfigured such that no part of it is within 10km to the SPA boundary.

The scale of the potential cumulative displacement at an EIA scale is also a concern for Natural England. It should be noted that during the Norfolk Vanguard windfarm examination, Natural England was unable to rule out a significant adverse effect for cumulative operational displacement on red-throated diver, razorbill or guillemot at the EIA scale.

The other significant issue is the cumulative and in-combination collision effects. The scale of predicted collision impacts from existing and proposed windfarms has already led Natural England to conclude that significant impacts cannot be ruled out for kittiwake, gannet and great black-backed gull cumulatively at EIA level. Natural England has also concluded that an adverse effect on integrity (AEOI) cannot be ruled out in respect of kittiwake, gannet, guillemot and razorbill at

Flamborough and Filey Coast SPA (FFC SPA) and lesser black-backed gull at Alde-Ore Estuary SPA (A-OE SPA) in-combination with other plans and projects. This is set out in Natural England's Comments on Norfolk Vanguard Ltd. Deadline 7 and Deadline 7.5 submissions in relation to Offshore Ornithology Related Matters, available at:

<https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010079/EN010079-003121-DL8%20-%20Natural%20England%20-%20Deadline%20Submission.pdf>).

Therefore, Natural England recommends that EA1N commits to raising turbine draught height in order to minimise their contribution to the cumulative/in-combination collision totals by as much as is possible.

Point	Section	Natural England's Comment	Risk
<p><b>1. Red-throated diver displacement impacts on Outer Thames Estuary SPA (OTE SPA)</b></p> <p><u>Document used:</u> 5.3 EA1N Information to Support the Appropriate Assessment Report</p>			
1	General Comment	<p>Part of the EA1N offshore windfarm (OWF) array area is immediately adjacent to the OTE SPA and, based on studies conducted at other windfarms, is likely to result in displacement of red-throated divers, leading to a long-term reduction in the abundance of divers within part of the SPA and a re-distribution of the interest feature, and result in an adverse effect on integrity (AEOI) from the project alone. <b>Natural England's advice is that to avoid an AEOI the boundary of the development should be amended so no part of the array is within 10 km of the boundary of the SPA.</b></p> <p>The high level conservation objectives and supplementary advice for the OTE SPA can be found in the conservation advice package for the site, which is <a href="#">here</a>.</p> <p>The conservation objectives for the OTE SPA are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> <li>• the extent and distribution of the habitats of the qualifying features</li> <li>• the structure and function of the habitats of the qualifying features</li> <li>• the supporting processes on which the habitats of the qualifying features rely</li> <li>• the populations of each of the qualifying features</li> <li>• the distribution of qualifying features within the site</li> </ul> <p>The supplementary advice on the site's conservation objectives describes the range of ecological attributes that are most likely to contribute to a site's overall integrity. Natural England advises that the following attributes within the supplementary advice should be considered as key when determining whether the proposed development will impact upon the site's ecological integrity:</p>	



Point	Section	Natural England's Comment	Risk
		<ul style="list-style-type: none"> <li>• Maintain the extent, distribution and <b>availability</b> of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding)</li> <li>• <b>Reduce</b> the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed</li> </ul> <p>Natural England recommends that the Applicant reviews the targets and supporting notes for the above attributes in the supplementary advice. The targets set out the desired state of the attribute and the supporting notes provide detailed evidence of displacement impacts on red-throated diver, through changes in habitat distribution and disturbance caused by offshore wind farms.</p> <p>The most significant ornithological issue for Natural England is that the proposed array is in close proximity to the OTE SPA. We note that the 4km buffer around the array area overlaps with 33.2km<sup>2</sup> of the OTE SPA, which represents 0.88% of the SPA area. For baseline characterisation surveys, Natural England advises that the whole of the area within which a planned array may be built plus <b>at least</b> a 4km buffer around those areas is covered by surveys. Buffers serve a number of purposes including assessing areas contiguous to the proposed development that may also be within its zone of influence. There is now evidence suggesting that 4km is likely be an underestimate of the true extent of the displacement, though assuming a magnitude of 100% out to 4km is likely to be an over-estimate. Therefore, when considering impacts on regional or biogeographic populations at the EIA scale, the use of the two components of our current advice (a conservative estimate of extent and a precautionary estimate of magnitude within that extent) in combination, is considered to provide an appropriate estimate for EIA assessment, based on our current understanding of the evidence base.</p> <p>There is a strong and growing body of evidence that red-throated divers are displaced from areas of sea within OWFs and from the waters in their vicinity. There is no evidence to date of habituation. Although the distance around OWFs within which changes in the abundance of divers have been detected appears to vary between developments, in many studies the displacement effect can be detected well beyond the 4km distance which is typically used to inform baseline characterisation, including 8km (Webb and others 2017), 10km (Heinanan and others 2016), 13km (Petersen and others 2014). Mendel and others (2019) report displacement up to 20 km from OWFs, with significant changes in densities at a distance of 16.5 km and the greatest changes in abundance within 10 km. Whilst we</p>	

Point	Section	Natural England's Comment	Risk
		<p>acknowledge that the level of displacement will not be 100% outside of the array itself and will likely show a gradient of diminishing effect with increasing distance from it, this body of evidence clearly demonstrates that displacement does occur beyond 4km (the extent of the buffer assumed in the SNCB displacement advice published in 2017). Therefore, in the context of SPA impact assessment (as opposed to EIA scale assessment), Natural England's current advice is that displacement effects are likely to occur up to 10km from the development and consequently the location of the array will result in a permanent or long term change in distribution of divers within the SPA as a result of the proposal.</p> <p>The Applicant acknowledges that, without modification, the project is likely to change the local distribution of red-throated divers in the part of the SPA in the vicinity of the proposed development. A change in distribution of divers on a continuing basis would not be consistent with fulfilling the conservation objectives for the OTE SPA. As the extent of available supporting habitat within the SPA will not be maintained as a result of the project alone, an AEOI cannot be ruled out. As a result, Natural England's advice is that in order to avoid an AEOI on the OTE SPA, the boundary of EA1N should be amended to ensure an adequate distance between the array and the SPA, so as to minimise or avoid the re-distribution of divers within the SPA due to displacement.</p> <p>Of relevance to this advice, we note that the approach adopted by The Crown Estate when refining the boundary of the Round 4 Wash leasing region was to ensure no new proposed windfarms were within 10km of the Greater Wash SPA, based on a report from MacArthur Green (Furness and others 2019). The Report states <i>"Since offshore wind farms can displace red-throated divers up to distances that in the extreme cases exceed 10km from the turbine, it may be prudent to trim the inshore boundary of Regions 3 and 4 so that these are a minimum of 10km from the outer edge of Greater Wash SPA."</i></p> <p>The 10km distance from the SPA is set as a minimum value by MacArthur Green on the basis that several studies that it cites show values that exceed 10km. This conclusion is in line with a recent study by Diershcke and others (2016) which highlights strong evidence for displacement beyond 10km.</p> <p>Natural England advises that a similar approach to the one taken by The Crown Estate in respect of the Wash Strategic Area for Round 4 be applied to EA1N and EA2. In other words, to rule out the risk of displacement impacts</p>	

Point	Section	Natural England's Comment	Risk
		on red-throated diver in the OTE SPA, the boundary of the array should be set an appropriate distance from the SPA (i.e. a minimum of 10km).	
2	4.3.1.2 Para 200	Natural England notes that the level of vessel traffic associated with site maintenance has been quantified but consideration of the impact of this element has not been further considered. The operation of the site will necessitate an increase in the number of vessel journeys through the SPA, involving both boats and helicopters. As both have the potential to be disturbing to red-throated diver, the impacts of these need to be considered and where appropriate mitigated.	
3	4.3.1.2.2 Para 205	Natural England agrees that assuming a 100% displacement in a 2km buffer around the cable laying vessel is a reasonable approach. Whilst the level of displacement affecting up to 3.5% of the OTE SPA area would be significant, we do acknowledge that the displacement is short-term. We also note however that given the time this will take (identified in paragraph 213 as being 110 days) there is the potential to carry out this activity during the part of the year when red-throated divers are not present and so would not be exposed to displacement risks associated with this activity.	
4	4.3.1.2 Para 202	Natural England notes that the Applicant states that the 4km buffer has an overlap with the SPA of 33.2km <sup>2</sup> which represents 0.88% of the SPA. As the Applicant acknowledges, without modification the project would potentially change the local distribution and abundance of red-throated diver in this section of the SPA. As outlined in Point 1 above, this would not be consistent with fulfilling the Conservation Objectives for the OTE SPA, and recent studies have revealed that displacement extends to at least 10km. When using a 10km buffer around the array the overlap with the SPA is 121.40 km <sup>2</sup> which represents 3.09% of the SPA.	
5	4.3.1.2.2 Para 216	Natural England agrees with the conclusion that there is likely to be no adverse effect alone as a result of red-throated diver displacement due to cable laying. Our conclusion is based on the fact that the cable laying operations are of a temporary nature. However, given Natural England's view that we are already unable to rule out AEOL in-	

Point	Section	Natural England's Comment	Risk
		combination from displacement as a result of disturbance within the SPA, we maintain that a seasonal restriction in cable laying activity should put be in place to minimise the effects on red-throated diver.	
6	4.3.1.2.3 Para 219	Natural England does not agree with the Applicant's estimate that up to 33 individuals will be displaced within the SPA by the proposed EA1N project. Firstly, the extent of displacement effects is known to extend to beyond 10km, and therefore assuming that displacement effects only go out to 4km (even if assuming 100% displacement within that area) means the impacts are potentially underestimated. In addition, the permanent loss of the availability of SPA supporting habitat, due to the presence of the windfarm means the conservation objectives to maintain the extent of supporting habitat will not be met. If a 10km buffer is used, based on the recent OTE survey data Natural England calculates that 70 individuals would be displaced	
7	4.3.1.2.3 Para 222	The focus on predicted mortality and the effect this would have on the abundance of red-throated divers within the SPA is not the only issue for assessing impacts on the SPA. As stated previously, the change in distribution of divers due to the close proximity of the proposed array to the OTE SPA also needs to be considered. Moreover, it is worth noting that the mortality rates are a relatively crude method of capturing a range of potentially deleterious effects that could arise from displacement, including reduced fitness for migration and reduced productivity during the breeding season. Therefore, we advise that further consideration is given to this matter.	
8	4.3.1.2.3 Para 225	<p>As stated by the Applicant, there is a requirement to maintain the extent and distribution of supporting habitats for the designated species. Natural England does not agree with the statement that "this requirement is not strictly at risk". Although the turbines themselves are not proposed to be constructed within the SPA, the supporting habitat will be directly affected because red-throated diver avoid areas in the vicinity of wind turbines, even when they are many kilometres away. There will be a change in the distribution of qualifying features (i.e. red-throated diver) within the site local on a continuing basis, and consequently a change in availability, extent and distribution of the habitats of the qualifying features.</p> <p>Therefore, Natural England advises that an AEOI cannot be ruled out beyond reasonable scientific doubt for the project alone.</p>	

Point	Section	Natural England's Comment	Risk
9	4.3.1.2.4 Para 233	<p>There are in-combination effects from operational windfarms within the SPA. As noted by the Applicant, low densities within existing operational windfarms reported in Irwin and others (2019) provides evidence of the impact of operational windfarms on the distribution of red-throated divers within the SPA.</p> <p>Natural England is already of the opinion that an AEOI of the red-throated diver population of the OTE SPA cannot be ruled out beyond all reasonable scientific doubt, as a result of the scale of in-combination displacement due to consented and operational projects within the SPA (Natural England, 2019). Our advice remains that AEOI in-combination cannot be ruled out. Any additional effects in terms of reduced habitat availability and changing the distribution of red-throated diver within the SPA as a result of EA1N will only add to in-combination impacts.</p>	
10	4.3.1.2.4 Para 234	<p>Natural England acknowledges that the estimates of the red-throated diver population in the OTE SPA have recently increased significantly. Although there is a possibility that this reflects a real increase in abundance over time, this increase is most likely to be due primarily to the change in survey platform, moving from visual aerial to digital aerial surveys which have much higher detection rates, and fly at a higher altitude and are therefore less disturbing. In any event, in addition to considering the objective of maintaining abundance, it is important that the extent of available habitat within the SPA is maintained.</p>	
11	4.3.1.3 Para 236	<p>Based on the predicted reduction in the availability of supporting habitat within the SPA, Natural England concludes that AEOI of the OTE SPA due to loss of habitat as a consequence of displacement of red-throated divers from the EA1N windfarm alone cannot be ruled out beyond reasonable scientific doubt. As stated in point 8, Natural England is already of the opinion that an AEOI of the OTE SPA cannot be ruled out beyond all reasonable scientific doubt due to the scale of in-combination displacement of red-throated diver due to consented and operational projects within the SPA.</p>	

Point	Section	Natural England's Comment	Risk
<p><b>2. Collision Risk Modelling (CRM) parameters</b></p> <p><u>Document used:</u> 6.1.12 EA1N Environmental Statement Chapter 12 Offshore Ornithology, 6.3.12.2 EA1N Environmental Statement Appendix 12.2 Ornithology Technical Appendix, 5.3 EA1N Information to Support the Appropriate Assessment Report</p>			
12	4.4.1.2 Para 244	<p>Natural England welcomes that the Applicant has incorporated uncertainty in seabird density, collision avoidance rates, flight heights and nocturnal activity in their collision assessments. This has been undertaken using the Band (2012) model and presenting multiple tables of the outputs using the variations in the various parameters, as presented in Annex 4 of Appendix 12.2 of the submission documents.</p> <p>Whilst we welcome that the Applicant has considered the uncertainty/variability in this way, we note that this does not allow the uncertainty/variability in the various input parameters to be fully integrated. Therefore, we recommend that if the Applicant undertakes any further collision risk modelling that this is undertaken using the Marine Scotland Science (MSS) stochastic collision risk model (sCRM), and that the log file produced by the sCRM is also included. We note that there are ongoing issues with the sCRM tool which need to be addressed, so we accept that the use of the sCRM tool is dependent on any coding errors in the tool being rectified.</p>	
13	4.4.1.2.1 Para 245	<p>Natural England notes that the Band model (2012) and CRM Option 2 has been used. Use of Option 2 was accepted by Natural England during the Evidence Plan process in preference to Option 1 of the model, after it was communicated that APEM had no confidence in the site specific flight heights derived from digital aerial methods. The main assessment does not consider the CRM predictions from the Band Option 1 outputs, only those for Option 2.</p> <p>We note that in Annex 4 of Appendix 12.2 that the results using Option 1 are presented in Tables 21 and 22. The % Potential Collision Heights (PCHs) for these species from the site-specific data are significantly higher than those from the generic data, and the resulting CRM predictions are considerably higher than those from Option 2 (e.g. 57.99 kittiwake collisions from Option 2 compared to 261.79 from Option 1 for the central input values).</p>	

Point	Section	Natural England's Comment	Risk
		Natural England acknowledges the concerns of the aerial survey contractors over the aerial survey data flight height figures, noting this was also the case at Thanet Extension, where aerial survey data flight height figures were also significantly higher than the generic flight heights. However, this dataset emphasises the critical importance of considering potential variability in flight heights when assessing collision risk impacts, rather than assuming the central input value necessarily represents the 'most likely' impact. Accordingly, we recommend that the Applicant takes a more narrative approach to the assessment, and considers the Option 1 outputs for the above species in the context of the relevant Option 2 95% CIs, as part of a more range-based approach to consideration of CRM impacts. This should not just consider the mean/central predicted collision figures, but also those based on the range of predicted figures resulting from the Applicant's consideration of the uncertainty/variability in the input parameters.	
14	4.4.1.2.1 Para 245	It is of concern that the predicted mortalities using CRM Option 1 are significantly higher than the outputs using Option 2, which is based on generic boat based estimates.	
15	4.4.2.1 Para 249	Natural England welcomes that the SNCB recommended Avoidance Rates have been used.	
16	4.4.2.1 Para 252	Natural England acknowledges that evidence from the ORJIP collision avoidance study indicates that Avoidance Rate for gannet may be higher than the Avoidance Rates currently recommended by the SNCBs. Natural England are content for the inclusion of Avoidance Rates from Bowgen & Cook (2018) within impact assessments, provided that they are presented alongside outputs based on the SNCB recommended Avoidance Rates.	
17	4.4.2.1 Para 258	Natural England recognises from recent evidence presented by the Applicant that nocturnal activity levels for some species may be lower than the levels that equate to the nocturnal activity factors currently used in CRM. However, we also note that there is uncertainty about the empirical activity levels and uncertainty about how these might translate into nocturnal factors applicable to the Band model.	

Point	Section	Natural England's Comment	Risk
		Nevertheless, we do note and welcome that the Applicant has considered the range of Natural England advised nocturnal activity factors to be used with the Band (2012) and therefore we will consider the predicted impacts on the basis of the Natural England recommended rates for all species.	
18	4.4.2.2.3 Para 265	Natural England welcomes the use of our recommended Avoidance rates and nocturnal activity factors, and accept that there is an argument to present the Applicant's preferred options alongside. However, given the significant difference in predicted mortality when Option 1 is used, we advise suggest that this demonstrates that overall assessments of collision risk may not be precautionary enough. The fact that predictions would be significantly higher using Option 1 adds strength to the argument that hub height should be increased to reduce the collision risk as much as possible.	
<p><b>3. Cumulative and In-combination Assessments</b></p> <p><u>Documents used:</u> 6.1.12 EA1N Environmental Statement Chapter 12 Offshore Ornithology (Paragraph numbers given refer to this document), 6.3.12.3 EA1NES Appendix 12.3 Supplementary Information for the Cumulative Impact Assessment.</p>			
19	12.7.3.1 Para 304	Natural England advises the cumulative operational displacement assessment totals for red-throated diver are based on an incomplete data set. Table 12.37 excludes a number of projects including Gunfleet Sands, Kentish Flats, Kentish Flats Extension, London Array and Scroby Sands. These missing projects will reduce the confidence in the assessments and result in a significant under-estimation of the cumulative/in-combination assessments.	
20	12.7.3.1 Para 306	Natural England advises that the comparative approach to red-throated diver displacement assessment is welcomed. In Appendix 12.3, Table A12.3.8 it is noted that only three of the 38 projects listed have a higher relative contribution than EA1N, and these (London Array, Gunfleet Sands, and Kentish Flats) are all constructed within the OTE SPA.	
21	12.7.3.1	The disproportionate contribution that EA1N makes is clear in Table A12.3.9. EA1N alone contributes 9.5% of the cumulative total, whereas all other Tier 4 projects combined (i.e. excluding EA1N) contribute 5.6% of the relative	



Point	Section	Natural England's Comment	Risk
	Para 307	<p>contribution to potential displacement.</p> <p>Although the approach considering the relative contribution to the cumulative total is helpful, and identifies that EA1N does make a significant contribution, it does not adequately consider the overall level of cumulative displacement. This is due to displacement from a number of projects not being included. See point 18 above.</p>	
22	12.7.3.1 Para 308	<p>As mentioned in Point 18, Table 12.37 does not include a number of windfarms, which results in a significant underestimate of impact. Therefore the total annual mortality figure of 37-409 individuals is a possible underestimation. However, even as a potential underestimate, the predicted mortality of 37 – 409 birds as a result of displacement is significant, resulting as it does in an increase of 16.2% in the mortality rate of the total reference population of red-throated divers in this area in the non-breeding season (Appendix 12.3). When using the biogeographic estimate of individuals, the increase in mortality by between 0.6% and 6.6%, which is of concern.</p>	
23	12.7.3.1 Para 311	<p>Whilst it is stated by the Applicant that the assessment includes several sources of precaution, it includes assumptions that may not reflect the full extent of diver displacement.</p> <p>Although Natural England welcomes that assumptions around 100% displacement out to 4km are used, we know that in some cases this may underestimate the degree of displacement if the extent of displacement is 10km or more. In addition, there are a number of OWF excluded from the analysis and it is therefore not considering the full extent of cumulative displacement.</p>	
24	12.7.3.1 Para 315	<p>Due to the Applicant's worst case scenario assessment of minor adverse, and considering that some projects are not included in the assessment, Natural England is unable to rule out a significant adverse effect for cumulative operational displacement on red-throated diver at the EIA scale.</p>	
25	12.7.3.2	<p>Natural England welcomes that a quantitative cumulative estimate of gannet displacement has been included. We agree that effect of cumulative displacement for gannet is likely to be negligible at the EIA scale.</p>	

Point	Section	Natural England's Comment	Risk
	Para 322		
26	12.7.3.3 Para 325-336	Natural England advises that the cumulative auk (razorbill and guillemot) operational displacement assessment totals are based on an incomplete data set. The following wind farm projects are missing from the assessments: Beatrice Demonstrator, Gunfleet Sands, Kentish Flats, Kentish Flats Extension, Methil, Rampion and Scroby Sands. Whilst these missing projects are likely to involve low numbers of auks, the missing data would reduce confidence in the assessments and due to the potential under-estimation of the cumulative assessments.	
27	12.7.3.3 Para 333	<p>It should be noted that at Vanguard, Natural England was unable to rule out a significant adverse effect for cumulative operational displacement on razorbill or guillemot at the EIA scale.</p> <p>Furthermore, during the Vanguard examination, due to Natural England's concerns regarding the incomplete baseline surveys for the Hornsea 3 project, and the associated level of uncertainty as regards the potential impacts of that project, Natural England was not in a position to advise that an AEOI could be ruled out for the razorbill and guillemot features of the Flamborough and Filey Coast SPA (FFC SPA) for impacts in-combination with other plans and projects when Hornsea 3 was included in the in-combination total. Please see our comments on the Applicant's Deadline 8 updated auk displacement assessment submitted at Deadline 9, available from:  <a href="https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010079/EN010079-003190-DL9%20-%20Natural%20England%20-%20Deadline%20Submission.pdf">https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010079/EN010079-003190-DL9%20-%20Natural%20England%20-%20Deadline%20Submission.pdf</a>.</p> <p>The East Anglia OWFs are adding further birds to these totals, as would Hornsea 4, and therefore our assessment is that it is not possible to rule out a significant effect at cumulative EIA scale for guillemot and razorbill displacement, or an adverse effect on integrity of the guillemot and razorbill features of the FFC SPA.</p>	
28	12.7.4.1 Para 345	The cumulative annual gannet collision risk prediction of 2,607 as set out in Table 12.42 differs to the totals agreed at the end of the Norfolk Vanguard examination, which was 2,735. It is not clear why these two totals differ. Therefore we seek clarification regarding this matter.	

Point	Section	Natural England's Comment	Risk
		<p>We also note that the totals do not include figures from Hornsea 4. A PEIR for this project is available. Even without the additional figure from Hornsea 4, the total predicted annual mortality exceeds 1% of baseline mortality. Therefore these impacts require further consideration.</p> <p>Furthermore, during the Vanguard examination, due to Natural England's concerns regarding the incomplete baseline surveys for the Hornsea 3 project, and the associated level of uncertainty as regards the potential impacts of that project, Natural England was not in a position to advise that an AEOI could be ruled out for the gannet features of the Flamborough and Filey Coast SPA (FFC SPA) for impacts in-combination with other plans and projects when Hornsea 3 was included in the in-combination total.</p>	
29	12.7.4.1 Para 348	<p>Natural England acknowledges that as built scenarios are an important issue with regard to cumulative/in-combination CRM predictions and assessments. However, without a legally secured reduction in the consented Rochdale envelope, and an agreed strategic re-run CRM with the final design parameters, cumulative/in-combination assessments should be based on the CRM predictions that were consented. We note that East Anglia 1 is currently the only project to date to meet these tests.</p>	
30	12.7.4.1 Para 349	<p>Natural England acknowledges that a higher avoidance rate of 99.5% for gannet has been recommended by Bowgen &amp; Cook (2018) and that this would significantly reduce the cumulative total. Natural England and the other SNCBs are currently considering our response to the recommendations in Bowgen &amp; Cook (2018). Our current advised avoidance rates are those set out in SNCBs (2014).</p>	
31	12.7.4.1 Para 350	<p>Natural England acknowledges that assuming 25% nocturnal activity with gannet is precautionary, and that is why we have moved to a position of presenting a range of nocturnal activity between 0% and 25%. We note that the nocturnal activity factor from the review of nocturnal activity in gannets (Furness and others 2018) has not been used in the assessment.</p>	

Point	Section	Natural England's Comment	Risk
32	12.7.4.1 Para 355	It is acknowledged that if the higher avoidance rates in Bowgen & Cook (2018) are used, the overall impact significance will be reduced. However, Natural England advised that a significant (moderate adverse) impact on gannet at the EIA scale could not be ruled out due to cumulative collision totals at the end of the Vanguard hearing, and therefore adding more collisions from Boreas, the East Anglia projects and Hornsea 4 will not change this position.	
33	12.7.4.1 Para 356	The kittiwake cumulative collision risk assessment in Table 12.43 differs to the totals agreed by Natural England at the end of the Vanguard hearing. This agreed total was 4,114. There will also be a need to include the figures from Hornsea 4's PEIR. Before these figures are added there is already a 2.5% increase above baseline mortality.	
34	12.7.4.1 Para 359	Whilst Natural England notes that some projects have built out to less than their consented capacity, we do not accept that it is appropriate to revisit the cumulative collision risk whilst consents (including phased builds) for unused capacity remain in place and in the absence of re-run collision risk assessments using the built turbine parameters. Please see comment 28 above.	
35	12.7.4.1 Para 360	Natural England acknowledges that a higher avoidance rate of 99% for kittiwake has been recommended by Bowgen & Cook (2018) and that this would reduce the cumulative total. Natural England and the other SNCBs are currently considering our response to the recommendations in Bowgen & Cook (2018).	
36	12.7.4.1 Para 361	Natural England notes the comments on nocturnal activity, and notes that reducing the nocturnal activity would result in a reduction in predicted mortality.	
37	12.7.4.1	Natural England notes that taking into account some elements of potential precaution e.g. nocturnal activity rates will lead to a reduction in mortality estimates. However, there are elements of the assessment, such as the use of generic potential collision heights (PCHs) rather than site specific PCHs, which could result in an underestimate of	

Point	Section	Natural England's Comment	Risk
	Para 364	collision risk. There is also the critical issue of variability in all of the input data, not least in bird density. In that context, Natural England advised that a significant (moderate adverse) impact on kittiwake cannot be ruled out due to cumulative collision totals at the end of Vanguard, and therefore adding more collisions from Boreas, the East Anglia projects and Hornsea 4 will not change this position.	
38	12.7.4.2 Para 369	As stated for gannet and kittiwake, whilst Natural England notes that some projects have built out to less than their consented capacity, we do not accept that it is appropriate to revisit the cumulative collision risk for lesser black-backed gull when consents for unused capacity remain in place and in the absence of re-run collision risk assessments using the built turbine parameters. Please see comment 28 above.	
39	12.7.4.2 Para 370	As stated for gannet and kittiwake, Natural England notes that it is suggested that using a nocturnal activity factor of 3 (50%) in collision risk modelling is likely to be an overestimate nocturnal activity. For that reason we advise that a range between 25% and 50% are presented with the assessment.	
40	12.7.4.2 Para 371	Whilst Natural England acknowledges that there are elements of the cumulative assessment that result in a higher mortality total, we have concerns about use of Option 2 and the fact that much higher predicted collisions are predicted when using Option 1. However, we agree that the cumulative impact on lesser black-backed gull at the EIA scale is minor adverse (not significant).	
41	12.7.4.3 Para 374	An increase of 6% above baseline mortality for great black-backed gull based on the largest Biologically Defined Minimum Population Scale (BDMPS) is significant.	
42	12.7.4.3 Para 376	As stated above, whilst Natural England notes that some projects have built out to less than their consented capacity, we do not accept that it is appropriate to re-calculate the cumulative collision risk when consents for unused capacity remain in place and in the absence of re-run collision risk assessments using the built turbine parameters. Please	

Point	Section	Natural England's Comment	Risk
		see comment 28 above.	
43	12.7.4.3 Para 377	Natural England notes that it is suggested that using a nocturnal activity factor of 3 (50%) in collision risk modelling is likely to be an overestimate of nocturnal activity. For that reason we advise that a range between 25% and 50% are presented with the assessment.	
44	12.7.4.3 Para 379	The Population Viability Analysis (PVA) model outputs predicted populations being up to 7.7% smaller using the density dependent model, and up to 21.5% smaller than the un-impacted scenario using density independent outputs based on an annual mortality of 900. At the end of the Norfolk Vanguard examination Natural England's position was that we were unable to rule out a significant (moderate adverse) effect on great black-backed gull from cumulative collision mortality at an EIA scale, and that position has not changed.	
45	12.11 Para 401	Natural England disagrees with the summary that concludes no greater than minor adverse significance for all species. At the end of Norfolk Vanguard we advised significant adverse effect at EIA for cumulative collision for gannet, kittiwake and great black-backed gull. Since then more birds have been added to these totals from Boreas, EA1N, EA2 and also Hornsea 4, and as a result our position on these species remains unchanged.	
<p><b>4. Scale of predicted cumulative and in-combination impacts and requirement for mitigation.</b></p> <p><u>Documents used:</u> 5.3 EA1N Information to Support the Appropriate Assessment Report, 6.1.12 EA1N Environmental Statement Chapter 12 Offshore Ornithology, 6.3.12.3 EA1NES Appendix 12.3 Supplementary Information for the Cumulative Impact Assessment.</p>			
46	General Comment	<p>Natural England has previously provided regulators with our advice regarding our concerns about predicted level of cumulative and in-combination impacts on North Sea seabirds.</p> <p>For EIA we have been unable to rule out a significant adverse effect for cumulative operational impacts on:</p> <ul style="list-style-type: none"> <li>kittiwake, gannet and great black-backed gull for cumulative collision impacts;</li> </ul>	

Point	Section	Natural England's Comment	Risk
		<ul style="list-style-type: none"> <li>• guillemot, razorbill and red-throated diver for cumulative displacement impacts</li> </ul> <p>For HRA we have been unable to rule out adverse effect on integrity on:</p> <ul style="list-style-type: none"> <li>• kittiwake from FFC SPA due to in-combination collision impacts not including Hornsea 3, and gannet from FFC SPA due to in-combination collision impacts when Hornsea 3 is included. <ul style="list-style-type: none"> <li>• guillemot and razorbill at FFC SPA due to in-combination displacement effects when Hornsea 3 is included.</li> </ul> </li> <li>• lesser black-backed gull from Alde-Ore Estuary SPA due to in-combination collision impacts.</li> <li>• red-throated diver from Outer Thames Estuary SPA due to in-combination displacement effects.</li> </ul> <p>These concerns as expressed during the Vanguard examination are likely to only intensify given that additional birds from Boreas, the East Anglia projects and Hornsea 4 are being added to these totals. Natural England therefore considers that without major project-level mitigation being applied to all relevant projects coming forward, there is a significant risk of large-scale impacts on seabird populations. Natural England therefore recommends that EA1N and EA2 commit to raising turbine draught height, as has been done by other projects (e.g. Hornsea 2, East Anglia 3 and Vanguard), in order to minimise their contribution to the cumulative/in-combination collision totals by as much as is possible.</p> <p>We also strongly recommend that the boundary of EA1N and EA2 arrays are re-designed to ensure that arrays are at least 10km from the boundary of the OTE SPA to avoid displacement of red-throated diver within the SPA.</p>	
<p><b>5. Post consent monitoring</b></p> <p>Documents used: 8.13 EA1N Offshore In Principle Monitoring Plan</p>			
47	1.6.7.2 Para 44	<p>Natural England notes that reference is made to supporting “joint industry projects or alternative site based monitoring of existing seabird activity inside the area(s) within the Order Limits in which it is proposed to carry out construction works with its potential wider benefits.” It is not clear what is being proposed or what the mechanism</p>	

Point	Section	Natural England's Comment	Risk
		<p>may be to ensure that appropriate monitoring is undertaken. We therefore recommend that the most significant area or areas of ornithological uncertainty is identified, and an in-principle monitoring plan is agreed.</p>	
48	1.6.7.1  Para 37-42	<p>Natural England welcomes the statement in the In Principle Monitoring Plan that the Applicant will engage with stakeholders and that the methodology would be developed through the Ornithological Monitoring Plan (required under Condition 14(1) (I) of Schedule 9 and 10 of the DCO). We agree with the Applicant that the aims of monitoring should be to reduce uncertainty for future impact assessment and address knowledge gaps.</p> <p>However, we disagree with the Applicant's assertion that displacement effects on red-throated diver would not create impacts of more than minor adverse significance during any biological season during construction and operation phases. Validating the extent of red-throated diver displacement will be the main priority for any post-consent monitoring.</p> <p>Natural England also disagrees that the risk to birds from cumulative collisions with wind turbines across all windfarms considered is assessed as no greater than minor adverse significance for all species. For kittiwake, gannet and great black-backed gull we are unable to rule out significant impact cumulatively.</p> <p>Given Natural England's previous advice at recent projects regarding our concerns about predicted levels of cumulative and in-combination impacts on seabirds and this project's likely contribution to those impacts should it be consented, we consider the aspects that are likely to be relevant for consideration for post-consent monitoring are as follows:</p> <ul style="list-style-type: none"> <li>• Validating levels of red-throated diver displacement;</li> <li>• Improving our understanding of collision risk (which could potentially include monitoring of collisions at the site via cameras on turbines, improvements to modelling, options for mitigation and reduction);</li> <li>• Collection of reliable data on seabird flight heights.</li> </ul>	



Point	Section	Natural England's Comment	Risk
		Once the final impact figures are agreed, the key issues should be identified so that discussion can be held with relevant stakeholders and the Applicant to identify what is the most appropriate focus of post consent ornithological monitoring.	

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**Appendix B to the Relevant Representations of Natural England**

**Marine Mammals**

For:

The construction and operation of East Anglia ONE North Offshore Windfarm, a 800 MW Wind Farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208 km<sup>2</sup>.

Planning Inspectorate Reference EN010077

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27 January 2020

## **Appendix B – Marine Mammals**

**In compiling this response the following documents have been considered:**

- 5.3 EA1N Information to Support Appropriate Assessment Report
- 6.1.11 EA1N Environmental Statement Chapter 11 Marine Mammals
- 8.14 EA1N Draft Marine Mammal Mitigation Protocol
- 8.17 EA1N In-principle Southern North Sea SAC Site Integrity Plan
- 8.21 EA1N Interface Document

### **Summary of main issues**

As per Natural England's previous advice, a mechanism needs to be developed by the regulators to ensure continuing adherence to the statutory nature conservation bodies (SNCB) thresholds over time. Multiple Site Integrity Plans (SIPs) will be developed, piling can take place over several years, and new projects can come online during this time. Should potential exceedance of the thresholds occur, a process for dealing with this issue needs to be in place – the affected developers / industries will need to work together with the regulator and SNCBs to prevent adverse effect on the Southern North Sea Special Area of Conservation (SNS SAC). Until the mechanism by which the SIPs will be managed, monitored and reviewed is developed, Natural England are unable to advise that this approach is sufficient to address the in-combination impacts described below and therefore the risk of Adverse Effect on Integrity (AEOI) on the SNS SAC cannot be fully ruled out.

## Detailed comments

Point	Section	Natural England's Comment	Risk
Document Used: 6.1.11 EA1N Environmental Statement Chapter 11 Marine Mammals			
1	11.3.3.1	The phrases 'same day' and '24 hour period' seem to be used interchangeably throughout the marine mammal chapter and associated documentation when they are not quite the same thing. If this follows through to the assessment stage Natural England considers a clarification note may be required as to the intended wording and any consequences for either the EIA or HRA.	
Document Used: 5.3 EA1N Information to Support Appropriate Assessment Report			
2	5.2.2	Natural England welcomes the commitments from the Applicant listed here and considers they should be specifically conditioned on the face of the deemed marine licence (DML), particularly to ensure there is no concurrent piling between EA1N and EA2. Please see Point 11 in Appendix G.	
3	5.3 Para 473	The SNS SAC covers an area of 36,951km <sup>2</sup> , not 36,715km <sup>2</sup> as stated here.	
4	5.3.5.1.1.2 Para 525	Although it is correct to say disturbance of harbour porpoise will not exceed 20% of the seasonal component of the site <i>at any one time</i> , the 20% threshold is for disturbance of harbour porpoise in <b>any given day</b> . Therefore detonation of 2 unexploded ordnance (UXO) in a 24 hour period would easily exceed the 20% threshold and disturb harbour porpoise from 32% of the winter area of the site, assuming the 2 UXO detonations are spatially separate from each other. <b>Natural England therefore disagrees with the conclusion drawn in paragraph 512 that there is no significant disturbance or potential adverse effect on the SNS SAC if more than 1 UXO is detonated on any given day. Natural England considers that UXO detonations should be limited to 1 on any given day and this should be secured in the DML.</b>	
5	5.3.5.1.2.3	As per comment 4 above, the 20% threshold applies to any given day so if 1 piling event disturbs harbour porpoise from 16% of the winter component of the Southern North Sea then 2 piling events on any given day will result in 32% of the SAC winter area being disturbed, therefore exceeding the	

		20% threshold. Therefore, Natural England disagrees with the conclusion of no significant disturbance and no potential adverse effect on the integrity of the SNS SAC if more than 1 piling event occurs on any given day. Natural England considers piling activities should be limited to 1 on any given day and this should be secured in the DML.	
6	5.3.5.1.9.1	As per previous comments, if 1 UXO detonation and 1 piling event were to occur on the same given day as described in paragraph 626, the area of the winter component of the SNS SAC that harbour porpoise would be disturbed from would exceed the 20% threshold.	
7	5.3.5.5.1	Figures 9 and 10 do not show the overlap in disturbance figures as described in paragraph 763. Instead they relate to ornithology. Similarly figures 11 and 12 do not show what is described in paragraph 764.	
8	5.3.5.5.4 Para 849	Natural England queries how the figure of 5% has been arrived at as an increased collision risk in paragraph 849.	
9	5.5.2.1.8	Natural England notes that it is predicted that a maximum of 11.7% of the grey seal from the Humber Estuary SAC could potentially be temporarily disturbed and overall 18.6% could be disturbed (table 5.79), however we agree with the approach considered by the Applicant of using the context of the wider in-combination reference population and recognising that not all of the impacted seals would be from the Humber Estuary SAC and that therefore the potential level of impact is more likely to be in the region of 3.5% and 5.5% respectively.	
Document Used: 8.14 EA1N Draft Marine Mammal Mitigation Protocol			
10	4 Para 24	Natural England notes that additional noise abatement technologies may be subject to additional marine licensing if required and queries whether the Schedule of Agreement described in table 2.1 allows sufficient time to acquire any additional licence(s) and source and implement additional mitigation measures or noise abatement systems that may be required.	
Document Used: 8.17 EA1N In-principle Southern North Sea SAC Site Integrity Plan			

11	3 Para 32	The SNS SAC covers an area of 36,951km <sup>2</sup> , not 36,715km <sup>2</sup> as stated here.	
12	6.1	Natural England welcomes the commitments from the Applicant listed here and considers they should be specifically conditioned on the face of the DML, particularly to ensure there is no concurrent piling between EA1N and EA2. Please see Point 11 in Appendix G.	
13	6.5	Natural England notes that additional noise abatement technologies may be subject to additional marine licensing if required and queries whether the Schedule of Agreement described in Table 2.1 allows sufficient time to acquire any additional licence(s) and source and implement additional mitigation measures or noise abatement systems that may be required.	
14	General comment	As per Natural England's previous advice, a mechanism needs to be developed by the regulators to ensure continuing adherence to the statutory nature conservation bodies (SNCB) thresholds over time. Multiple Site Integrity Plans (SIPs) will be developed, piling can take place over several years, and new projects can come online during this time. Should potential exceedance of the thresholds occur, a process for dealing with this issue needs to be in place – the affected developers / industries will need to work together with the regulator and SNCBs to prevent adverse effect on the Southern North Sea Special Area of Conservation (SNS SAC). Until the mechanism by which the SIPs will be managed, monitored and reviewed is developed, Natural England are unable to advise that this approach is sufficient to address the in-combination impacts described below and therefore the risk of Adverse Effect on Integrity (AEOI) on the SNS SAC cannot be fully ruled out.	



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**Appendix C to the Relevant Representations of Natural England**

**Terrestrial Ecology**

For:

The construction and operation of East Anglia ONE North Offshore Windfarm, a 800 MW Wind Farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208 km<sup>2</sup> .

Planning Inspectorate Reference: EN010077

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## **Appendix C – Terrestrial Ecology**

### **In formatting this response the following documents have been considered:**

- 5.3 EA1N Information to Support Appropriate Assessment Report
- 5.4 EA1N Consents and Licences Required under other Legislation
- 6.1.22 EA1N Environmental Statement Chapter 22 Onshore Ecology
- 6.1.23 EA1N Environmental Statement Chapter 23 Onshore Ornithology
- 6.7 EA1N Onshore Schedule of Mitigation
- 8.7 EA1N Outline Landscape and Ecological Management Strategy

### **Summary of comments**

- Natural England reiterates the preference for horizontal directional drilling (HDD) under the Sandlings Special Protection Area (SPA) to avoid supporting habitat loss, which will take some time to return to its previous condition
- It is not clear whether the identical red line boundary identified as the cable corridor area is intended for both EA1N and EA2, i.e. will all cable installation for both projects take place within the same 32m wide corridor or will there be 2x 32m cable corridors, one for EA1N and one for EA2? What is the width of the red line boundary? This is something that needs to be clearly defined throughout the project description and Development Consent Order/Deemed Marine Licence (DCO/DML) as has implications in terms of impacts. Please see comments below and Appendix D on the Landscape and Visual Impacts Assessment.
- Natural England advises that all works in, and within 200m of the boundary of the Sandlings SPA are undertaken outside of the breeding bird season (1<sup>st</sup> February to 31<sup>st</sup> August for woodlark and 1<sup>st</sup> of April to 31<sup>st</sup> August for nightjar) to limit noise, visual and vibration disturbance to designated features. This should be included as a condition in the DCO and Code of Construction Practice (COCP). Natural England request consultation on the COCP and suggest that the relevant conservation bodies are included within the document to ensure contact details are accessible if and when required.
- The applicant should engage early with Natural England to apply for any protected species licenses required.
- Where construction is taking place outside of designated sites and within the breeding season, pre-construction surveys should be undertaken prior to the start of any works. If active nests are found, it should be noted that all wild birds, their nests and eggs are afforded legal protection under the Wildlife and Countryside Act 1981 (as amended), and works in the vicinity of a nest may have to be delayed until any chicks have fledged. And or any site preparation works may be required to deter birds from breeding.
- Any exclusion zones should be well researched to reflect the disturbance tolerance level of the species identified and be of a sufficient distance to prevent disturbance.
- It is Natural England's understanding that mitigation measures will be detailed within the following management plans and request consultation with the relevant statutory nature conservation bodies when available::
  - Ecological Management Plan

- Landscape Management Plan
- Hedgerow Management Plan
- Noise and Vibration Management Plan
- Pollution Prevention and Response Plan
- COCP (as above)

**However, we advise that as with other NSIPs currently in examination these plans are provided in outline now.**

## Detailed comments

Point	Section	Natural England's Comment	Risk
<u>Document used:</u> 5.3 EA1N Information to Support the Appropriate Assessment Report			
1	3.2.1 Table 3.1	Natural England strongly advises that all cable line construction works in the boundary, or within 200m of the Sandlings Special Protection Area and Leiston to Aldeburgh Site of Special Scientific Interest is undertaken outside of the breeding bird season to prevent damage or disturbance (noise, visual and vibration) to designated interest features. This should be included as a condition in the DCO and Code of Construction Practice (COCP). Natural England request consultation on the COCP and suggest that the relevant conservation bodies are included within the document to ensure contact details are accessible if and when required.	
2	3.3.2.3.1 Para 61	<p>If an open cut trench method is selected habitat restoration should be implemented to compensate and <b>improve</b> supporting habitat lost. Any scrub removed should be reinstated by planting hawthorn and blackthorn. Areas of acid grassland should be created as heathland by ensuring that soil removed is appropriately stored, reinstated and capped with sandy topsoil. Locally sourced heather seed should be sown across the restoration area to recreate pioneer heath. The Applicant should provide information on the areas to be restored and methodology including timescales and species.</p> <p>The applicant should consider opportunities for net gain in improving and extending relevant and supporting habitats. We recommend consultation with the landowner and RSPB is sought regarding restoration works and net gain opportunity.</p>	
3	3.3.2.3.1 Para 63	Natural England reiterate the preference for HDD under the Sandlings SPA to avoid supporting habitat loss, which will take some time to return to its previous condition. Should HDD be used, sufficient detail on methodology and safeguards to prevent a drilling mud outbreak should be produced. Should a bentonite outbreak occur the HDD document should specify that Natural England will be contacted within 24hours and	

Point	Section	Natural England's Comment	Risk
		prior to the commencement of any clean-up operations, as the clean-up may on occasion be more damaging than the outbreak. We advise that an outline bentonite frackout document should be provided during examination for each of the HDD locations	
4	3.3.2.4.1 Para 72 &73	<p>Natural England support the seasonal restriction of construction works (outside of the breeding bird season) within the boundary, or 200m outside of the Sandlings SPA to prevent damage or disturbance to designated features of interest.</p> <p>This should be included as a condition in the DCO and COCP. Natural England request consultation on the COCP and suggest that the relevant conservation bodies are included within the document to ensure contact details are accessible when required</p>	
<u>Document used:</u> 5.4 EA1N Consents and Licences Required under other Legislation			
5	General comment	Natural England advises that should altered/new proposals be planned within a Site of Scientific Interest (SSSI), which are not currently considered as part of the DCO and Application then an assent may be required under the Wildlife and Countryside Act 1981 (as amended) from Natural England.	
<u>Document used:</u> 6.1.22 EA1N Environmental Statement Chapter 22 Onshore Ecology			
6	22.5.2.11 Para 119	Consideration should be given to Leiston to Aldeburgh SSSI and coastal vegetated shingle in the case of a bentonite or drilling mud outbreak. Information should be provided on engineering design, depth and break out contingencies. This should be provided in the form of outline plan and secured in the DCO/DML	
7	22.5.3.2 Para 126	We advise that all nationally protected species, are considered of at least moderate importance.	

Point	Section	Natural England's Comment	Risk
8	22.6.1.1.1 Para 164	Within the Leiston to Aldeburgh SSSI the variety of water bodies and terrestrial habitats provides suitable breeding and hunting areas for many species of dragonfly and damselfly, including the nationally scarce hairy dragonfly <i>Brachytron pratense</i> . We advise consideration of this species, as previously requested in Natural England's advice letter dated the 26 <sup>th</sup> March 2019.	
9	22.6.1.1.2 Para 169	Natural England strongly advises that all cable line construction works in the boundary, or within 200m of the Sandlings Special Protection Area SPA and Leiston – Aldeburgh SSSI is undertaken outside of the breeding bird season (1 <sup>st</sup> February to 31 <sup>st</sup> August for woodlark and 1 <sup>st</sup> of April to 31 <sup>st</sup> August for nightjar) to prevent damage or disturbance to designated interest features.  This should be included as a condition in the DCO and COCP. Natural England request consultation on the COCP and suggest that the relevant conservation bodies are included within the document to ensure contact details are accessible when required	
10	22.6.1.4.2 Para 193 22.6.1.5.1 Para 198	Natural England welcome the mitigation prescribed for woodland, scrub and trees and encourage the Applicant to incorporate net gain into their strategy. We support the commitment to an aftercare period for all newly planted hedgerow, shelterbelts and woodlands.	
11	22.6.1.6 Para 200	The impact on coastal habitat from bentonite and drilling mud break outs should be considered.	
12	22.6.1.7	The Hundred River feeds into Sandlings SPA and we would expect to see an assessment of alternatives to include HDD under this water course and impacts outlined. However, should HDD be used, sufficient detail	

Point	Section	Natural England's Comment	Risk
	Para 203 22.6.1.7.1 Para 205	<p>on methodology and safeguards to prevent a drilling mud outbreak should be produced. Should a bentonite outbreak occur the HDD document should specify that Natural England will be contacted within 24hours and prior to the commencement of any clean-up operations, as the clean-up may on occasion be more damaging than the outbreak. We advise that an outline bentonite frackout document should be provided during examination for each of the HDD locations</p> <p>We welcome the commitment to reinstate and improve habitats.</p>	
13	22.6.1.8.2 Para 209	Any works that directly impact upon badgers should be subject to mitigation, compensation and/or a protected species license from Natural England to avoid an offence under the Wildlife and Countryside Act 1981 (as amended). We refer to the <a href="#">Planning Inspectorates advice note 11</a> which advises early engagement with Natural England. We advise that an outline plan is provided.	
14	22.6.1.8.4 Para 211	Mitigation should include micro-siting of cable route to avoid badger setts, and mitigation and compensation as outlined within Natural England standing advice. This should all be included in an outline plan during examination.	
15	22.6.1.9.2 Para 224	<p>We welcome the mitigation prescribed for bats in principal, but advise that potential impacts to bat habitat should be clearly mapped with roosting, foraging and commuting areas shown in relation to the redline boundary. As consistent with Natural England's previous advice letter the 26<sup>th</sup> March 2019.</p> <p>The applicant should also consider any in combination impacts with proposed development at Sizewell C and any other foreseeable plans or projects. This should be provided as an outline plan as part of the examination.</p>	
16	22.6.1.10.2 Para 230	Any works that directly impact upon great crested newts should be subject to mitigation, compensation and/or a protected species license from Natural England to avoid an offence under the Wildlife and Countryside Act 1981 (as amended). We refer to the <a href="#">Planning Inspectorates advice note 11</a> which advises	

Point	Section	Natural England's Comment	Risk
		early engagement with Natural England. Natural England advises that the Applicant approaches us for a Letter of No Impediment as early as possible.	
17	22.6.1.11 Para 232	The Environmental Statement confirms suitable habitat within the vicinity of works and highlights the possibility of killing or injuring reptiles as a risk during construction. Natural England advises that reptile surveys are completed prior to construction to quantify potential impacts and to finalise mitigation works.  Reptile mitigation should ensure that there is no net loss of local reptile conservation status, by providing sufficient quality, quantity and connectivity of habitat to accommodate the reptile population in the long term, either on site or at an alternative site nearby. We advise that an outline plan is provided as part of the examination.	
18	22.5.3.4 Para 143	We support the undertaking of pre-construction surveys to confirm the presence and/or absence of otters and water vole. In the event of either or both species being present in pre-construction surveys we refer to our protected species standing advice: <a href="https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences">https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences</a>	
<u>Documents used:</u> 6.1.23 EA1N Environmental Statement Chapter 23 Onshore Ornithology			
19	23.6.3.1.1.2 Para 152  23.6.3.1.2.2 Para 165	It is Natural England's advice that all cable line construction works within the boundary, or 200m outside of the Sandlings SPA and Leiston – Aldeburgh SSSI are undertaken outside of the breeding bird season (1 <sup>st</sup> February to 31 <sup>st</sup> August for woodlark and 1 <sup>st</sup> of April to 31 <sup>st</sup> August for nightjar) to prevent damage or disturbance to designated and sensitive interest features. This should be included as a condition in the DCO and CCP. Natural England requests consultation on the CCP and suggest that the relevant conservation bodies are included within the document to ensure contact details are accessible when required.	

Point	Section	Natural England's Comment	Risk
20	23.6.3.1.4.2  Para 181	<p>The open cut trench method of cable installation will result in the temporary loss of supporting habitat, including the breeding sites of turtle dove which are cited as a features of interest for Leiston to Aldeburgh SSSI. We understand that any habitat removed during the period of works will be reinstated, however there is a risk that the required mitigation will not be sufficiently established to provide suitable nesting habitat for the following breeding season. Natural England advises that the 3ha of compensatory turtle dove feeding habitat to be provided should be in place in advance of works.</p> <p>We understand that an HDD technique will avoid the loss of designated habitat and on this basis Natural England expresses a preference for an HDD method.</p>	
21	23.6.3.1.5.5  Para 209	<p>The open cut trench method of cable installation will result in the temporary loss of designated and supporting habitat, including the breeding sites of nightingale which is cited as a feature of interest for Leiston to Aldeburgh SSSI. To mitigate impacts, the Applicant proposes the provision of nesting sites for nightingale will be delivered through habitat management within and on the outskirts of the designated sites and in line with BTO habitat management guidelines. This mitigation method will need to be secured in the DCO and clearly set out in an outline habitat management/mitigation plan as there is the potential for the works themselves to be damaging to the designated sites. We advise that any scrub removal is restored with hawthorn and blackthorn.</p> <p>We understand that an HDD technique will avoid the loss of designated habitat and on this basis Natural England expresses a preference for an HDD method.</p>	
22	23.6.3.1.7.5  Para 224	<p>We welcome the inclusion of barn owl mitigation and the commitment to consult with the Suffolk Community Barn Owl Project. We advise that any compensatory habitat is provided in appropriate timescales. And should that mitigation be required with the boundary of any designated site then Natural England must be consulted. This will need to be secured in the DCO and included in an outline management plan.</p>	



Point	Section	Natural England's Comment	Risk
23	23.6.3.2.1.5 Para 276 23.6.3.2.2.5 Para 290 23.6.3.2.3.5 Para 300 23.6.3.2.4.5 Para 312 23.6.3.2.5.5 Para 318 23.6.3.2.6.5 Para 324 23.6.3.2.7.5 Para 332 23.6.3.2.8.5 Para 341	<p>We agree with the necessity of pre-construction surveys prior to any works taking place. If active nests are found, it should be noted that all wild birds, their nests and eggs are afforded legal protection under the Wildlife and Countryside Act 1981 (as amended), and therefore works in the vicinity of the nest may have to be delayed until any chicks have fledged. Or site preparation works need to be agreed upfront with relevant authorities in consultation with Natural England to be locations temporarily unsuitable for nesting.</p> <p>If exclusion or buffer zones are proposed, the size of the exclusion zone should be well researched to reflect the disturbance tolerance level of the species identified and be of a sufficient distance to prevent disturbance (noise, visual and vibration) to nesting birds.</p>	

Point	Section	Natural England's Comment	Risk
	23.6.3.2.9.5 Para 347 23.6.3.2.10.5 Para 354		
24	23.6.4.2 Para 371	We support the inclusion of an artificial light emissions management plan, which incorporates measures to minimise light spill following the recommendations regarding birds set out in the Bat Conservation Trust's Artificial Lighting and Wildlife guidance (2014).	
<u>Documents used:</u> 6.7 EA1N Onshore Schedule of Mitigation			
25	General comment	<p>Monitoring:</p> <p>Natural England notes that detail on monitoring plans is currently lacking and advises that a commitment to post-construction monitoring is made, in particular in the following cases:</p> <ul style="list-style-type: none"> <li>• 1 year post-completion of turf stripped and grassland areas which have been removed to assess that natural colonisation or reseeded has been successful, and whether additional mitigation works may be required</li> <li>• Following re-instatement of habitats (see Ref 5.12 in Onshore Schedule of Mitigation), in particular if open cut trenching is used.</li> <li>• 7 years monitoring of hedgerows or until the hedgerows have recovered.</li> </ul>	
26	1.2 Table 1.1	We welcome the inclusion of a Soil Management Plan and refer to the DEFRA guidance on soil protection: <u>Construction Code of Practice for the Sustainable Use of Soils on Construction Sites</u> . We advise its use in the design and construction of development, including any planning conditions. Should the development	

Point	Section	Natural England's Comment	Risk
	4.1	proceed, we advise that the Applicant uses an appropriately experienced soil specialist to advise on, and supervise soil handling, including identifying when soils are dry enough to be handled and how to make the best use of soils on site.	
27	1.2 Table 1.1 1.2	Natural England welcomes the preparation of a project specific Pollution Prevention and Response Plan and advises that we are consulted within 24 hours should there be a pollution incident within or in proximity to a designated site. We also advise that SNCBs, including Natural England are listed as consultees. This should be agreed in outline as part of the examination	
28	1.2 Table 1.1 8.1	Natural England welcomes the preparation of a project specific Noise and Vibration Management Plan. We also advise that SNCBs, including Natural England are listed as consultees. This should be agreed in outline as part of the examination	
29	1.2 Table 1.1 5.2	Natural England supports the seasonal restriction of construction works (outside of the breeding bird season; 1 <sup>st</sup> February to 31 <sup>st</sup> August for woodlark and 1 <sup>st</sup> of April to 31 <sup>st</sup> August for nightjar) within the boundary, or 200m outside of the Sandlings SPA to prevent damage or disturbance to designated features of interest.  This should be included as a condition in the DCO and COCP. Natural England request consultation on the COCP and suggest that the relevant conservation bodies are included within the document to ensure contact details are accessible if and when required.	
30	1.2 Table 1.1	Natural England requests that Statutory Nature Conservation Bodies (SNCBs) including Natural England are consulted on the Ecological Management Plan. And that this is included in outline as part of the examination.	

Point	Section	Natural England's Comment	Risk
	5.1 – 5.12		
31	1.2 Table 1.1 6.8 – 6.11	<p>We agree with the necessity of pre-construction surveys prior to any works taking place. If active nests are found, it should be noted that all wild birds, their nests and eggs are afforded legal protection under the Wildlife and Countryside Act 1981 (as amended), and therefore works in the vicinity of the nest may have to be delayed until any chicks have fledged. Or site preparation works need to be agreed upfront with relevant authorities in consultation with Natural England to be locations temporarily unsuitable for nesting.</p> <p>If exclusion or buffer zones are proposed, the size of the exclusion zone should be well researched to reflect the disturbance tolerance level of the species identified and be of a sufficient distance to prevent disturbance to nesting birds.</p>	
<u>Documents used:</u> 8.7 EA1N Outline Landscape and Ecological Management Strategy			
32	5.2.3.1 Para 133-136 5.2.3.2 Para 137 5.2.3.3 Para 138 – 140	<p>Natural England welcomes the mitigation prescribed for woodland, scrub and trees and encourage the Applicant to incorporate net gain into their strategy. We support the commitment to an aftercare period for all newly planted hedgerow, shelterbelts and woodlands. Natural England advises that:</p> <ul style="list-style-type: none"> <li>• Replacement of hedgerows should be in line with Suffolk Biodiversity Partnership BAP Priority Habitat guidance;</li> <li>• Post-construction monitoring should be undertaken for 7 years or until the hedgerows have recovered</li> <li>• Mature hedgerows plants should be used to fill gaps to reduce time required for gapping up.</li> <li>• Replanting should follow in the first winter after construction.</li> <li>• Hedges should be double-planted with 2m grassland strips or rough grassland / scrub on both sides so there is always a leeward side to forage.</li> <li>• Subject to landowner permissions, those hedgerows should be left to become overgrown either side of the section to be removed prior to construction.</li> </ul>	

Point	Section	Natural England's Comment	Risk
		A Hedgerow Mitigation Plan should be developed in consultation with Natural England prior to the removal of hedgerows. This mitigation plan should be included within Ecological Management Plan, Landscape Management Plan or OLEMS as appropriate	
33	8 Para 307	We support the engagement of an ecologist when undertaking maintenance works to assess impacts to protected species, breeding birds, designated sites and features to provide guidance on appropriate mitigation.	
34	10 Para 313	Natural England requests that Statutory Nature Conservation Bodies (SNCBs) including Natural England are consulted on the Ecological Management Plan.	



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**Appendix D to the Relevant Representations of Natural England**  
**Landscape and Visual Impact Assessment (LVIA) – Terrestrial aspects of the**  
**projects**

For:

The construction and operation of East Anglia ONE North Offshore Windfarm, a 800 MW Wind Farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208 km<sup>2</sup> .

Planning Inspectorate Reference: EN010077

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## **Appendix D – Landscape and Visual Impact Assessment**

**In formatting this response the following documents have been considered:**

- 6.1.29 EA1N Environmental Statement Chapter 29 Landscape and Visual Impact Assessment

### **Summary of comments**

- Natural England highlights the need for considering and potentially committing to simultaneous construction of the onshore cabling for both projects should they both be approved. As this may be considered as suitable mitigation to limit construction phase landscape and visual impacts to the short term.
- There is a limited amount of detail as to how construction activities would proceed along the cable route in and close to the Suffolk Coast and Heaths Area of Outstanding Natural Beauty ('AONB') and how soon after commencement all signs of construction activity would be removed from the AONB. We therefore advise that further information is required from the Applicant to enable Natural England to advise further on the significance of the impacts to the character and setting of the AONB.

## Detailed comments

Point	Section	Natural England's Comments	Risk
<u>Document Used:</u> 6.1.29 EA1N Environmental Statement Chapter 29 Landscape and Visual Impact Assessment			
1	General comment	A vital mitigation measure, should both projects be approved, is for the onshore cabling to be installed for both simultaneously and not sequentially. The former will restrict construction phase impacts to the short term, but the latter would produce medium term impacts on the AONB. The Applicant discusses some ducting possibly being installed to accommodate both schemes when one is being constructed, but the importance of the AONB (a nationally designated landscape with the highest level of planning policy protection) justifies the most effective mitigation being applied i.e. both onshore cabling stages to be completed together and the landscape fully restored as soon as possible.	
2	General comment	We believe that more information concerning the schedule for the undergrounding works within and in the immediate setting of the AONB is warranted, covering both the topsoil stripping/trenching (and HDD if relevant) and backfilling/reinstatement of the cable route. We would therefore like to see an anticipated timetable / schedule for how construction activities would progress along the cable route within and in the immediate setting of the AONB, what construction consolidation sites and associated or other construction infrastructure and equipment would be present and how long after commencement all signs of a active construction activity would be removed from the AONB. This information would complement the stated expectation that the landfall construction site and infrastructure for each scheme being present for twenty months.	
3	General comment	Natural England welcomes the assessment of cumulative impacts of the EA1N and EA2 OWFs with the construction and operational phases of Sizewell C nuclear power plant. In addition to the outlined mitigation to reinstate the landscape character and special qualities of the AONB post-construction, Natural England advises that all parties consider landscape enhancement/net gain opportunities within the AONB. We advise that there is an agreement put in place on how this could be achieved with the AONB partnership in consultation with Natural England and others.	





THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES  
2010

**Appendix E to the Relevant Representations of Natural England**  
**Seascape and Landscape Visual Impact Assessment (SLVIA) Natural**  
**England's Specialist Review of the 'offshore' elements of the EA1N project to**  
**inform our advice**

For:

The construction and operation of East Anglia One North Offshore Windfarms, 800 MW  
Wind Farm located approximately 36 km off the Suffolk coast, covering an area of  
approximately 208 km<sup>2</sup>.

Planning Inspectorate Reference: EN010077

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27 January 2020

## **Appendix E - Seascape Visual Impact Assessment (SLVIA)**

### **Abbreviations - Seascape**

AOD - above ordnance datum

'AONB' - Suffolk Coast and Heaths Area of Outstanding Natural Beauty

ASL - Astronomical Sea Level

C – Clearances (blade)

DCO – Development Consent Order

EA1N - East Anglia One North Offshore Windfarms

EA2 - East Anglia Two

EIA – Environmental Impact Assessment

ExA - Examining Authority

GLVIA3 - General Landscape and Visual Impact Assessment edition 3

HAT - Highest Astronomical Tide

LAT - Lowest Astronomical Tide

LCT - Landscape Character Type

LPA - Local Planning Authorities

LWM – Low Water Mark

MW – Mega Watts

NE - Natural England NE

NPPF - National Planning Policy Framework

NPS – National Policy Statement

OVA - Offshore Visibility Appendix

OWF – Offshore Wind Farm

PEIR – Pre-Examination Impact Report

SCH – Suffolk Coast and Heaths

SCP - Suffolk Coast Path

SCT – Seascape Character type

SHC - Suffolk Heritage Coast

SLVIA - Seascape and Landscape Visual Impact Assessment

SNH – Scottish Natural Heritage

ZTV - Zone of Theoretical Visibility

## Context

This document provides Natural England (NE) specialist review of the landscape, seascape, visual assessments and related chapters of the Environmental Statement as they relate to the **offshore** aspects of the projects. In keeping with our previous comments on the potential landscape and visual effects likely to arise from the development we limit our comments to those effects associated with the Suffolk Coast and Heaths Area of Outstanding Natural Beauty ('AONB') and its seascape setting.

The presence and role of the Suffolk Heritage Coast (SHC) within the AONB helps to define that part of the designated area which is most likely to experience significant adverse effects arising from the EA2 OWF project. Although a defined rather than a designated landscape the SHC covers a geographical area, not including the offshore portion (which extends 1km from the LWM), which lies wholly within the AONB. To understand the extent of the indirect onshore geographic influence of the EA2 offshore elements it will therefore help the Examining Authority (ExA) to refer to the boundary of the SHC.

For landscape and seascape effects both within and outside of the AONB we advise that close attention is paid to the comments and advice provided by the relevant Local Planning Authorities. To ensure that the ExA can reach a fully informed determination of this OWF project as it pertains to the AONB we recommend that close attention is paid to the advice of the AONB Partnership. Their detailed local knowledge of the designated landscape, its special qualities, its management needs and the relationship between land and sea in supporting the area's statutory purpose will provide greater depth and detail than can be provided by Natural England.

NE offers its comments and advice without prejudice. Our comments and advice on the landscape, seascape and visual effects of the offshore elements of the OWF project may change as further evidence and information emerges from further assessments by the applicant as a part of the Environmental Impact Assessment (EIA) process. We may also receive other relevant information from the local authorities, the AONB Partnership or other sources. NE will also be collecting its own evidence to inform our comments and advice and may continue to do so until the end of the examination process.

## **Comments on EA1N**

**The following documents have been referred to for this response:**

- Chapter 6 Project Description
- Chapter 28 Offshore Seascape, Landscape and Visual Amenity
  
- Appendix 28.2 SLVIA Methodology
- Appendix 28.3 Seascape Assessment
- Appendix 28.4 Landscape Assessment
- Appendix 28.5 Visual Assessment
- Appendix 28.6 Suffolk Coastal Path
- Appendix 28.7 Cumulative SLVIA
- Appendix 28.8 Offshore Windfarm Visibility
  
- Figure 28.6 Hub Height ZTV (300m)
- Figure 28.7 Hub height ZTV with Viewpoint Locations
- Figure 28.8 Horizontal Angle ZTV
- Figure 28.9 Energy Developments Location Map
- Figure 28.14 Visual Receptors
- Figure 28.20 Visibility Range
- Figure 28.21c Cumulative ZTV with Greater Gabbard and Galloper Wind Farms
- Figure 28.24 Suffolk Coastal Path (North) Visibility with Landscape (District and County) and Seascape Character
- Figures 28.27 to 28.40 and 28.32 (all images)

### **1. Summary of comments**

Natural England agrees that:

- i. 300m turbines at the internal separation distances stated represent the worst case scenario for landscape and visual effects.
  
- ii. No significant adverse landscape and visual effects are likely to affect the AONB. As a result there are no adverse effects on the special qualities of the AONB.

Natural England has the following concerns:

- iii. With some of the explanatory text used.
  
- iv. That the night time effects of navigational lighting have still not been assessed for rural locations.
  
- v. The significant cumulative effects with the EA2 OWF project.

## **2 Note about the visible height of off-shore wind turbines in respect of EA1N**

1. In our response to the PEIR for the s42 consultation (March 2019) we included the following Natural England observations on the increase in turbine size which has taken place over the past 15 years and the proximity of these structures to the coastlines of designated landscapes. entitled ‘*Turbine height and proximity to the coastline of a designated landscape*’

*‘...The last 10 years has witnessed a significant upscaling of the technology used in the offshore wind farms. Within this time turbines have dramatically increased both in output capacity and size from the 3.6MW machines of 132m height (Sheringham Shoal, Norfolk Coast AONB, closest point 17km) to 6.3MW machines of 181m height (Galloper, Suffolk Coast and Heaths AONB; closest point 29.3km) to the emerging industry ‘standard’ of 15MW machines of 300m height as proposed for EA2 (closest point 29.6km); capacity has increased nearly fourfold and size more than doubled. When viewed from the same location, the bigger the structure the greater it’s visual prominence. Similarly the bigger the structure the greater the distance (and geographic spread) from which it can be seen. In defining our comments to this scheme Natural England has been mindful of these facts and where appropriate has drawn comparisons between previously consented schemes located in the seascape setting of a designated landscape and EA2 to illustrate the likely influence of this upscaling in technology...’*

2. Since providing these comments we have undertaken further sites visits<sup>1</sup> and analysis to illustrate this point further. The information and evidence gathered is presented below. We have done so in order to provide some evidence which compares the effect of existing offshore arrays, noting that for these OWF projects none of the actual visual effects were considered significant at the time of determination, with those proposed for EA1N.
3. Our analysis is based upon the established method for calculating the visible height of structures off-shore. This method is set out in the Scottish Natural Heritage (SNH) in their 2017<sup>2</sup> publication ‘*Visual Representation of Wind Farms Guidance 2.2*’. A diagrammatic representation is shown below for the simplified case when atmospheric refraction is ignored<sup>3</sup>.

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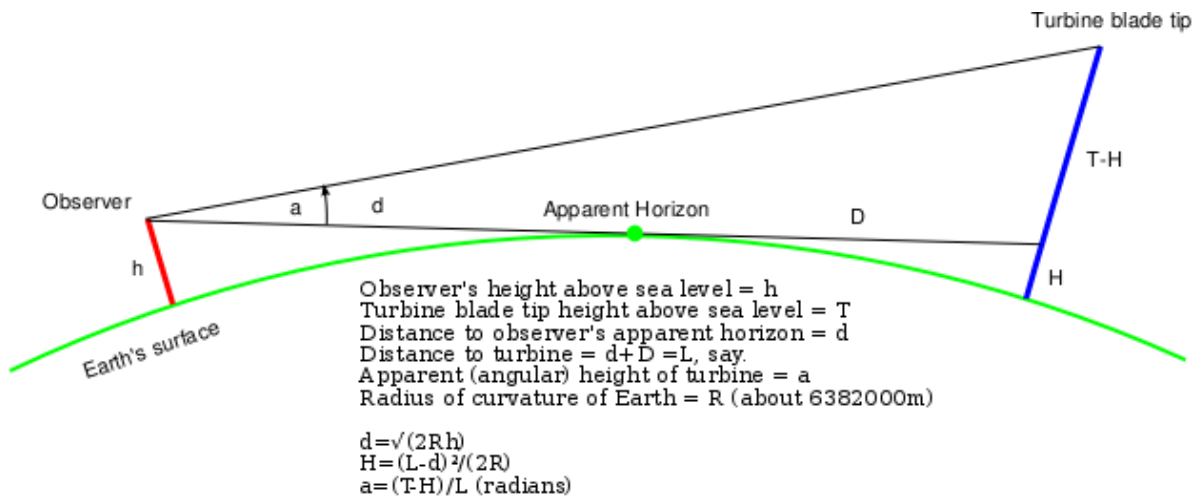
<sup>1</sup> Suffolk Coast and Heath AONB on the 12<sup>th</sup> and 13<sup>th</sup> August 2019; south of Aldeburgh, Orford Ness, Bawdsey and Shingle Street visited (Greater Gabbard and Galloper OWF). In addition of the 18<sup>th</sup> and 19<sup>th</sup> June 2019 sites were made to coast at Covehithe, Walberswick, Sizewell and Thorpeness with the applicant.

<sup>2</sup> <https://www.nature.scot/sites/default/files/2017-06/Publication%202017%20-%20Visual%20representation%20of%20wind%20farms%20-%20Version%202.2%20A2203860.pdf>

See Annex D p.49.

<sup>3</sup> <http://www.challengenavitus.org.uk/photo-montages.html>.

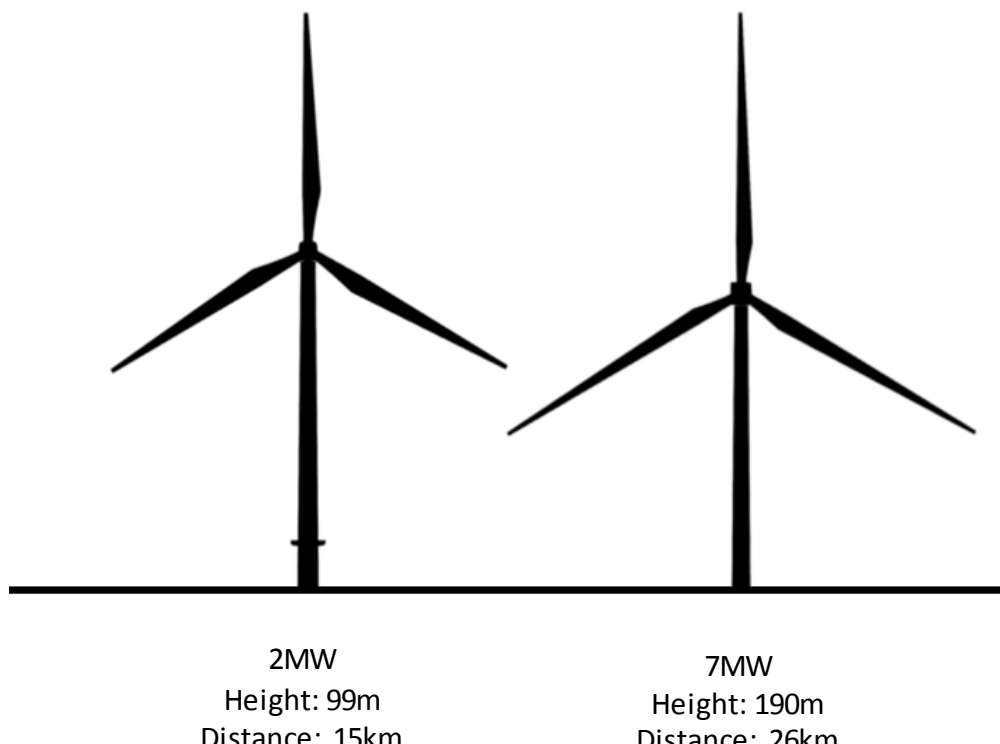
**Figure 1 Turbine Visibility**



- Due to the distances involved and heights of the structures, the effect of Earth's curvature on the visible heights is a critical factor in determining the significance of the landscape and visual impacts, as are the distances to the turbines and the elevation from which the turbines are viewed. This method provides the necessary corrections for Earth's curvature and results in the apparent, or angular ( $a$ ), height of a turbine as seen by an observer. Therefore, it is possible to compare the apparent height of a 134m turbine located at 25km away to that of a 182m turbine located at 29km. This in turn can be used to predict the apparent height of (the not yet built) 300m turbines at 40.1 km, as used in the EA1N worst case scenario. As the effects of the former are known, their visual influence can be used to judge the likely effect of the latter when viewed from similar elevations.

**Figure 2: The diagram below provides an illustration of this effect.**

**Comparative Height of Turbines**



5. The results of this analysis are presented here for an observer whose eye level is 6.5m Above Ordnance Datum (AOD), which is representative of shoreline heights for the distance offshore figures used i.e. at Covehithe and Orford Ness. As per best practice the small “correction” for atmospheric refraction was set at 0.075 as suggested by the SNH guidance, but please note that for long-distance views across water this “correction” is unreliable and there precaution is required. Due to having incomplete data we have used heights AOD as a close approximation to heights ASL<sup>4</sup>.

**Table 1: Turbine Visibility**

Array	Visible Turbine Height ASL (blade tip) (m)	Apparent Height of Turbine (°)	Actual Turbine Height (blade tip) (m)	Distance offshore (km)
<b>Greater Gabbard</b>	115	<b>0.275</b>	134	25
<b>Galloper</b>	155	<b>0.309</b>	180	29
<b>EA1N</b>	239	<b>0.342</b>	300	40
<b>EA1N (250m)</b>	189	<b>0.270</b>	250	40
<b>EA1N (200m)</b>	139	<b>0.199</b>	200	40

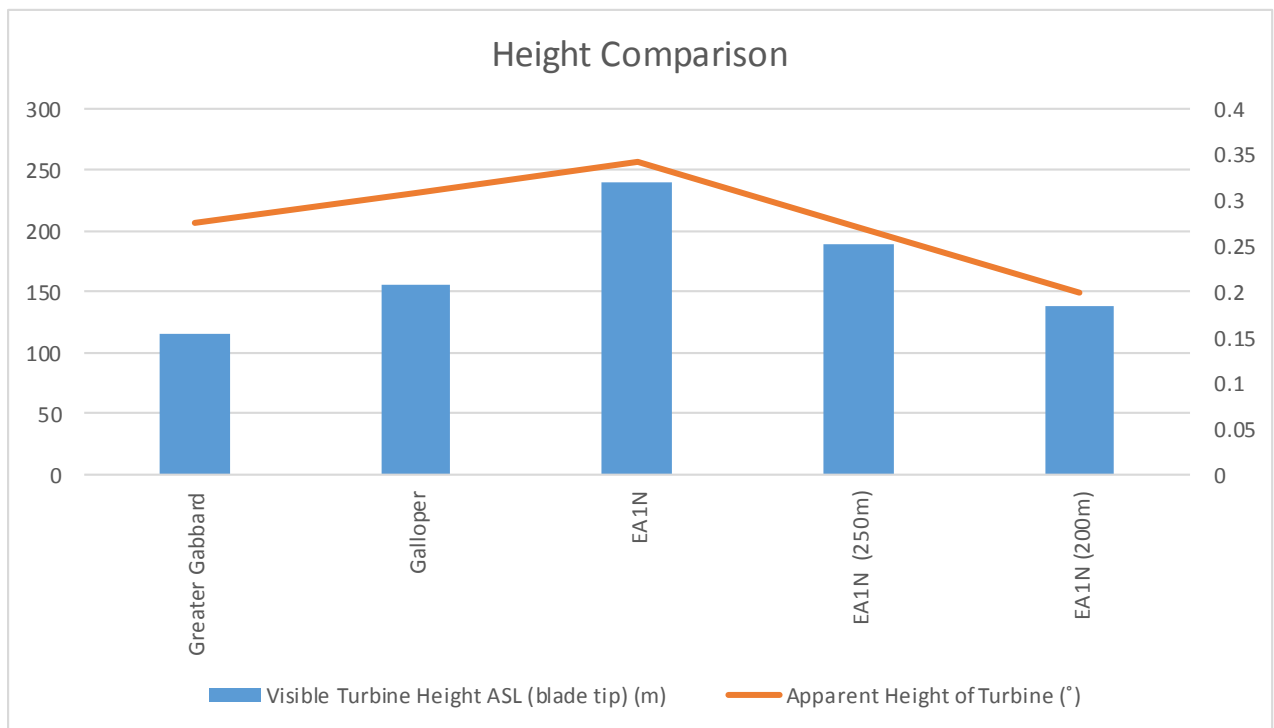
6. Also listed are calculations for 250m turbines located at 40.1km offshore in order to show the predicted visible and apparent heights for such turbines.

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<sup>4</sup> The observer's eye-height should be calculated ASL (Astronomical Sea Level) not AOD Newlyn as should turbine tip heights. This is because visibility is actually affected by the state of the tide and the offset between AOD Newlyn and mean sea level near the viewpoint. Turbine blade clearances (C) are normally quoted as 22 to 30m above HAT, so theoretically, the greatest visibility occurs at LAT when the turbine blade tip will be (HAT-LAT)+C+rotor-diameter above the actual sea level (and the observer will also be highest ASL). However the differences are not usually great enough to significantly affect the calculation. For more see [http://geomatix.net/tides/tidal\\_levels.htm](http://geomatix.net/tides/tidal_levels.htm)



**Figure 3: Height Comparison**



7. In order to compare 'like with like' the predicted apparent height figures for the Galloper and Great Gabbard arrays can be used to inform the determination of the EA1N application, with Galloper being the largest of these.
8. As these figures show for 300m turbines located at 40.1 km distance, the apparent height of these turbines would be around 1.11 times greater than those of the Galloper array. This figure has been calculated using the data in the '*Apparent height of the visible turbine*' column of **Table 1** above. See the diagrammatic representation of the geometry above for an illustration of this angle (a). (Figure 3)
9. In addition the table below shows the predicted apparent height of 300m turbines at the AONB viewpoints Natural England judges most likely to be effected by the OWF project. For these calculations the AOD of the viewpoint location plus 1.5 for the height of the viewer has been used.

**Table 2 Viewpoints most likely to effected by the OWF projects**

	Viewpoint	Visible Turbine Height ASL (blade tip) (m)	Apparent Height of Turbine (°)	Distance offshore (km)
4	<u>Covehithe (300m)</u>	<b>239.2</b>	<b>0.342</b>	40.1
	(250m)	<b>189.2</b>	<b>0.270</b>	40.1
	(200m)	<b>139.2</b>	<b>0.199</b>	40.1
5	<u>Southwold (300m)</u>	<b>229.1</b>	<b>0.309</b>	42.5
	(250m)	<b>179.1</b>	<b>0.242</b>	42.5
	(200m)	<b>129.1</b>	<b>0.174</b>	42.5
6	<u>Gunhill Southwold (300m)</u>	<b>241.0</b>	<b>0.322</b>	42.9
	(250m)	<b>191.0</b>	<b>0.255</b>	42.9
	(200m)	<b>141.0</b>	<b>0.188</b>	42.9
7	<u>Walberswick (300m)</u>	<b>222.0</b>	<b>0.288</b>	44.1
	(250m)	<b>172.0</b>	<b>0.223</b>	44.1
	(200m)	<b>122.0</b>	<b>0.159</b>	44.1
8	<u>Dunwich (300m)</u>	<b>206.8</b>	<b>0.250</b>	47.3
	(250m)	<b>156.8</b>	<b>0.190</b>	47.3
	(200m)	<b>106.8</b>	<b>0.129</b>	47.3
9	<u>Dunwich Heath (300m)</u>	<b>233.6</b>	<b>0.275</b>	48.7
	(250m)	<b>183.6</b>	<b>0.216</b>	48.7
	(200m)	<b>133.6</b>	<b>0.157</b>	48.7

10. The SLVIAs for the Galloper and Great Gabbard OWFs all judged that significant visual effects would not occur at their respective minimum separation distances from the coastline of the AONB (see Tables A and B above). The chart indicates that for the Suffolk coast non-significant effects are likely to occur at apparent heights below 0.350° with significant effects confirmed<sup>5</sup> for apparent heights above 0.400°. However the horizontal spread of an array and the number of turbines visible are also important factors in reaching this judgement. As with the Galloper array the lateral spread of EA1N, as it appears from the AONB coastline is small. Figure 28.21c from the Environmental statement helpfully illustrates the relative positions of these arrays.

<sup>5</sup> See EA2 Environmental Statement Chapter 28 Table 28.11

### 3. EA1N Detailed Comments

Point	ES Section	Page No.	Natural England's Comment	Risk
<b>3.1 Comments on Visibility</b>				
3.1.1	28.3 Para. 16 and 17 Also 6.5.15  Appendix 28.8  Para. 5 and 6	4 and 5	<p>Natural England notes that the text used in Offshore Visibility Appendix (PIER Appendix 28.7, ES Appendix 28.8) are essentially the same. At the s42 consultation Natural England's provided extensive advice on offshore visibility. As we still have concerns about the commentary provided in these appendices we reiterate the relevant parts of our s42 consultation response. We also add further comments in response to new text in the ES SLVIA and as a result of the evidence gathered by NE in the summer of 2019.</p> <p>The information and evidence about visibility is important additional information about the character of the seascape setting of the AONB and Suffolk Heritage Coast. It is certainly a factor in defining the worst case scenario for the OWF project.</p> <p>As would be expected periods of '<i>very good</i>' and '<i>excellent</i>' visibility occur most frequently during the summer. Outdoor recreational activity in the AONB (reflected in the visual receptor groups identified in the visual assessment) is at its peak in the summer months (as acknowledged in Chapter 28 para. 134 p.46).</p> <p>GLVIA 3 makes no reference to the frequency of when '<i>very good</i>' or '<i>excellent</i>' conditions need to exist in order to define the worst case scenario. As a result frequency is not a critical factor in judging the significance of effect. Natural England advises therefore that the statement contained in the first sentence of 28.8 para. 6, although useful in terms of context, is discounted as it is not a factor in judging significance. Natural England agrees with the statement contained in the second sentence of this paragraph as this is based on the conclusion of the visual assessment.</p>	

			<p>At its closest point to the AONB coast line EA1N is 40km distant. NE has assumed that the array would only be visible during periods of excellent visibility which are predicted to occur for approximately 20% of the time. Approximately 6 turbines (11%) and potentially 2 other associated structures are located within 40km of the shore, with just a two turbines located within 40km of the AONB coastline. The remaining 47 of the turbines (89%) plus a further 2 associated structures are located beyond 40km. Visibility out to 40km is predicted to occur for 34% of the time whilst visibility beyond 40km can be anticipated to occur for 21% of the time. These numbers have been derived from measurements taken from Figure 28.20.</p>	
3.1.2	Appendix 28.8 Para. 8 and 12	2 and 4	<p>At the S42 consultation NE commented on the information and statements contained in paragraphs 8 and 12 of 28.8 (paragraphs 7 and 11 of PEIR document 28.7). We have since reviewed our comments and provided an update here.</p> <p>In paragraph 8 we note the reference to windfarms in the English Channel in the final sentence and understand that the report was published in 2012 with fieldwork presumably being undertaken in 2011. In 2011 there were no windfarms located in the English Channel; the first and only such OWF project located in the English Channel to date is Rampion, the construction of which commenced in 2015.</p> <p>A copy of quoted research document '<i>Offshore Wind Turbine Visibility and Visual Impact Threshold Distances (2012)</i><sup>6</sup>, included as an appendix to the ES would be helpful.</p> <p>In paragraph 12 we note that the maximum height of the turbines included in the study quoted is 153m, whereas the EA2 turbines used in the worst case realistic scenario are 147m taller. In</p>	

<sup>6</sup> <https://www.cambridge.org/core/journals/environmental-practice/article/research-article-offshore-wind-turbine-visibility-and-visual-impact-threshold-distances/59A51F3CD207849FC7F5BD986F15B2CB>

			<p>addition we note from the abstract of the quoted research document that:</p> <p><i>'Results showed that small to moderately sized facilities were visible to the unaided eye at distances greater than 42 km [26 miles (mi)], with turbine blade movement visible up to 39 km (24 mi). At night, aerial hazard navigation lighting was visible at distances greater than 39 km (24 mi). The observed wind facilities were judged to be a major focus of visual attention at distances up to 16 km (10 mi), were noticeable to casual observers at distances of almost 29 km (18 mi), and were visible with extended or concentrated viewing at distances beyond 40 km (25 mi).'</i></p> <p>This research is helpful in framing discussion about visibility and separation distances for turbines up to 153m although makes no reference to the AOD height of the observer. However, it does not assist in judging the significant effect for visual receptors located within designated landscapes and should therefore be treated with significant caution and not considered within any determination.</p>	
<b>3.2 Comments on night time effects</b>				
3.2.1	28.3.2.5 Para. 38	10	<p>Natural England's advice at s42 included comments on the night time effects produced by the navigation lighting associated with the EA1N turbines. From our review of the ES SLVIA documents we can find no evidence that our comments have been addressed. We request therefore that these effects are assessed and the results used to inform the significance of effect judgement for both landscape and visual receptors and the potential such effects might on the special qualities of the AONB.</p> <p>For clarity we repeat our comments at s42 below. Please note these have been amended slightly to reflect our updated advice as presented elsewhere in this document.</p> <p>We note at section 28.3.3 para. 42 p.12 that embedded mitigation measures include the fitting of <i>'aviation warning lights to significant peripheral wind turbines and will allow for reduction in lighting intensity at and below the horizon when visibility from every wind turbine is more than 5km'</i>. We presume therefore that the worst case scenario would be that illustrated in figure 28.28g where 2000 candela lights are shown.</p>	

			<p>Natural England is unsure as to why the assessment of night time effects has been restricted to LCT 25, which only affects the urban areas of Southwold and Aldeburgh. Dark skies are an important component of the special qualities of the AONB and it is clear from the figures 28.28g and 28.37f that the aviation navigational lighting affixed to EA1N has the potential to adversely affect these. Our experience of other OWF suggests that aviation navigational lighting is a conspicuous feature when viewed from the shore and that atmospheric conditions, such as sea fog, can amplify the adverse effect as aviation navigational lights flash in sequence.</p> <p>Natural England wishes to see an assessment of the effects of navigational lighting on night time skies, based upon the worst case scenario for the use of navigational lighting, on the following LCTs:</p> <ul style="list-style-type: none"> <li>• LCT 07 Estate Sandlands (Areas A)</li> <li>• LCT 29 Covehithe Broad and Easton Broad</li> </ul> <p>We request that a visual assessment is undertaken for the receptor group ‘<i>beach users</i>’ from the viewpoints located within the relevant LCTs namely;</p> <ul style="list-style-type: none"> <li>• Viewpoints 04, 06, 07, 08 and 09</li> </ul>	
<b>3.3 Comments on the AONB Baseline</b>				
3.3.1	28.5.4 Para 141	40	<p>For the s42 consultation Natural England made comments on the anticipated trends in the AONB baseline conditions. The text in the ES SLVIA is essentially the same as that used in the PEIR SLVIA. Therefore for clarity we repeat our comments from the s42 consultation below.</p> <p>Natural England does not understand the relevance of this section to defining the existing landscape baseline against which the significance of this OWF project will be judged. The aims and objectives of the AONB Management Plan (para. 141) focus on the conservation and enhancement of the natural beauty of the designation and will help guide future development. As national planning policy (NPPF para. 172) seeks to limit major development in designated landscapes it is unlikely that the baseline conditions, as they relate to the developed environment, will alter greatly in the forthcoming decades. The exception is Sizewell C, the DCO</p>	

			for which is yet to be submitted.	
<b>3.4 Comments on Seascape Assessment</b>				
3.4.1	28.6.3 Table 28.7	43	<p>For the s42 consultation we requested that maintenance activities associated with the operational phase of the OWF project are incorporated into the seascape assessment; see Chapter 6 6.5.15 p.59 – 60. From our review of the ES SLVIA we cannot find evidence that this has been done. We therefore ask again that this is done.</p> <p>We offer the following comments on the seascape assessment as set out in the ES SLVIA. As with our comments at s42 our advice relates solely to the contribution that SCT 06 makes to the seascape setting of the SCAONB.</p> <p><u>SCT 06 Offshore Waters</u></p> <p>We note the amended wording in paragraph 152 in respect of the contribution LCT 06 makes to the seascape setting of the AONB and welcome this. The following sentence is particularly helpful in clarifying the relationship.</p> <p><i>'Whilst the SCT (06) forms part of the wider seascape setting of the AONB the land has very little influence on the character of the SCT itself'.</i></p> <p>In addition the following sentence in paragraph 155 (Chapter 28 p.46) is also helpful;</p> <p><i>'It (EA1N) will however result in changes to the seascape character, perceived from the land, particularly that portion of the Offshore Water LCT (06) which forms the seascape setting of the AONB'.</i></p>	

### 3.5 Comment on Landscape Receptors

We restrict our comments to those LCT sub areas within the AONB and which fall within the Study Area.

**Table 3: Summary of Natural England's position based on Table 28.8 of the ES**

Landscape Character Type	Environmental Statement Judgement	Natural England's position
<b>Coastal Dunes and Shingle Ridges (LCT 05)</b>		
Area C	Not Significant	Agree
<b>Coastal Levels (LCT 06)</b>		
Area B	Not Significant	Agree
Area C	Not Significant	Agree
<b>Estate Sandlands (LCT 07)</b>		
Area A	Not Significant	Agree
Area B	Not Significant	Agree
Area C	Not Significant	Agree
<b>Open Coastal Fens (LCT 08)</b>		
Area A	Not Significant	Agree
Area B	Not Significant	Agree
Area C	Not Significant	Agree



Wooded Fens (LCT 29)		
Covehithe Broad and Easton Broad	Not Assessed	Not Significant

Point	ES Section	Page No.	Natural England's Comments	Risk
3.5.1	28.7.3  Table 28.8	54	<p>For the s42 consultation Natural England advised that we provisionally agreed that significant effects were unlikely to occur for those LCT listed in Table 28.8 above.</p> <p>Following a review of the ES SLVIA we confirm that we agree with the assessment of no significant landscape effects for those LCTs listed in Table 28.8 above.</p> <p>We conclude therefore that no adverse landscape effects will occur within the AONB or its seascape setting.</p>	

### 3.6 Comments on AONB Special Qualities

**Table 4: Summary of Natural England's position based on Table 28.10 of the ES**

<b>AONB Special Qualities</b>	<b>Environmental Statement Judgement (construction and operational phases)</b>	<b>Natural England's position</b>
<b>Landscape Quality</b>		
Intactness	Not Significant	Agree
Condition of features	Not Significant	Agree
Influence of Incongruous features	Not Significant	Agree
<b>Scenic Quality</b>		
Distinctive sense of place	Significant	Agree
Striking landform – sea cliffs and shingle beaches	Significant	Agree
Striking landform – coastal cliffs, shingle beaches and estuaries	Not Significant	Agree
Visual interest in patterns of land cover	Not Significant	Agree
Appeal to the senses – Interrelationship of features	Not Significant	Agree
Appeal to the senses – large open vistas	Not Significant	Agree
Appeal to the senses – Sensory stimuli and 'big Suffolk skies'	Not significant	Agree
<b>Relative Wildness</b>		
Sense of remoteness – absence road and rail routes	Not significant	Agree

Sense of remoteness – pockets of relative wildness	Not significant	Agree
Sense of remoteness – semi-natural habitats	Not significant	Agree
Sense of remoteness – largely undeveloped coastlines	Not significant	Agree
Sense of openness and exposure – big Suffolk skies	Significant	Agree
Sense of passing time and a return to nature	Not significant	Agree
<b>Relative Tranquillity</b>		
Contributions to tranquillity	Not significant	Agree
Distractors from tranquillity	Not significant	Agree

Point	Section	Page No.	Natural England's Comments	Risk
3.6.1	28.7.3.2 Table 28.9	65	<p>For the s42 consultation Natural England advised that we provisionally agreed that significant effects were unlikely to occur on the special qualities of the AONB.</p> <p>Following a review of the ES SLVIA we confirm that we agree with the assessment of no significant effect on the special qualities of the AONB or its seascape setting.</p>	

### **3.7 Comments on Viewpoints and visual receptor summary**

In keeping with our comments provided in our response to the s42 consultation NE restricts its advice to those visual receptors most associated with the statutory purpose of the AONB i.e. enjoyment of the natural beauty afforded by the designation. For simplicity we have coded these receptors as follows:

- A. Beach users.
- B. Walkers and cyclists.
- C. People sitting / viewing from seafront benches.
- D. Visitors / Tourists (Dunwich).

**Table 5: Summary of Natural England's position based on Table 28.11 of the ES**

<b>Viewpoint</b>	<b>Separation Distance (km)</b>	<b>Environmental Statement Judgement (construction and operational phases)</b>	<b>Natural England's position</b>	<b>Visual Receptor Groups</b>
3 Covehithe	40.1	Not significant	Agree	A
4 Southwold	42.5	Not significant	Agree	A, B, C
5 Gun Hill, Southwold	42.9	Not significant	Agree	A, B, C
6 Walberswick	44.1	Not significant	Agree	A, B, C
7 Dunwich	47.3	Not significant	Agree	A
8 Dunwich Health Coast	48.7	Not significant	Agree	B, D

Point	ES Section	Page No.	Natural England's Comments	Risk
3.7.1	28.8.3 Table 28.10	78	<p>For the s42 consultation Natural England advised that we provisionally agreed that significant effects were unlikely to occur for those viewpoints listed in Table 28.8 above. Following a review of the ES SLVIA we confirm that we agree with the assessment of no significant visual effects for those LCTs listed in Table 28.11 above.</p> <p>We conclude therefore that no adverse visual effects will occur within the AONB or its seascape setting.</p>	

### 3.8 Comments on Suffolk Coastal Path

**Table 6: Summary of Natural England's position based on Table 28.13 of the ES**

Suffolk Coastal Path	Environmental Statement Judgement (construction and operational phases)	Natural England's position
Section 03	Not significant	Agree
Section 04	Not significant	Agree
Section 05	Not significant	Agree
Section 06	Not significant	Agree

Point	ES Section	Page No.	Natural England's Comments	Risk
3.8.1	28.8.3.4 Table 28.12	88	<p>For the s42 consultation Natural England advised that we provisionally agreed that significant effects landscape and visual were unlikely to occur for those sections of the path listed Table 28.13 above.</p> <p>Following a review of the ES SLVIA we confirm that we agree with the assessment of no significant landscape and visual effects for those sections of the path listed Table 28.13 above.</p>	

Point	ES Section	Page No.	Natural England's Comments	Risk
<b>3.9 Comments on Cumulative Effects</b>				
3.9.1	28.9 Tables 28.14, 28.15 and 28.17	89 - 121	<p>As a result of interactions with the EA2 OWF project Natural England agrees that the EA1N OWF project will not meaningfully contribute to the significant cumulative effects of these two OWF projects.</p> <p>The EA1N and EA2 ES SLVIAs predict that significant cumulative effects for the following receptors;</p> <ul style="list-style-type: none"> <li>• LCTs: 05 (Area C), 06 (Area B) and 07 (Area A)</li> <li>• Viewpoints: 3, 4, 5, 6, 7, 8, 9, 11, 12 and 13</li> <li>• SCP Sections: 04, 05, 06 and 07</li> </ul> <p>Natural England agrees with these judgements and advises that significant cumulative effects are also likely for:</p> <ul style="list-style-type: none"> <li>• LCT 29 Covehithe Broad and Easton Broad</li> <li>• Viewpoint 10.</li> <li>• SCP Section 07.</li> </ul> <p>Although the contribution the EA1N project makes to these cumulative effects is small, Natural England advises that opportunities should be sought to reduce this contribution as far as possible within the design envelope of the OWF project. In particular the use of lower turbines (250m) for the EA1N OWF project would assist in reducing the cumulative effects predicted in both the EA2 and EA1N ES SLVIA. The possibility for this should be explored by the applicant in order that further embedded mitigation is introduced into the design of the EA1N OWF project which would help reduce the adverse cumulative effects predicted.</p>	

			We note at para. 24 p.7 that the ' <i>design envelope would allow a mixture of turbine sizes to be used in the final detailed design</i> ' and suggest that the use of shorter turbines (250m) at the western edge of the EA1N development area is likely (based upon the apparent height measurements provided above) to assist in reducing the significant cumulative effects predicted in the EA2 and EA1N ES SLVIAs.	
<b>3.10 <u>Comments on Summary and Conclusions</u></b>				
3.10.1	28.13	128	<p>Natural England agrees with the assessment of no significance effect for landscape and visual receptors within the AONB or its seascape setting. We also agree with the judgement that of no significant effects on the special qualities of the AONB and users of the Suffolk Coastal Path.</p> <p>Although we disagree with some of the reasoning set out in the Summary and Conclusions section of Chapter 28 we do not believe our advice on these is required.</p>	
3.10.2	28.13 Para. 324 and 325	131	<p>We agree that the contribution made by the EA1N OWF project to the cumulative effects of the EA2 OWF project is small. This is due entirely to the limited lateral spread of the EA1N array and greater separation distance between the western edge of the development area and the coast of the AONB.</p> <p>Unlike the EA2 OWF project the technology choice used to inform the worst case scenario, although the same, is not a critical issue due to the greater separation distance between the coast and development area. However we advise that opportunities do exist to reduce this contribution further through the use of shorter (250m) turbines.</p> <p>NE does not consider that the combined lateral spread of the two arrays is likely to result in significant adverse visual effects. The reduction in the lateral spread of the EA2 array has eliminated the possibility of a 'curtaining effect' where views of the horizon are obscured due to the apparent merging of the EA1N and EA2 arrays.</p>	





THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

**Appendix F to the Relevant Representations of Natural England**

**All other matters – Natural England's nature conservation advice**

For:

The construction and operation of East Anglia ONE North Offshore Windfarms, a 800 MW Wind Farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208 km<sup>2</sup>.

Planning Inspectorate Reference EN010077

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27 January 2020

## **Appendix F – Natural England’s nature conservation advice on all other matters**

**In compiling this response the following documents have been considered:**

- 6.1.4 EA1N Environmental Statement Chapter 04 Site Selection and Assessment of Alternatives
- 6.1.6 EA1N Environmental Statement Chapter 06 Project Description
- 6.1.7 EA1N Environmental Statement Chapter 07 Marine Geology, Oceanography and Physical Processes
- 6.1.9 EA1N Environmental Statement Chapter 09 Benthic Ecology
- 6.1.10 EA1N Environmental Statement Chapter 10 Fish and Shellfish Ecology

### **1. Chapter 6.1.4 and 6.1.6 Project Description and Site Selection and Assessment of Alternatives**

#### **1.1 Main issues**

- 1.1.1** It is not clear whether the identical red line boundary identified as the cable corridor area is intended for both EA1N and EA2, i.e. will all cable installation for both projects take place within the same 32m wide corridor or will there be 2x 32m cable corridors, one for EA1N and one for EA2? What is the width of the red line boundary? This is something that needs to be clearly defined throughout the project description and Development Consent Order/Deemed Marine Licences (DCO/DML) as has implications in terms of impacts. Please see Appendix D for Natural England’s comments on the Landscape and Visual Impact Assessment (LVIA).

## 1.2 Detailed Comments

Point	Section	Natural England's Comments	Risk
<u>Document used:</u> 6.1.4 EA1N Environmental Statement Chapter 04 Site Selection and Assessment of Alternatives			
1.2.1	Table 4.1	Although the decision to cross the Sandlings SPA at the narrowest section is welcomed, it should be noted the decision to HDD or trench through this section has yet to be determined. There is still the potential for impacts and disturbance to occur to species using the SPA despite this narrowest route.	
1.2.2	4.9.1.5 Para 168	Natural England queries if the removal of a section of woodland been fully considered within the ES? Signposting to this would be useful. Has the applicant considered alternatives to not removing the woodland? Will the woodland be replaced?	
1.2.3	4.9.3.2.1 Para 108	Although Natural England recognises the options of crossing the SPA, trenching or HDD, the Applicant needs to make it clear what the impacts will be if the EA2 and EA1N cable routes are put in sequentially rather than at the same time (see point 4 below). This applies to other scenarios such as Aldeburgh road woodland.	
<u>Document used:</u> 6.1.6 EA1N Environmental Statement Chapter 06 Project Description			
1.2.4	6.7.2.1 & 6.7.3.1	It is not clear whether the cable corridor area described is intended for both EA1N and EA2, i.e. will all cable installation for <u>both</u> projects take place within the same 32m wide corridor or will there be 2x 32m cable corridors, one for EA1N and one for EA2?  If the cable routes for both EA1N and EA2 are installed within the same 32m wide corridor, will this occur sequentially or at the same time?	

## 2.6.1.7 Chapter 7 Marine Geology, Oceanography and Physical Processes

### 2.1 Main issues

Overall we advise that the assessment could be improved to provide greater clarity and understanding of the potential impacts to the Outer Thames Estuary SPA.

### 2.2 Detailed comments

Point	Section	Natural England's Comment	Risk
Document used: 6.1.7 EA1N Environmental Statement Chapter 07 Marine Geology, Oceanography and Physical Processes			
2.2.1	7.3.2.2 Para 33	Natural England advises that evidence needs to be presented to support statements that the maximum volumes of sediment released from sea bed preparation is five times greater than is likely to be released by scour? This currently seems quite arbitrary to base the assessment of scour during the operational phase on. Does this only apply to near-surface sediments as indicated by table 7.3?	
2.2.2	7.3.2.5.1 Para 44	Natural England welcomes the commitment by the Applicant to ensure sediment arising from any sand wave clearance would be deposited in locations which avoid sensitive features and enable sandwave recovery. These sensitive features are most likely to be <i>Sabellaria spinulosa</i> reef and by depositing the sediment within the vicinity of where it was dredged means the sediment will be retained within the sandbank system. The applicant should also be aware that much of the cable corridor sits within the Outer Thames Estuary SPA and there is the potential for disturbance to this species during any proposed works. Likewise, these subtidal sandbanks are key feeding areas for designated features such as red-throated diver. Therefore, for works within the sandbank areas there will need to be an assessment of the impacts against the conservation objectives for the site.	
2.2.3	7.3.2.5.1 Para 49	Assuming some of the cable protection will be laid within the SPA boundary, has the Applicant considered the loss of supporting SPA habitat for the designated features? This will need to be considered across several thematic areas including offshore ornithology, sediment transportation and benthic	

2.2.4	7.3.3 Para 59	Natural England welcomes bullet point 2, to allow local scour around the piles to minimise the scour protection footprint. This will minimise the habitat loss due to additional scour protection.	
2.2.5	Para 106 & 7.5.1.2 Para 107 -111	It is clear from this section that both project sites exhibit large areas of sandwaves and megaripples. This suggests to Natural England that a significant amount of sandwave clearance may be needed. If so, then it is essential that the applicant sufficiently considers the impact of disturbance and pre availability upon the interest features of the Outer Thames Estuary SPA, plus the potential loss of <i>Sabellaria spinulosa</i> reef such as <i>Sabellaria spinulosa</i> which should be avoided by micro-siting where possible.	
2.2.6	7.5.6 Para 130	This paragraph indicates that a relatively large area of the export cable corridor is predominantly silt. Has this change in sediment been fed into the impact assessment to determine the impact of trenching cables within this area? A greater percentage of silt within the sediment will result in a more persistent suspended sediment concentration following disturbance.	
2.2.7	7.6.1.1 Para 160 & 161	Is there any site specific evidence from the EA One construction of the actual sediment concentrations that were experienced during foundation installation?	
2.2.8	7.6.1.1.2 Para 164 & 165	Natural England clearly sees the benefits in assessing the worst case scenario for the impacts associated with the windfarm. However, for a greater perspective it would be interesting to understand the level of drilling that is likely to occur especially in these substrates. Can any predictions be drawn from EA One and the levels of drilling that occurred there?	
2.2.9	7.6.1.2.1 Para 180	This paragraph states “the resulting mound would be a measurable protrusion above the existing sea bed (likely to be tens of centimetres to a few metres high)...” This is a large range in the size of the potential mound that could be formed. It is not clear from the resulting text why this variation would exist. We assume it would be due to the varying sediment particle size from the drill arising, the sheer force of the foundations being installed or general sea bed preparation, however confirmation regarding this would be welcome. In addition the persistence of any mound/s would also need to be considered. If this is hard substrata then it would need to be potentially added to the in-combination assessment of	

		any cable/scour protection; especially in relation to potential impacts to the conservation objectives for the Outer Thames SPA.	
2.2.10	7.6.1.3.1 Para 196	Although the overall sediment release volumes would be low and confined to near the sea bed; it is not clear if there has been an assessment of the impacts at varying depths? This may apply more to the export cable installation further inshore.	
2.2.11	7.6.1.5 Para 218 & 224	As highlighted above, a relatively large area of the export cable corridor is predominantly silt. There seems to be no assessment of how this would affect the dispersion and settlement rate, particularly in nearshore shallow waters and any designated sites. Further information would be welcome.	
2.2.12	7.6.1.7 Para 237	Natural England queries if there is an opportunity to microsite jack up vessels legs if habitats of conservation interest are found in the area during pre-construction surveys?	
2.2.13	7.6.2.4 Para 274	Although the worst case scour volume of 50,000 m <sup>3</sup> is considerably less than the worst case volume of sediment released following sea bed preparation activities, this impact could be considered longer term as scour is likely to continue during the lifetime of the wind farm. It is not clear how this been considered and assessed by the applicant?	
2.2.14	7.6.2.5.1 Para 283 & 284	Table 7.32 concludes that the magnitude of effect on sea bed morphology due to the presence of foundations is high in the near field. Further expansion within this section on what this means for the receptors concerning this chapter would be useful. We understand the effect will be raised in other chapters, but it is hard to understand what this magnitude means for this particular topic.	
2.2.15	Table 7.36 & Para 322 Impact 5	The Applicant identifies this impact (changes to the sea bed morphology due to the presence of foundation structures) as not having the potential for cumulative impacts, as the foundation structures affects a discrete area of seabed. However, in-combination with other windfarms and their associated foundation footprints could these discrete areas be combined to create a large overall impact?	
2.2.16	7.7.1	Natural England queries what is this accepted threshold of 5 % and less for cumulative effect on baseline wave regime based upon? What are the predicted impacts of a greater than 2 % increase	

	Para 329 & 330	upon the sensitive receptors for marine geology, oceanography and physical processes? This needs expanding on further in this chapter.	
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### 3.6.1.9 Chapter 9 - Benthic Ecology

#### 3.1 Main Issues

3.1.1 Natural England welcomes the commitment by the Applicant to ensure sediment arising from any sand wave clearance would be deposited in locations which avoid sensitive features and enable sandwave recovery. These sensitive features are most likely to be *Sabellaria spinulosa* reef and by depositing the sediment within the vicinity of where it was dredged means the sediment will be retained within the sandbank system. The Applicant acknowledges that the seabed preparation and installation works has the potential to impact on red-throated diver from the Outer Thames Estuary SPA. Therefore, for works within the sandbank areas there will need to be an assessment of the impacts against the conservation objectives for the Outer Thames Estuary SPA within the Appropriate Assessment.

#### 3.2 Detailed Comments

Point	ES Section	Natural England's Comment	Risk
<u>Document used:</u> 6.1.9 EA1N Environmental Statement Chapter 09 Benthic Ecology			
3.2.1	9.3.2.1 Para 17	Natural England wishes to highlight that the worst case scenario for benthic ecology should be related to the foundation type and not the blade tip height. We believe that this has been covered in the chapter so raises as a point to note to the examiner.	
3.2.2.	9.3.2.1 Para 18	Natural England highlights that the Rochdale envelope remains all-encompassing including the use of Gravity Based foundations that have not been used in English waters to date. Therefore, we would question why these have continued to be included in the Environmental Statement (ES). Especially as it unrealistically skews some of the assessments.	
3.2.3	9.3.2.2 Para 20	Please be advised that there should be a commitment that is secured in one of the DCO/DML reference docs relating to the clearance of boulders should be away from habitat of conservation important.	



3.2.4	9.3.2.3.1.2 Para 23	Natural England supports the undertaking of sandwave levelling if as stated it reduces the need for cable protection. However, we do recognise that sandwave levelling activities (including sediment disposal), is likely to have a significant effect (LSE) on the interest features of the Outer Thames Estuary SPA and will need to be considered against the conservation objectives for the site in an Appropriate Assessment.	
3.2.5	Para 25 & 235	We also welcome the commitment to avoid sensitive receptors when undertaking sandwave levelling works, but where possible sand should be disposed in similar particle sized areas.	
3.2.6	9.3.2.3.4. Para 39	It would be helpful if the Applicant could provide context from East Anglia ONE in relation to the amount and location of cable protection placed along the export cable.	
3.2.7	9.3.2.3.4.2 Para 40	Natural England notes that the placement of new cable protection over the life time of the project is not included in the assessment. Is this because a separate marine licence will be applied for at the time?	
3.2.8	9.3.2.4.3 Table 9.2 & Para 232	Please be advised that the assessment of cable protection is not consistent with Natural England and MMO's recent draft advice position paper as provided for Boreas examination. Please see Appendix F2.  Ideally drill arisings should be deposited in areas of scour protection against to turbines and/or similar habitats.	
3.2.9	9.3.3.2.1 Para 63	Please be advised that mitigation in the form of micro-siting is not normally secured as part of the In Principle Monitoring Plan. Further consideration should be given to how best to do this.	
3.2.10	9.3.3.2.3 Para 67	Please be advised that the 50m buffer around <i>Sabellaria spinulosa</i> reef outside of designated sites is consistent with the advice provided to the aggregates industry. However we note that for East Anglia ONE that micro siting wasn't feasible at all locations. Please note that under NERC Act 2006 Section 40 there is a duty to avoid impacts to priority habitats such as <i>Sabellaria spinulosa</i> .	

3.2.11	9.3.4 Para 70	Natural England notes that no benthic ecology monitoring is proposed. However, this differs from what is outlined the In-Principal Monitoring Plan (Page 10, Table 2 within Section 1.6.4). Natural England agrees with the IPMP and advises that potential impacts to <i>Sabellaria spinulosa</i> reef areas will be required.	
3.2.12	9.5.5.1.1 Para 155	Please be advised that all reef is reef no matter the quality and is therefore protected as such .	
3.2.13	9.5.5.1.2 Para 157	Natural England welcomes the proposal to use horizontal directional drilling (HDD) under the beach to avoid impact to vegetated shingle, however, we query what would happen in relation to a bentonite outbreak?	
3.2.14	Para 221 & 236	Natural England notes that impacts to mapped sandbanks will be avoided. However, there remains an impact to 1,000,000m <sup>3</sup> of sediment, which is not small. It would therefore be useful know footprint/spatial extent to the impacts. However, at this stage we can advise that there would be a LSE which would require further consideration as part of an Appropriate Assessment.	
3.2.15	9.6.2.1.2 Para 246	Natural England notes that cable protection is proposed at the HDD exit point. Please be advised that there will need to be join up in relation to potential impacts to coastal processes and sediment transport.	
3.2.16	9.6.2.2 Para 248 & 9.6.2.4 Para 260 - 267	Natural England doesn't support the view that reef on artificial substrate is Annex I reef. Please see Appendix F3 for our advice on the Boreas offshore windfarm application. But it is recognised that as the works are not within a designated site there is no legislation under pinning this advice .	
3.2.17	Table 9.17, 9.18 & 9.19	Inclusion of assessment for potential interactions between impacts is welcomed .	

#### 4.6.1.10 Chapter 10 – Fish and Shellfish Ecology

#### 4.1 Main Issues

- 4.1.1 While Natural England defers to the expertise of CEFAS and the EIFCA in relation to fisheries, we raise concerns in relation to potential impacts to nursery grounds for fish species that are a key resource for designated site features of the Outer Thames Estuary SPA and the Southern North Sea SAC.

#### 4.2 Detailed comments

Point	Section	Natural England's Comment	Risk
<u>Document used:</u> 6.1.10 EA1N Environmental Statement Chapter 10 Fish and Shellfish Ecology			
4.2.1	10.6.1.1.1 Para 129	<p>Although larval abundances between 2007- 2017 have been relatively low as described by Figures 10.15 to 10.17, there is little mention of the nursery grounds in relation to Herring. Figure 10.14 indicates that the cable corridor in particular is a high intensity nursery ground. Whilst we defer to the expertise of CEFAS in relation to the impacts to nursery grounds. Natural England would welcome further consideration of how impacts to nursey grounds may effect prey availability for the interest features of the marine protected areas.</p> <p>Natural England also advises that the impacts of climate change, particularly the redistribution of species as a result, is considered within the assessments against the variety of species considered. Much of the spawning, nursery and larval abundance data ranges from 1998 to 2017. If the projects receive consent construction is unlikely to start for quite a few years' when changes from climate change could become more prominent.</p>	
4.2.2	10.6.1.2.1 Para 143	As raised in our Preliminary Environmental Information Report (PEIR) response, the reference used within this paragraph is very old, nearly 40 years. Is there any more recent evidence to show herring tolerance to elevated suspended sediment concentrations? Also what does Kiorboe <i>et al.</i> 1981 define as "short term" exposure?	

4.2.3	10.6.1.4.5.1 Para 198	With regards to sand eels and their limited capacity to flee, Figure 10.14 highlights the site sits within the nursery and spawning grounds as defined by Coull <i>et al.</i> 1998 and low intensity nursery grounds as identified by Ellis <i>et al.</i> 2010. Is there any further site specific information to determine the likelihood of being in direct contact with sand eel habitat and linking this to the noise modelling impacts to have a greater understanding of the risk given to sand eels?	
4.2.4	10.6.2.6 Para 320	Is there a reason why the applicant cannot commit to burying their cable to a minimum depth of 1.5m?	

## Natural England advice on cable protection assessment for offshore windfarms and inclusion in marine licenses

Natural England (NE) has drafted this note in order to provide clarity on how we consider cable protection to be covered in marine licences, and what information needs to be provided in an assessment to support those licences. The advice applies to all marine license applications for cable protection, at various stages of the project lifecycle, not just those considered under the NSIP consenting process. Much of the advice is also applicable to interconnector cables. This is intended to complement the Marine Management Organisation's (MMO) position on scour and cable protection licensing requirements during the Operation and Maintenance (O&M) phase.

### Section 1: Application stage

In the Environmental Statement (ES) for a project there must be a full assessment of the worst case scenario for cable protection to enable a decision to be made regarding the impacts of a project over the lifetime and in combination with other impacts and activities. In the case of European Marine sites (SACs and SPAs) the assessment must contain sufficient information to allow it to be ascertained (by the process of "appropriate assessment,"<sup>1</sup> and beyond reasonable scientific doubt) whether or not the project will have an adverse effect on the integrity of the site. If an absence of adverse effect on integrity cannot be demonstrated – see footnote 2.

It is acknowledged that the worst case scenario used for lifetime predictions is not the most desirable environmentally and, as more project specifics and environmental data emerge post-consent, the structure of plans and proposals can be amended to allow for the impacts to be reduced. This is in line with the avoid-reduce-mitigate hierarchy, which should be followed in relation to environmental impacts.

Not everything that is assessed in the Environmental Statement is permitted through the Deemed Marine Licence (DML) for the project, as some aspects require further updating and consultation (i.e. requirement to provide a scour and cable protection installation plan pre-construction, which sets out what is actually permitted). However, provision of the full project lifecycle information in the Environmental Statement at this stage is required to inform and support the decision making for the project and to provide a level of comfort that the lifetime impacts have been considered.

Where cable protection is proposed within an SAC or SPA it should be assumed that there will be a likely significant effect due to lasting habitat loss from the cable protection and an "appropriate assessment" would need to demonstrate that there would not be an adverse effect from the proposal. This is likely to be challenging in an SAC designated for its benthic habitats, therefore all alternatives will need to be fully explored. If it is not possible to avoid an adverse effect then the derogations route under Article 6(4) of the Habitats Directive<sup>2</sup>

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<sup>1</sup> Regulation 28 of the Conservation of Offshore Marine Habitats and Species Regulations 2017

<sup>2</sup> If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01992L0043-20130701&from=EN>

could be considered. Similarly a Marine Conservation Zone (MCZ) assessment would be requirement where cable protection was proposed in an MCZ. For clarity and to fit with subsequent marine licensing requirements, Natural England advise that this information should be presented separately for the following phases with the impacts assessed for each phase and together in total:

- Amount of cable protection to be laid during the construction phase<sup>3</sup> of the project.
- Amount of cable protection required for the maintenance of that laid during construction over the life time of the project.
- Amount of additional/ new cable protection that may be required to protect assets that become exposed during operation of the windfarm.
- Total amount of cable protection to be left in situ at the time of decommissioning (this may be the total of the above).

For cable protection to be laid during construction under the DML, an in principle scour and cable protection plan should be provided as part of the application. This should be updated and resubmitted pre-construction and should reflect up to date information informed by any new survey data, the cable burial risk assessment and additional information in relation to a navigation risk assessment and alternatives. Use of cable protection which leads to lasting habitat loss should be the final consideration after other alternatives have been exhausted and must be minimised as much as possible to reduce environmental impacts.

Where impacts are within a Marine Protected Area (MPA<sup>4</sup>), the assessment should consider the total amounts of cable protection proposed to be laid across the phases outlined above as an area and percentage of the MPA feature to be impacted. The significance of the proposal then needs to be considered against the Conservation Objectives for the site. Natural England's position paper on 'Small Scale Losses' sets out what is required by the Applicant to demonstrate that there are no Adverse Effects on site Integrity (AEoI).

Natural England will advise that a condition should be applied to all DMLs with wording similar to that outlined below, which will require return of information in relation to the as-built scenario, including the location, volume, area and coordinates of the cable protection laid.

*Not more than 4 months following completion of the construction phase of the authorised scheme, the undertaker must provide the MMO and the relevant statutory nature conservation bodies with a report setting out details of the cable protection used for the authorised scheme.*

*(2) The report must include the following information—*

*(a) location of the cable protection;*

*(b) volume and area of cable protection; and*

*(c) any other information relating to the cable protection as agreed between the MMO and the undertaker.*

*(3) For any subsequent deployments of cable protection following the completion of construction, the undertaker will provide an updated report as defined in (1) and (2) not more than 4 months following deployment of the cable protection.*

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<sup>3</sup> The duration of the construction phase should be clearly defined. See Section 2

<sup>4</sup> the MPA network consists of Marine Conservation Zones (MCZs), European Marine Sites (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)) and Sites of Special Scientific Interest (SSSIs).

## Section 2: Construction and maintenance

The period of construction finishes when developers notify the MMO of the end of construction. The cable protection laid during the period of construction is permitted under the DML and restricted to total volumes within the DML, although every effort should be made to minimise these volumes going into construction through the avoid-reduce-mitigate hierarchy.

As outlined above, the in principle scour and cable protection plan provided during the application phase should be updated and resubmitted pre-construction and should reflect up to date information informed by any new survey data, the cable burial risk assessment and additional information in relation to a navigation risk assessment and alternatives.

Natural England considers it is permissible to maintain cable protection that was placed at time of construction for the lifetime of the project through an Operations and Maintenance plan by adding additional cable protection to that which was laid during construction. We support the MMO's position that under an operations and maintenance plan submitted under the DCO maintenance material placement cannot exceed the seabed footprint of the cable protection laid during construction. As per the MMO's advice various timescales and information requirements will apply to these plans. A condition requiring return of information in relation to the as built scenario including the location, volume, area and coordinates of the cable protection laid should be secured as part of these plans.

## Section 3: Operational phase

Natural England considers that any new/additional cable protection to be laid during the operational lifetime of the windfarm is not permitted under the DML and requires a separate marine licence. We acknowledge that there is a desire for longer term licences and support the MMO's position that 10 year licences can be considered for laying of additional cable protected in areas outside MPAs.

This is not to say that cable protection will not be permitted over the lifetime of the project (outwith MPAs); but a separate marine licence process (to that of the DCO/DML) is advised to ensure that proposals can be adequately assessed using up to date information on which to base the assessment (which may be several years after the Environmental Statement data was collected), and enable sufficient transparency of decision making and stakeholder consultation. Data less than 5 years old will be required to support laying of additional cable protection along with descriptions of the seabed habitat and information regarding what cable protection has been laid to date. Justification will need to be made as to why cable protection is necessary considering risk and alternatives and every effort made to minimise amounts required to reduce environmental impact.

The amount of cable protection proposed in the new licence application should not be more than that assessed overall in the ES and should ideally be reduced to reflect the reduction in parameters from the Rochdale Envelope. Any reduction in design parameter should be reflected in this licence e.g. decreased number of cables installed therefore proportionally less cable protection is permitted to reflect this.

Should the volumes proposed be greater than that assessed in the ES at the time of consenting then it will be necessary to redo the assessment for cable protection that was

undertaken in the ES with up to date information and parameters to inform the licence application.

#### Section 4: Cable protection within MPA during the operational phase of a project

Natural England advises that a precautionary approach is taken to cable protection within MPAs with each campaign of cable protection requiring a new marine licence along with a full assessment. This is for a number of reasons including that our understanding of impacts, the habitat that is there and its condition evolves over time as well as changes in law. Therefore each time further new cable protection is to be laid it will require a new assessment and an Appropriate Assessment or Marine Conservation Zone assessment.

Where further cable protection is proposed within an SAC or SPA during the operational phase of a project, it should be assumed that there will be a likely significant effect due to lasting habitat loss from the cable protection and an “appropriate assessment” would need to demonstrate that there would not be an adverse effect from the proposal. This is likely to be challenging in an SAC designated for its benthic habitats, therefore all alternatives will need to be fully explored. If it is not possible to avoid an adverse effect then the derogations route under Article 6(4) of the Habitats Directive (see footnote 2) could be considered. Similarly a Marine Conservation Zone (MCZ) assessment would be requirement where cable protection was proposed in an MCZ.





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EAST ANGLIA ONE NORTH OFFSHORE WINDFARM

Appendix F3 Statutory Nature Conservation Bodies (SNCB's) generic advice in relation to colonisation of *Sabellaria spinulosa* reef on artificial substrate being considered as Annex I reef and contributing to the favourable condition status as reef

For:

The construction and operation of East Anglia ONE North Offshore Windfarm, a 800 MW Wind Farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208 km<sup>2</sup> .

Planning Inspectorate Reference EN010077

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27 January 2020

## 1. Introduction

- 1.1. This note provides the SNCB's advice in relation to colonisation of *Sabellaria spinulosa* reef on artificial substrate being considered as Annex I reef and contributing to the favourable condition status of Annex I reef.
- 1.2. Please note should further evidence be presented then this position may change.

## 2. Increase in *Sabellaria spinulosa* reef feature vs. loss of another Annex I habitat

- 2.1. Areas of Annex I features within Marine Protected Areas (MPAs) are delineated as much as possible at the time of designation with reference to any supporting habitats/sediments and/or sub features. All Annex I habitats have equitable protection; therefore it is not appropriate to trade one habitat in a site for another. For example, if the site is designated for both sandbanks and reef and rock protection is placed on the sandbank feature and then *Sabellaria* reef colonises this rock protection it cannot be considered as a benefit to the site that you have taken one feature in the site and swapped it for another.
- 2.2. Furthermore, possible gain of *Sabellaria spinulosa* reef and definite loss of sandbank feature is not acceptable mitigation under recent ECJ ruling Please see Briels judgement: <https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:62012CC0521&from=EN>

## 3. Establishment of *Sabellaria spinulosa* reef on artificial substrata over laying suitable habitat for reef development

- 3.1. In theory this shouldn't happen as there is the standard marine licence mitigation condition to avoid reef or areas to be managed as reef at the time of construction. The developers first choice is also to use the appropriate tools to install the cable to the optimum cable burial depth so that further cabling activities i.e. reburial and protection are not required.
- 3.2. However, Natural England's 'Cables' paper (Natural England, 2018) which summarises our experience of cable installation over the last 10 years is demonstrating that cable installation is more challenging than predicted with the need for cable protection therefore on the increase to protect the developers assets.
- 3.3. Offshore windfarm developers are stating in their applications that rock protection can be colonised by *Sabellaria spinulosa* reef and therefore doesn't preclude the recovery of the reef features. Whilst Natural England (and other SNCBs) agree that *Sabellaria spinulosa* could colonise rock protection we consider the establishment of *Sabellaria spinulosa* reef on artificial substrate as not "counting" towards favourable condition of the feature and/or site. This is because it is not a replacement for Annex I *Sabellaria spinulosa* reef on natural site sediment as set out at the time of designation and within the conservation advice package for the site.

## 4. Consideration of possible mitigation

- 4.1. The fact that new areas of habitat may be created elsewhere in the same site does not appear to be relevant, even if a net beneficial effect is predicted. There is still a possible adverse – even irreparable – effect on the existing natural habitat, and thus on the integrity of the site. The new habitat will be, to some extent, artificially created and cannot become a true natural habitat for some, possibly quite considerable, time.
- 4.2. As was pointed out by counsel for the Stichting hearing, there can be no certainty that steps to create a new area of a particular habitat will in fact ever achieve the desired outcome and, in application of the precautionary principle, absence of uncertainty is a condition for approval in the context of Article 6(3) of the Habitats Directive. Outcomes cannot be guaranteed in heavily- managed agriculture; it is all the more difficult to guarantee them when seeking to encourage nature to take its course. The Court has stated that there must be no remaining scientific doubt before it can be concluded that there are no lasting adverse effects on the integrity of a site. The same standard must in Natural England's view be applied to predictions of success for planned new areas of created 'natural' habitat.
- 4.3. NB: Whilst this case law is primarily in relation to mitigation vs compensation when avoiding adverse effect on integrity; it still serves as underpinning the general principal of not considering the possible creation of new habitat as in some way reducing the consideration of habitat loss elsewhere.

## 5. Decommissioning

- 5.1. Offshore windfarm developers have suggested that views on the acceptability of colonisation of rock armouring may have changed by the time of decommissioning, including a potential argument to retain the rock armouring in situ within designated sites. Whilst, Natural England acknowledges this may be the case, we can't foresee what will happen over the next 20 - 30 years and a further assessment would need to be made at that time. **Therefore, based on best available evidence our advice remains unchanged that *Sabellaria spinulosa* on artificial substrate is not Annex I reef.**
- 5.2. It should also be noted that should decommissioning happen there are still no guarantees that site/features will be returned to pre impact states, thus further hindering the recovery of Annex I reef features.

## 6. References

Natural England (2018) Natural England Offshore wind cabling: ten years' experience and recommendations.



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**Appendix G to the Relevant Representations of Natural England**

**Development Consent Order, Deemed Marine Licences and related certified  
documentation**

For:

The construction and operation of East Anglia ONE North Offshore Windfarm, a 800 MW Wind Farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208 km<sup>2</sup> .

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27 January 2020

## **Appendix G – Development Consent Order, Deemed Marine Licence and related certified documentation**

### **In compiling this response the following documents have been considered:**

- 3.1 EA1N Draft Development Consent Order
- 3.2 EA1N Explanatory memorandum
- 6.1.6 EA1N Environment Statement Chapter 06 Project Description
- 8.12 EA1N Outline Offshore Operations and Maintenance Plans
- 8.13 EA1N Offshore In Principle Monitoring Plan
- 8.15 EA1N Site Characterisation Report (windfarm site)
- 8.16 EA1N Site Characterisation Report (offshore cable corridor)

### **Summary of main issues**

- Arbitration: Natural England supports the Marine Management Organisation (MMO) position with regards to arbitration and appeals.
- Definitions of commence, and offshore preparation are not appropriate as they may allow significantly damaging works to be undertaken prior to approval of monitoring, mitigation or construction plans.
- Cable protection should not be permitted to be deployed over any area over the full lifetime of the project.
- Unexploded ordnance (UXO) is not appropriately described within the Development Consent Order (DCO)/Deemed Marine Licences (DML)s

## Detailed comments

Point	Section	Natural England's Comment	Risk
Document Used: 3.1 EA1N Draft Development Consent Order			
1	Part 1 Article 2	Natural England cannot agree to the definitions of “commence” and “offshore preparation works”. As currently drafted the wording the work permits damaging works such as UXO detonation. The wording is also open to the inclusion of more activities than specified and thus could lead to works such as boulder removal, sandwave levelling, pre lay grapnel runs and a range of other potentially environmentally damaging works. These works could commence before the appropriate methodologies and documentation have been approved. As there would be no regulatory involvement it is not certain if pre construction surveys would be completed to sufficiently inform and agree micro siting requirements. Thus leading to an increased risk of impact to features of conservation value, such as biogenic reef. The words ‘ <i>but not limited to</i> ’ should be removed, as should reference to UXO detonation works.	
2	Part 1 Article 2	Natural England does not agree with the definition of “maintain”. Specifically that works linked as ancillary works (listed in schedule 1 part 1) are part of maintenance. Works such as cable protection and scour protection deployment are construction activities which can have significant environmental impact. They should not be included within the definition of maintenance. Natural England and the MMO are shortly going to publish a joint positions on deployment of cable protection.	
3	Part 7 Article 37	Arbitration: Natural England does not consider that it is appropriate for post-consent sign-off of DML conditions to be subject to arbitration. Natural England suggests that this wording be amended to that which was used by the Secretary of State (SoS) while deciding on this issue in the Tilbury 2 application. Natural England also refers to the representations and submissions on arbitration submitted during the recent Hornsea 3, Vanguard and Thanet Extension applications.	
4	Schedule 1	Many areas and volumes are given as m2 and m3, they should be m <sup>2</sup> or m <sup>3</sup>	

	Part 3 General Comment		
5	Schedule 1 Part 3 General Comment	<p>No volumes or areas of cable protection are provided. Given the potential for significant impact from these works they should be appropriately recorded here. However, it is noted these volumes and areas are recorded within the DMLs. However, the Environmental Statement (ES) project descriptions have separate areas of cable protection for the cable crossings. Clarification is needed to explain whether these volumes are recorded within the totals provided within the DMLs or if they are additional to the DML volumes. If additional then these additional volumes should be recorded in the DCO/DML appropriately to ensure the maximums are clearly stated and enforceable.</p> <p>No volumes or areas of disposal are provided here. Maximum amount of disposal should be provided and split into hard substrate (drill arisings) boulder relocation and soft sediments (sandwave levelling and ground preparation). However, it is noted the total volumes are recorded within the DMLs and split according to activity.</p> <p>This application and project description includes detonation of UXO. If these works are to be licenced and given the significant potential for impact the maximum number of detonations and the maximum size of detonation (size of UXO in kg) should be recorded. These factors should also be recorded in the DMLs to ensure no works outside of the scope of the ES details take place.</p>	
6	Schedule 1 Part 3 Requirement 22	The relevant statutory nature conservation body should be named as a consultee on the updated Code of Construction Practice. This is to ensure the appropriate environmental considerations are provided within these documents.	
7	Schedule 1 Part 3 Requirement 30	The relevant statutory nature conservation body should be named as a consultee on the onshore decommissioning plan. This is to ensure appropriate ecological mitigation and considerations are made within the decommissioning works.	

8	Schedule 1 Part 3 Requirement 38	This requirement makes it clear that onshore connection works built under one order can only be built on one order and not both. However, Natural England questions if this requirement adequately ensures that any ongoing monitoring or mitigation works for those areas are clearly secured. Natural England considers it logical that the party who constructed the works should hold responsibility for any required ongoing requirements.	
9	Schedule 13 Part 1 Condition 1	Definitions of “commence”, “offshore preparation works” and “maintain” are not acceptable, see points 1 and 2.	
10	Schedule 13 Part 2 Condition 10 (7) (b)	<p>This condition requires a notification of completion of construction activities. Does this condition adequately ensure that no further construction activities can be undertaken under this DML?</p> <p>Natural England considers that this is a notification only. To ensure clarity on the end of the construction period and the start of the operation period and to appropriately trigger the post-construction conditions, Natural England considers that a separate condition may be needed to require the applicant to inform once all construction activities have completed and that no further construction works will be required under this licence.</p> <p>Recent projects have implied that as their DCO and DML has no requirement or condition ending construction they can complete construction activities throughout the lifetime of the project. Natural England does not consider this appropriate.</p>	
11	Schedule 13 Part 2 Condition 16	<p>Natural England notes the inclusion of these conditions to ensure removal of UXO can proceed without inclusion under commencement. However, these works also require consideration of potential benthic impacts, such as biogenic reef. The requirement to perform pre-construction surveys to inform micro-siting of cables must be included here to ensure appropriate mitigation. The current drafting has no timing requirements for submission. They need to be submitted a minimum of 6 months prior to the detonation of UXOs.</p> <p>However, Natural England considers this work to lead to significant duplication of effort for post-construction document approval. Therefore, Natural England advises inclusion of UXO</p>	



		<p>within the definition of “commence” and the sign off of plans within the pre-construction conditions.</p> <p>Furthermore, Natural England considers that conditions should be added to DMLs ensure that:</p> <ul style="list-style-type: none"> <li>• Only 1 UXO is detonated across both EA2 and EA1N within a 24 hour period.</li> <li>• No piling will occur concurrent to the UXO detonation or within 24 hours of a detonation.</li> <li>• Only 1 piling event can occur across EA2 and EA1N within any 24 hour period.</li> <li>• A Co-operation Plan/Agreement will be required between EA1N and EA2 in the event that construction periods overlap.</li> </ul> <p>These are key mitigations proposed within the outline Site Integrity Plan (SIP) page 30 section 6.1 and should be appropriately secured through condition.</p>	
12	Schedule 13 Part 2 Condition 17 (1) (d) (iii)	The condition allows for changes to the cable protection if proposed following cable laying operations. However, there is no end date within the condition. Natural England’s joint position with the MMO is that it is not appropriate for cable protection to be deployed throughout the operation and maintenance (O&M) phase of a project. This is due to the very large spatial and temporal scale of these licenced works, giving a Rochdale Envelope that is too undefined to appropriately assess. An end date should be included based on the proposals within the Natural England and MMO joint position statement. Any cable protection works after this end date should be licenced separately. It should also be noted that further surveys would be required to confirm the presence/absence of <i>Sabellaria</i> reef, such as is required prior to construction.	
13	Schedule 13 Part 2 Condition 20 & 22	Natural England considers that within these conditions the requirements to conduct ornithological monitoring (as outlined in the In Principle Monitoring Plan) should be secured.	
14	Schedule 13 Part 2	Natural England notes that this condition includes a requirement to monitor the first four piles and that under sub-paragraph (2) the MMO may require further monitoring. This requirement is in line with previous requirements for similar projects. However, Natural England would consider the first four piles represent the minimum requirement and would welcome discussion	

	Condition 21	on expanding this proposed monitoring to include an agreed selection of the most resistant piles. The most resistant piles are likely to represent the largest noise impacts and could be further used to validate the noise impact predictions of the ES.	
15	Schedule 14	All issues raised under Schedule 13 also apply to Schedule 14 where similar conditions exist.	
16	Schedule 15	Please see point 3 regarding Arbitration.	
<u>Document Used:</u> 8.12 EA1N Outline Offshore Operations and Maintenance Plans			
17	1.2.1 Para 12	The definition of green items states that these items may go ahead and that no additional Marine Licences are needed, but that notification may be required. This is not entirely accurate, some of the items listed as green require resubmission of plans and documentation and further approvals from the MMO. Natural England suggests that the text is amended to reflect that some green items will require approval and not just notification.	
18	1.3 Appendix 1: Operations and Maintenance List Cables (inter array, platform link and export)	Cable burial using surface protection: Natural England assumes this refers to deployment of cable protection, although the table is not clear on this point. This is listed as green indicating that a further marine licence is not required. Natural England does not agree and considers this should be amber. Please see point 2 and the MMO and Natural England position statements on cable protection. This issue is replicated in the transmission section of the plan and both sections should be amended.	
19	1.3 Appendix 1: Operations and Maintenance List Wind Turbine and Meteorological Mast	Scour protection is listed within the table as green. Therefore, it may be deployed with no additional licence required. This should be changed to amber. Scour protection may be deployed up until the maximum assessed in the ES. Any additional protection above the amount assessed in the ES would need additional licences. Natural England advises that maximum amount allowed should be based on the maximum amount assessed in the ES for the individual foundation type. Not the total assessed volume of scour for the entire project and the document should be amended to reflect this. This issue is replicated in the transmission section of the plan and both sections should be amended.	

20	1.3 Appendix 1: Operations and Maintenance List  Other	<p>Natural England does not consider it appropriate to grant a licence to detonate UXO over such a long period of time as the lifetime of the project. This is especially relevant to projects located within the Southern North Sea Special Area Of Conservation (SAC) where detonation could have significant impacts and should be assessed based on updated information to show consideration of such things as in-combination impacts.</p> <p>Notwithstanding our arguments above, if it is decided that it is appropriate to include UXO detonation for the lifetime of the project, then Natural England notes that UXO detonations are listed as green. Natural England would advise that this should be listed as amber as the ES has assessed only a total of 80 detonations up to a maximum size of 700kg and therefore if more than 80 UXO's are found, or a UXO of size greater than 700kg, a new Marine Licence would be required. Additionally, consent will be required for disturbance of European Protected Species (EPS) for all instances and, therefore, it may be more appropriate to list this as red. However, in all instances the need for the EPS consent should be appropriately reflected in this document to ensure appropriate consent is sought within a reasonable time frame.</p>	
<u>Document Used:</u> 8.13 EA1N Offshore In Principle Monitoring Plan			
21	Table 2  In-Principle Monitoring Proposed - Benthic Ecology	<p>The proposed benthic monitoring only considers construction activities. The requirement for monitoring for O&amp;M activities, which directly impact the habitats of conservation importance such as Sabellaria spinulosa , should be included. This monitoring will be required in the form of geophysical and ground truthing (drop down video) surveys for any areas which have no monitoring and no construction activity within 2 years prior to the proposed O&amp;M works. The post-construction structural/engineering surveys suggested in Table 1 could be used to inform any monitoring should they be in the appropriate location and within an appropriate timeframe.</p>	
22	1.6.6.2  Para 8	<p>Natural England notes that we would like to engage with the applicant on the potential monitoring requirements for marine mammals and the potential for contribution to strategic monitoring. Following this discussion there may be a need to update this section to better reflect the monitoring that will be required.</p>	
23	1.6.7	<p>Natural England refers to our points 47 and 48 in Annex A Offshore Ornithology.</p>	





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EAST ANGLIA ONE NORTH OFFSHORE WIND FARM

Appendix H to the Relevant Representations of Natural England

Legislative and Policy Framework

For:

The construction and operation of East Anglia ONE North Offshore Wind Farm, a 800 MW wind farm located approximately 36 km off the Suffolk coast, covering an area of approximately 208km<sup>2</sup>.

Planning Inspectorate Reference: EN010077

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27 January 2020

## **Legislative and Policy Framework**

### **1. INTRODUCTION**

#### **1.1. Purpose and structure of these representations**

1.1.1. These Representations are submitted in pursuance of rule 10(1) of the Infrastructure Planning (Examination Procedure) Rules 2010 ('ExPR') in relation to an application under the Planning Act 2008 for a Development Consent Order ('DCO') for the construction and operation of an offshore wind farm called East Anglia One North Offshore Wind Farm ('the Project') submitted by Scottish Power Renewables Ltd, a subsidiary of Vattenfall, ('the Applicant') to the Secretary of State. The wind turbines ("the Array") is situated approximately 43km off the Suffolk coast, with the export cables proposed to make landfall north of Thorpeness, and the grid connection at Friston. The offshore wind farm will be used for the generation of electricity.

### **2. STATUS AND FUNCTIONS OF NATURAL ENGLAND AND JNCC**

#### **2.1. Natural England**

2.1.1. Natural England is a statutory body established under the Natural Environment and Rural Communities Act 2006 ('NERC Act'). Natural England is the Government's statutory advisor on the natural environment, helping to protect England's nature and landscapes for people to enjoy and for the services they provide. Natural England is an executive non-departmental public body, sponsored by the Department for Environment, Food and Rural Affairs ('Defra'). It provides advice to Government and others, forming its own views based on the best scientific evidence available.

2.1.2. Natural England works for people, places and nature, to enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas; promoting access, recreation and public well-being, and contributing to the way natural resources are managed so that they can be enjoyed now and by future generations.

2.1.3. Section 2 of the NERC Act provides that Natural England's general statutory purpose is:

*'... to ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development.'*

2.1.4. Section 2(2) states that Natural England's general purpose includes:

- a. promoting nature conservation and protecting biodiversity;
- b. conserving and enhancing the landscape;
- c. securing the provision and improvement of facilities for the study, understanding and enjoyment of the natural environment;
- d. promoting access to the countryside and open spaces and encouraging open-air recreation; and

- e. contributing, in other ways, to social and economic well-being through management of the natural environment.
- 2.1.5. Natural England is required to keep under review all matters relating to its general purpose,<sup>1</sup> and to provide public authorities with advice where they request this.<sup>2</sup> Natural England's remit extends to the territorial sea adjacent to England, up to the 12 nautical mile limit from the coastline.<sup>3</sup>
- 2.1.6. Natural England is a statutory consultee in respect of (amongst other matters):
- a. all applications for consent for Nationally Significant Infrastructure Projects which are likely to affect land in England;<sup>4</sup> and
  - b. the environmental information submitted pursuant to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations').<sup>5</sup>
  - c. Plans or projects that are subject to the requirements of the Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations') or the Offshore Marine Conservation (Natural Habitats etc) Regulations 2017 ('Offshore Regulations') which are likely to have a significant effect on European protected sites – that is, sites designated as Special Areas of Conservation ('SACs') (and candidate SACs ('cSACs'))<sup>6</sup> and Special Protection Areas ('SPAs') and potential SPAs ('pSPAs')<sup>7</sup> for the purposes of the EU Habitats and Birds Directives – in England;<sup>8</sup>
  - d. proposals likely to damage any of the flora, fauna or geological or physiographical features for which a Site of Special Scientific Interest ('SSSI') has been notified pursuant

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<sup>1</sup> NERC Act, s.3(1).

<sup>2</sup> NERC Act, s.4(1).

<sup>3</sup> NERC Act, s.1(3).

<sup>4</sup> Planning Act s.42; Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, reg. 3 and sched.1.

<sup>5</sup> Regs. 3(1), 10(6), 11(1), 16(2)(b), 20(3)(g), 22(3)(f), 24(5)(f) of the EIA Regs.

<sup>6</sup> As a matter of law cSACs are protected as they are included within the definition of 'European site' set out at regulation 8 of the Habitats Regs. A cSAC is the term given to sites which Member States have decided are Sites of Community Importance ('SCI') within their borders containing either species prescribed in Annex II of the Habitats Directive or which have Annex I habitat types. Sites containing priority habitats or species must be listed as SCIs and then designated as SACs. These sites are known as cSACs until such time as those sites are confirmed as SACs or a decision is taken that they should not be SACs.

<sup>7</sup> As a matter of policy, the Government expects public authorities to treat pSPAs as if they are fully designated European Sites, for the purpose of considering development proposals that may affect them. National Planning Policy Framework (July 2018), para 176; PINS Advice Note 10: Habitats Regulation Assessment for nationally significant infrastructure projects, p.3.

<sup>8</sup> Regulation 63 of the Habitats Regs; regulations 24(1) and (3) and 25(3)(b) of the Offshore Regs.

to the Wildlife and Countryside Act 1981 (as amended) ('WCA 1981');<sup>9</sup>

- e. proposals relating to the English territorial sea capable of affecting, other than insignificantly, any of the protected features of a Marine Conservation Zone ('MCZ') or any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependent, where the Examining Authority believes that there is or may be a significant risk of the act hindering the achievement of the conservation objectives stated for the MCZ.<sup>10</sup>

2.1.7. It is also the Government's policy to consult Natural England in respect of sites listed for the purposes of the Convention on Wetlands of International Importance especially as Waterfowl Habitat signed at Ramsar on 2 February 1971 ('Ramsar sites'), as if they were European protected sites.<sup>11</sup>

2.1.8. In addition, Natural England performs duties relating to SSSIs under the WCA 1981, and in relation to European protected sites and species under the Habitats Regulations.

## 2.2. Authorisation to delegate

2.2.1. The Examination Authority should note that pursuant to an authorisation made on the 9<sup>th</sup> December 2013 by the JNCC under paragraph 17(c) of Schedule 4 to the Natural Environment and Rural Communities Act 2006, Natural England is authorised to exercise the JNCC's functions as a statutory consultee in respect of applications for offshore renewable energy installations in offshore waters (0-200 nm) adjacent to England. This application was included in that authorisation and therefore Natural England will be providing statutory advice in respect of that delegated authority.

## 3. LEGISLATIVE FRAMEWORK

### 3.1. Environmental Impact Assessment

3.1.1. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2010 ('EIA Regs') transposed Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (as amended). That directive and its amending instruments have since been repealed and replaced by consolidated Council Directive 2011/92/EU ('the EIAD').

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<sup>9</sup> Section 28E(1) of the 1981 Act.

<sup>10</sup> Marine and Coastal Access Act 2009, ss.126(2) and 147(1). The first MCZs were designated in 2013. It is submitted that where an expanse of sea is under consideration for designation as an MCZ this is a material consideration.

<sup>11</sup> Revised National Planning Policy Framework (July 2018), para 176; PINS Advice Note 10: Habitats Regulation Assessment for nationally significant infrastructure projects, p.3.



Development consent cannot lawfully be granted for EIA development unless there has been substantial compliance with the EIA Regs.<sup>12</sup>

- 3.1.2. The descriptions in the schedules apply broadly, and are not to be interpreted as mutually exclusive 'pigeonholes'.<sup>13</sup> In assessing whether a development is likely to have a significant effect on the environment, the Planning Inspectorate must have regard to criteria in Schedule 3 of the EIA Regs.<sup>14</sup>
- 3.1.3. Where the Examining Authority is considering adopting a scoping opinion in which it specifies what information should be required in the environmental statement (ES), it must consult Natural England in respect of proposed applications likely to affect land in England and the marine environment.<sup>15</sup>
- 3.1.4. The ES must meet the requirements of Schedule 4 to the EIA Regulations. These include providing:
  - a. 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;
  - b. a description of the development, its construction and operation phases, its production processes, and an estimate by type and quantity of its emissions and residues;
  - c. a description of the aspects of the environment likely to be significantly affected by the development including air, water, soil, fauna and flora, and landscape;
  - d. a description of the likely significant effects of the development on the environment, including direct, indirect, secondary, cumulative, long- and short-term, temporary and permanent effects;
  - e. a description of the measures envisaged in order to prevent/avoid, reduce and remedy/offset the significant adverse effects on the environment;
  - f. the data required to identify and assess the main effects which the development is likely to have on the environment.
- 3.1.5. Regulation 3(2) of the EIA Regs provides that a DCO must not be made unless environmental information has been taken into consideration. 'Environmental information' means the required ES, including any further information requested, any other relevant information, and any duly made representations made about

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<sup>12</sup> *Berkeley v SSE* [2001] 2 AC 603, HL which also concerned the materially identical Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.

<sup>13</sup> *R(Warley) v Wealden DC* [2011] EWHC 2083 (Admin) at [41]-[44] and [63]-[64] per Singh J, in relation to the materially identical Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.

<sup>14</sup> EIA Regs, reg 7(1).

<sup>15</sup> Regulation 8(6) of the EIA Regs.

the environmental effects of the development and of any associated development.<sup>16</sup> The ES must meet the required standard before consent may be granted.<sup>17</sup> Consideration of the environmental information must be done conscientiously. Where the development qualifies as EIA Development consent will be unlawful if the decision ignores issues relating to the significance of environmental impacts or the effectiveness of mitigation.<sup>18</sup>

### 3.2. Duty to conserve biodiversity

3.2.1. Section 40 of the NERC Act imposes a '*duty to conserve biodiversity*' on public authorities, and as a minimum they should have regard to conserving biodiversity, including members of the Examining Authority and the Secretary of State. In pursuance of this, section 40(1) states:

*'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.'*

3.2.2. For the purposes of the NERC Act, conservation includes restoring or enhancing a habitat or population of organisms.<sup>19</sup> The Secretary of State must in particular have regard to the Convention on Biological Diversity when performing their duty.<sup>20</sup>

3.2.3. Section 41 of the NERC Act requires the Secretary of State to publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity in England. Section 41(3) states:

'the Secretary of State must—

- (a) Take such steps as appear to the Secretary of State to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section, or
- (b) Promote the taking by others of such steps.'

### 3.3. European Sites

3.3.1. The Secretary of State and the individual members of the Examining Authority are each a 'competent authority' for the purposes of the Habitats Regulations, with a duty to have regard to the requirements of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ('the Habitats Directive') and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds ('the Wild Birds Directive').<sup>21</sup> So far as lies within their powers, a competent authority in exercising any function in or in

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<sup>16</sup> EIA Regs, reg. 2(1).

<sup>17</sup> *R v Cornwall CC, ex p Hardy* [2001] Env LR 25.

<sup>18</sup> *Smith v SSETR* [2003] EWCA Civ 262.

<sup>19</sup> NERC Act, s.40(3).

<sup>20</sup> NERC Act, s.40(2).

<sup>21</sup> Habitats Regs, regs 7(1)(a), 3(1), and 9(3). Directive 2009/147/EC has replaced Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds.

relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds.<sup>22</sup>

- 3.3.2. The Secretary of State is also the 'appropriate authority' for the purposes of the Habitats Regulations.<sup>23</sup> They must accordingly exercise their functions which are relevant to nature conservation so as to secure compliance with the requirements of the Habitats Directive and Wild Birds Directive.<sup>24</sup> The Secretary of State must furthermore take such steps as they consider appropriate to secure the objective of the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of article 2 of the Wild Birds Directive.<sup>25</sup>
- 3.3.3. The Wild Birds Directive applies to all species of naturally occurring birds in the wild state in the European territory of the UK, including their nests, eggs and habitats.<sup>26</sup> Article 2 of the Wild Birds Directive requires populations of wild birds to be maintained 'at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements'.<sup>27</sup> Article 3 requires Member States, in the light of Article 2, to 'take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats'. Article 5 requires Member States to take the requisite measures to establish a general system of protection for all their wild birds, prohibiting the deliberate killing or capture, deliberate destruction or removal of nests and eggs, and deliberate disturbance of the birds insofar as this is significant having regard to the objectives of the Directive. Article 4 requires SPAs to be established in respect of particular species, in order to ensure the survival and reproduction of these species in their area of distribution. In respect of SPAs, Article 4 requires that the Member States 'shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article'. It also requires that 'outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.' Article 13 provides that application of measures taken pursuant to the Directive may not lead to a deterioration in the present situation as regards the conservation of wild birds.
- 3.3.4. The Habitats Directive aims to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora. It provides that measures taken pursuant to the Directive shall be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of community interest.<sup>28</sup> Member States, in consultation with the European Commission, must select and designate areas for protection as SACs pursuant to articles 3 and 4 of the Habitats Directive. Together with SPAs, these sites make up the Natura 2000 ecological network, which establishes a coherent ecological European network that enables 'the natural habitat types and the species' habitats

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<sup>22</sup> Habitats Regs, reg.10(8)

<sup>23</sup> Habitats Regs, reg.3(1).

<sup>24</sup> Habitats Regulations, reg. 9(1) and (2).

<sup>25</sup> Habitats Regs, reg 10(1), (3)

<sup>26</sup> Wild Birds Directive, art.1.

<sup>27</sup> Wild Birds Directive, article 2.

<sup>28</sup> Habitats Directive, art.2.

concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range'.<sup>29</sup>

- 3.3.5. Article 6 of the Habitats Directive applies both to SACs and to SPAs.<sup>30</sup> Article 6(2) requires that Member States shall take appropriate steps to avoid, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of the Habitats Directive. Article 6(3) requires that any project not directly connected with or necessary to the management of the European site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site, the competent national authorities shall agree to the project only after having ascertained that it will not adversely affect the integrity of the site concerned, unless it meets the criteria for derogation.
- 3.3.6. If an adverse effect on the integrity of the site cannot be ruled out, then the effect of Article 6(4) is that the project may only be carried out where (i) there are no alternative solutions, (ii) it must go ahead for imperative reasons of overriding public interest, including reasons of a social or economic nature; and (iii) all compensatory measures necessary to protect the overall coherence of the Natura 2000 network are secured. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised as 'imperative reasons of overriding public importance' are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or such other matters contained in an opinion of the European Commission.<sup>31</sup>
- 3.3.7. SACs and SPAs are protected as European sites in inshore waters off England (up to 12 nautical miles) by the Habitats Regulations and in offshore waters (i.e. outside 12 nautical miles) by the Offshore Regulations, which transpose the relevant parts of the Habitats Directive into domestic law. The provisions of Article 6 of the Habitats Directive which are noted above are found at regulations 63, 64 and 68 of the Habitats Regulations and regulations 28, 29 and 36 of the Offshore Regulations. In determining these applications, the Secretary of State will be acting as a competent authority for the purposes of those Regulations.
- 3.3.8. The Regulations describe a sequence of steps to be taken by the competent authority in respect of a European site when deciding whether to authorise a project. Those steps are:

**Step 1** Consider whether the project is directly connected with or necessary to the management of the site?<sup>32</sup> If not —

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<sup>29</sup> Habitats Directive, art.3(1).

<sup>30</sup> Habitats Directive, art. 6 applies to SACs and art.7 applies it to SPAs designated under the Wild Birds Directive.

<sup>31</sup> Regulations 64 and 68 of the Habitats Regulations, transposing Article 6(4) of the Habitats Directive.

<sup>32</sup> Under regulation 63(1)(b) of the Habitats Regs or reg. 28(1)(c) of the Offshore Regs.

**Step 2** Consider<sup>33</sup> whether the project is likely to have a significant effect on the site, either alone or in combination with other plans or projects. If such an effect cannot be excluded then –

**Step 3** Make an appropriate assessment of the implications for the site in view of its conservation objectives.<sup>34</sup> In so doing, the competent authority must consult Natural England<sup>35</sup> and have regard to its representations. If appropriate, it can also obtain the opinion of the general public.<sup>36</sup> The competent authority is also empowered to require the Applicant to provide information for the purposes of the appropriate assessment, or to enable the authority to determine whether such an assessment is required.<sup>37</sup>

**Step 4** Consider<sup>38</sup> whether the project will adversely affect the integrity of the site, having regard to the manner in which it is proposed to be carried out, and any conditions or restrictions subject to which that authorisation might be given (the 'Integrity Test').

**Step 5** The competent authority may agree to the plan or project **only after having ascertained that the project will not adversely affect the integrity of the site.**<sup>39</sup>

**Step 6** If the project fails the Integrity Test in respect of the site's conservation objectives, it can only proceed if the competent authority is satisfied that there are no alternative solutions<sup>40</sup> and that:

**Step 7** There are imperative reasons of overriding public interest for the project.<sup>41</sup> If these criteria are met, the competent authority must:

**Step 8** Secure any necessary compensatory measures to ensure the overall coherence of Natura 2000, implemented in the appropriate timeframe.<sup>42</sup>

- 3.3.9. The Directives are both to be construed purposively in the light of Article 191 of the Treaty on the Functioning of the European Union ('TFEU'). Article 191(1) TFEU provides that 'Union policy on the environment shall contribute to the pursuit of the...objectives [of] preserving, protecting and improving the quality of the environment'; and Article 191(2) provides that Union policy on the environment shall aim at a high level of protection, and shall be based on the precautionary principle and on the principle that preventive action should be taken.

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<sup>33</sup> Under regulation 63(1)(a) of the Habitats Regs or reg.28(1)(b) of the Offshore Regs.

<sup>34</sup> Under regulations 63(1) of the Habitats Regs. or 28(1) of the Offshore Regs.

<sup>35</sup> under regulations 63(3) of the Habitats Regs or 28(3)(b) of the Offshore Regs.

<sup>36</sup> under regulation 63(4) of the Habitats Regs or 28(3)(f) of the Offshore Regs.

<sup>37</sup> By regulation 63(2) of the Habitats Regs or 28 (2) of the Offshore Regs.

<sup>38</sup> Pursuant to regulation 63(5) and (6) of the Habitats Regs or 28(4) and (5) of the Offshore Regs.

<sup>39</sup> Applying regulation 63(5) of the Habitats Regs, subject to regulation 64, or reg 28(4) of the Offshore Regs subject to reg.26.

<sup>40</sup> in accordance with regulation 64(1) of the Habitats Regs or 29(1) of the Offshore Regs.

<sup>41</sup> in accordance with regulation 64(1) of the Habitats Regs or 29(1) of the Offshore Regs.

<sup>42</sup> As required by regulation 68 of the Habitats Regs or 36 of the Offshore Regs.

3.3.10. Further to this, case law of the Court of Justice of the European Union has established the following points:

- a. Articles 6(2) and 6(3) are aimed at achieving the same level of protection. The Habitats Directive therefore requires that Member States take systematic and effective measures pursuant to Article 6(3) which guarantee the avoidance in fact of significant deterioration of the habitats or disturbance of the species for which SPAs and SACs have been designated.<sup>43</sup>
- b. Article 6(3) of [the] Directive makes the requirement for an appropriate assessment of the implications of a plan or project conditional on there being a probability or a risk that that plan or project will have a significant effect on the site concerned. In light of the precautionary principle in particular, such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have a significant effect on the site concerned. It follows that the Habitats Directive requires that any plan or project undergo an appropriate assessment of its implications if it cannot be excluded on the basis of objective information that that plan or project will have a significant effect on the site concerned.<sup>44</sup>
- c. Under Article 6(3) of the Habitats Directive, ‘an appropriate assessment of the implications for the site concerned of the plan or project implies that, prior to its approval, all aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site’s conservation objectives must be identified in the light of the best scientific knowledge in the field’.<sup>45</sup>
- d. ‘An assessment made under Article 6(3) of the Habitats Directive cannot be regarded as appropriate if it contains gaps and lacks complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the SPA concerned’.<sup>46</sup>
- e. In the context of priority habitats within SACs, ‘a plan or project not directly connected with or necessary to the management of a site will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the

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<sup>43</sup> CJEU, Case C-241/08 *Commission v France* at paras 30-36; Case C-535/07 *Commission v Austria* at paras 57-58.

<sup>44</sup> CJEU Case C-418/04 *Commission v Ireland* at paras 226 to 227; Case C-127/02, *Landelijke Vereniging tot Behoud van de Waddenzee v Staatsecretaris van Landbouw, Natuurbeheer en Visserij* at paras 43-45

<sup>45</sup> CJEU Case C-127/02 *Waddenzee* at para 61.

<sup>46</sup> CJEU Case C-404/09 *Commission v Spain* at para 100; cf case C-304/05 *Commission v Italy* [2007] ECR I-7495, paras 58-59, 67-70 and judgement of 25<sup>th</sup> July 2018, *Grace and Sweetman*, C-164/17, EU:C:2018:593, paragraph 39.

constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of SCIs, in accordance with the directive. The precautionary principle should be applied for the purposes of that appraisal<sup>47</sup> and these impacts should be appropriately assessed. Furthermore, the CJEU has held that the loss of SPA habitat cannot be mitigated for by not reducing the total SPA habitat or enhancing it. Instead, those compensatory measures should be considered, if necessary, under Article 6(4) and not as part of the appropriate assessment.<sup>48</sup> As a matter of policy, this case law also applies to habitat designated under the Ramsar Convention.

- f. In order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project (mitigation) on that site.<sup>49</sup>

### 3.4. Ramsar Convention

- 3.4.1. The UK is a party to the 1971 Convention on Wetlands of International Importance, done at Ramsar, Iran ('the Ramsar Convention').
- 3.4.2. Article 2(1) of the Convention provides that 'Each Contracting Party shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance'.
- 3.4.3. Article 4 of the Convention provides:
  - a. Each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening.
  - b. Where a Contracting Party in its urgent national interest, deletes or restricts the boundaries of a wetland included in the List, it should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat.

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<sup>47</sup> CJEU Case C-258/11 *Peter Sweetman and Others v An Bord Pleanála* [2013] ECR-000, para 48. See also judgement of 17 April 2018, *Commission vs. Poland (Białowieża Forest)*, C-441/17, EU:C:2018:255, paragraph 116.

<sup>48</sup> CJEU Case -164/17 *Grace and Sweetman vs An Bord Pleanála* [2018]

<sup>49</sup> CJEU Case C-323-17 *People Over Wind and Sweetman vs Coillte Teoranta*, para 40.

- c. The Contracting Parties shall encourage research and the exchange of data and publications regarding wetlands and their flora and fauna.
  - d. The Contracting Parties shall endeavour through management to increase waterfowl populations on appropriate wetlands.'
- 3.4.4. The Government designates Ramsar sites in accordance with the criteria set out in the Convention, in recognition of the international importance of these sites as a wetland wildlife habitat.
- 3.4.5. In accordance with Government Circular: Biodiversity and Geological Conservation Statutory Obligations and their Impact within the Planning System (ODPM 06/2005), and the National Planning Policy Framework (2018), paragraph 176, Ramsar sites are subject to the same procedures described in the preceding section (in relation to European sites) as a matter of UK Government Policy, in order to assist the Government in fully meeting its obligations under the Ramsar Convention.

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

- 3.5.1. SSSIs are notified as such by Natural England under section 28 of the WCA 1981 (as amended), where we are of the opinion that land is of special interest by reason of any of its flora, fauna, or geological or physiographical features.
- 3.5.2. Section 28G of the WCA 1981 places legal obligations on public authorities in relation to SSSIs. These authorities are known as 'section 28G authorities', and the definition given at s.28G(3) embraces all public office-holders including the Secretary of State and the Examining Authority.
- 3.5.3. An authority to whom section 28G applies has a duty in exercising its functions so far as their exercise is likely to affect the flora, fauna or geological or physiographical features by reason of which a SSSI is of special interest 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.'*
- 3.5.4. In addition, where the permission of a section 28G authority is needed before proposed operations may be carried out, the section 28G authority must, in accordance with section 28I(5) of the WCA 1981, take any advice received from Natural England into account:
  - a. in deciding whether or not to permit the proposed operations; and
  - b. if it does decide to do so, in deciding what (if any) conditions are to be attached to the permission.



- 3.5.5. 'Permission' is defined so as to include any kind of consent or authorisation.<sup>50</sup> As the Applicant requires development consent from the Secretary of State in order to proceed with its proposals, and as the Secretary of State is a section 28G authority, the duties under section 28(5) apply to the Secretary of State.<sup>51</sup>
- 3.5.6. Section 35 of the WCA 1981 empowers Natural England to declare as a 'National Nature Reserve' ('NNR') any land which is managed as a nature reserve and is of national importance. Protection is afforded to the NNR through the management of the SSSI, European and Ramsar features that share a boundary and habitats of the NNR.

### 3.6. Marine Conservation Zones

- 3.6.1. In respect of Marine Conservation Zones (MCZs), where Natural England is the appropriate statutory conservation body, it has the power under section 127 of the Marine and Coastal Access Act 2009 to give advice and guidance as to:
- a. The matters which are capable of damaging or otherwise affecting any protected feature of an MCZ;
  - b. The matters which are capable of affecting any ecological or geomorphological process on which the conservation of any protected feature or features of an MCZ is (wholly or in part) dependent;
  - c. How any conservation objectives stated for an MCZ may be furthered, or how the achievement of any such objectives may be hindered;
  - d. How the effect of any activity or activities on an MCZ or MCZs may be mitigated; and
  - e. Which activities are, or are not, of equivalent environmental benefit to any particular damage to the environment.

### 3.7. European Protected Species

- 3.7.1. Regulation 9(3) of the Habitats Regulations, headed 'Duties relating to compliance with the Directives', stipulates that:

*'a competent authority, in the exercising of any of their functions, must have regard to the requirements of the Habitats Directive so far as they may be affected by the exercise of those functions'*

The Examining Authority and Secretary of State are both 'competent authorities' by virtue of reg.7(1), which includes any person holding a public office.

- 3.7.2. In relation to species of animals and plants listed in Annex IV of the Habitats Directive, article 12 of the Directive provides that the UK must take the requisite measures to ensure that they are subject to a system of strict protection.
- 3.7.3. In relation to the animal species, the system must in particular prevent the deliberate capture or killing of specimens of these species in the wild; deliberate

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<sup>50</sup> WCA 1981, s.28(7).

<sup>51</sup> Natural England accepts that the notice requirements of section 28(2) to (4) have been satisfied for the purposes of the Secretary of State's determination of the planning applications at issue here.

disturbance of these species; deliberate destruction or taking of eggs from the wild; and deterioration or destruction of breeding sites or resting places. Disturbance or destruction may be indirect, for instance through noise or light pollution, or loss of habitat.<sup>52</sup>

- 3.7.4. The plant species must be protected in particular from deliberate picking, collecting, cutting, uprooting or destruction in their natural range in the wild.
- 3.7.5. Article 16 of the Habitats Directive provides that this strict protection may be derogated from only where (i) there is no satisfactory alternative, (ii) the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range, and (iii) the purpose is (a) protecting wild fauna and flora and conserving natural habitats; (b) preventing serious damage to crops, livestock, forests, fisheries and water and other types of property; (c) public health and safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment; (d) research, education, and repopulating and re-introducing these species; or (e) to allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species listed in Annex IV in limited numbers specified by the competent national authorities.
- 3.7.6. Regulation 43 of the Habitats Regs and the provisions of the WCA 1981 make it a criminal offence to engage in the behaviour prohibited by the Habitats Directive. However, prohibitions enforced by penalties for infractions are not in themselves adequate to implement the Directive if they will not prevent significant destruction or disturbance taking place in fact: 'such protection requires that individuals be prevented in advance from engaging in potentially harmful activities'.<sup>53</sup>
- 3.7.7. The Court of Justice of the European Union has accordingly ruled that Member States must not only adopt a comprehensive legislative framework, but also to implement concrete and specific protection measures that are coherent, co-ordinated and preventive in nature.<sup>54</sup> Such a system of strict protection must enable the effective avoidance of deterioration or destruction of breeding sites or resting places caused by development.<sup>55</sup> Strict protection must be enforced even if the population of the species is not declining.<sup>56</sup>
- 3.7.8. The Secretary of State should follow the guidance in paragraphs 99 and 116 of Circular 06/2005, and take care to ensure that any disturbance of protected species, including harm to their habitats, food-sources, resting-places or breeding sites, is avoided unless they consider that the derogation criteria are likely to be

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<sup>52</sup> CJEU Case C-103/00, *Commission v Greece*, judgment para 34 and Opinion of Léger AG delivered on 25 October 2001, paras 46, 56 and 57; *R(Morge) v Hampshire CC* [2010] EWCA Civ 608 at [49]. [2011] UKSC 2 at [19].

<sup>53</sup> CJEU, Case C-418/04 *Commission v Ireland* at para 208.

<sup>54</sup> CJEU Case C-183/05, *Commission v Ireland*, paras 29-30.

<sup>55</sup> CJEU Case C-383/09 *Commission v France*, opinion of Advocate-General Kokott at para 89; judgment at paras 21, 35, 37.

<sup>56</sup> CJEU Case C-103/00 *Commission v Greece* para 31; CJEU Case C-518/04 *Commission v Greece*, para 21.

met, in which case they should require any necessary licence to be obtained before development commences.<sup>57</sup>

### 3.8. **Nationally Protected Species**

- 3.8.1. Certain birds, other animals and plants which are listed in the schedules to the WCA 1981 are protected from disturbance, injury and capture or taking by the provisions of Part 1 that Act, which makes it a criminal offence to disturb, injure, capture or take them.
- 3.8.2. Under section 16 of the WCA 1981, licences may be issued to authorise these activities, provided that certain conditions are met. The conditions do **not** include derogation for the purpose of facilitating development, nor for general social or economic purposes.
- 3.8.3. Badgers and their setts are also protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett. There is provision within the legislation for Natural England to permit activities affecting badgers or their setts where there is suitable justification and the problem cannot be resolved by alternative means.

### 3.9. **Areas of Outstanding Natural Beauty ('AONBs')**

- 3.9.1. Section 85(1) of the Countryside and Rights of Way Act 2000 ('CRWA 2000') requires all persons holding public office, public bodies and Ministers of the Crown, when exercising or performing any functions so as to affect land in an AONB to 'have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty'. By section 92(2) of the CRWA 2000, this includes having regard for conserving its fauna, flora and geological and physiographical features.

### 3.10. **National Parks**

- 3.10.1. National Parks, along with AONBs, have been confirmed by the Government as having the highest status of protection in relation to landscape and scenic beauty. National Park purposes are to conserve and enhance their natural beauty, wildlife and cultural heritage and to promote opportunities for the understanding and enjoyment of their special qualities by the public.
- 3.10.2. The statutory duties are provided for in Section 11A(2) of the National Parks and Access to the Countryside Act 1949 (National Parks). Specifically, they state that, "in exercising or performing any functions in relation to, or so as to affect, land" in these areas, relevant authorities "shall have regard" to their purposes.

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<sup>57</sup> That was the approach endorsed by the High Court in *R(Woolley) v East Cheshire DC* [2010] Env. L.R. 5 at [27]-[28]. In *Morge v Hampshire CC*, the Supreme Court appears to have thought that it would not be unlawful to grant permission for a development unconditionally, unless it were thought unlikely that the criteria would be met. This was on the premise that it was sufficient for the prohibited conduct to be subject to criminal penalties if no species licence were obtained. However, the CJEU authorities cited above - which the Supreme Court did not consider in that case - make it clear that a preventive approach must be taken by the planning authority. It would be unsafe for the Secretary of State to grant consent without ensuring, so far as he can, that the requirements of the Directive would be met.

## 4. POLICY FRAMEWORK

### 4.1. Introduction

- 4.1.1. The documents referred to below are statements of overarching policy which are central and applicable to planning decisions affecting biodiversity. It is presumed that the Examining Authority has copies of them, and therefore it has not been thought necessary to include them as Annexes to these Representations.

### 4.2. National Policy Statements

- 4.2.1. This section summarises the provisions of *EN-1: Overarching Policy Statement for Energy* and *EN-3 National Policy Statement for Renewable Energy Infrastructure* that are most relevant to Natural England's case in relation to particular topics<sup>58</sup>. Bracketed references are made to the corresponding sections of each NPS.
- 4.2.2. **Environmental Statement** - When considering an application for a DCO, the Secretary of State and the Examining Authority should satisfy themselves that likely significant effects, including any significant residual effects taking account of any proposed mitigation measures or any adverse effects of those measures, have been adequately assessed [EN-1 at 4.24]. Where necessary, the Secretary of State and the Examining Authority should request further information where necessary to ensure compliance with the EIA Directive [EN-1 at 4.24].
- 4.2.3. **Habitats and Species Regulations** - Prior to granting a DCO, the Secretary of State must, under the Habitats Regulations, consider whether the project may have a significant effect on a European site (including Ramsar sites), either alone or in combination with other plans or projects [EN-1 at 4.3.1].
- 4.2.4. The Applicant should seek the advice of Natural England and provide the Examining Authority, with such information as it may reasonably require, to determine whether an Appropriate Assessment is required [EN-1 at 4.3.1]. In the event that an Appropriate Assessment is required, the Applicant must provide the Examining Authority with such information as may be reasonably be required to enable it to conduct the Appropriate Assessment [EN-1 at 4.3.1].
- 4.2.5. **National Designations** - In sites with nationally recognised designations (including Sites of Special Scientific Interest and National Parks) consent for renewable energy projects should only be granted where it can be demonstrated that the objectives of designation of the area will not be compromised by the development, and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the environmental, social and economic benefits [EN-3 at 2.5.33].

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<sup>58</sup> References to EN-1 and EN-3 are combined for purposes of this section for purposes of organising the section by topic. This is consistent with, eg, EN-1.3.1, which requires EN-1 to be read "in conjunction" with EN-3. The exact wording of any provision may have been modified in order to remove outdated or irrelevant references (e.g., "IPC" is replaced with "Secretary of State" or "Examining Authority" where relevant, or references to designations that are irrelevant to the facts of this case, such as AONBs have been removed) in order to adapt these provisions to the circumstances of this case for the purposes of these Written Representations.

- 4.2.6. **Impacts on Biodiversity and Geological Conservation** - Where the development is subject to EIA, the Applicant should ensure that the ES clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity [EN-1 at 5.3.3]. The Applicant should also show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests [EN-1 at 5.3.3].
- 4.2.7. As a general principle, development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. Where significant harm cannot be avoided, compensation measures should be sought [EN-1 at 5.3.7].
- 4.2.8. In taking decisions, the Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; habitats and other species of principal importance for the conservation of biodiversity; and to biodiversity and geological interests within the wider environment [EN-1 at 5.3.8].
- 4.2.9. Where a development proposal is located outside of a SSSI and is likely to have an adverse effect on the SSSI (either individually or in combination with other developments), development should not normally be granted. Where an adverse effect, after mitigation, on the SSSI's notified special interest features is likely, an exception should only be made where the benefits (including need) clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs [EN-1 at 5.3.11]. The Secretary of State should use requirements and/or planning obligations to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest [EN-1 at 5.3.11].
- 4.2.10. For species and habitats that have been identified as being of principal importance for the conservation of biodiversity in England, the Secretary of State should ensure that these are protected from the adverse effects of development by using requirements or planning obligations [EN-1 at 5.3.17]. The Secretary of State should refuse consent where harm to the habitats or species would result, unless the benefits (including need) of the development outweigh that harm [EN-1 at 5.3.17]. In this context the Secretary of State should give substantial weight to any such harm to the detriment of biodiversity features of national or regional importance which it considers may result from the proposed development [EN-1 at 5.3.17].
- 4.2.11. The Applicant should include appropriate mitigation measures as an integral part of the development. These include measures that will minimise harm to species or habitats during the construction of the operation and, where practicable, restore habitats after construction work have finished [EN-1 at 5.3.18]. Where the Applicant cannot demonstrate this, the Secretary of State (and the Examining Authority) should consider what appropriate requirements should be attached to any consent and/or planning obligations entered into [EN-1 at 5.3.19].

- 4.2.12. The Secretary of State (and the Examining Authority) will need to take account of what mitigation measures may have been agreed between Natural England or the Marine Management Organisation, and whether these bodies have granted or refused or intends to grant or refuse, any relevant licences, including protected species mitigation licences [EN1 at 5.3.20].
- 4.2.13. The following provisions of EN-3 are of particular relevant to Natural England's case in relation to the topic of Biodiversity and Geological Conservation:
- 4.2.14. **Impacts on Birds** -The Secretary of State (and the Examining Authority) will want to be satisfied that the collision risk assessment has been conducted to a satisfactory standard having had regard to the advice from the relevant statutory advisor [EN-3 at 2.6.104].
- 4.2.15. Subject to other constraints, wind turbines should be laid out within a site, in a way that minimises collision risk, where the collision risk assessment shows there is a significant risk of collision [EN-3 at 2.6.108].
- 4.2.16. **Impacts on Marine Mammals** - If piling associated with an offshore windfarm is likely to lead to the committing of an offence (which would include deliberately disturbing, killing or capturing a European Protected Species), an application may have to be made for a wildlife licence (to the Marine Management Organisation) to allow the activity to take place [EN-3 at 2.6.91].
- 4.2.17. Where assessment shows that noise from offshore piling may reach noise levels likely to lead to such an offence, the Applicant should look at possible alternatives or appropriate mitigation before applying for a licence [EN-3 at 2.6.93].
- 4.2.18. The Secretary of State (and the Examining Authority) should be satisfied that the preferred methods of construction, in particular the construction method needed for the proposed foundations and the preferred foundation type, where known at the time of application, are designed so as to reasonably minimise effects on marine mammals [EN-3 at 2.6.94]. Unless suitable noise mitigation measures can be imposed by requirements to any development consent the Secretary of State may refuse the application [EN-3 at 2.6.94].
- 4.2.19. **Impacts on Fish, Intertidal and Subtidal Habitats** - The Applicant's assessment should include relevant information about the impacts of development activities (including cabling) on the likely receptors, including the potential loss of habitats [EN-3 at 2.6.74, 2.6.81 and 2.6.113].
- 4.2.20. The Secretary of State (and the Examining Authority) should be satisfied that activities during the construction, operational and decommissioning phases (including cabling) have been appropriately designed, including in relation to the mitigation of adverse effects on fish and intertidal and subtidal habitats, to avoid or minimise harm to those features wherever possible in accordance with the relevant NPS policies on biodiversity [EN-3 at 2.6.72 to 2.6.89 and 2.6.111 to 2.6.119; see also EN-1 at 5.3.7 & 5.3.8]. Any consent that is granted by the Secretary of State should be flexible to allow for necessary micro-siting of elements of the proposed wind farm during its construction [EN-3 at 2.6.194].
- 4.2.21. **Impacts on Physical Environment** - The assessment should include predictions of the physical effect that will result from the construction and operation of the

required infrastructure and include effects such as the scouring that may result from the proposed development [EN-3 at 2.6.194].

- 4.2.22. The Secretary of State (and the Examining Authority) should be satisfied that the methods of construction, including use of materials, are such as to reasonably minimise the potential for impact on the physical environment [EN-3 at 2.6.196].
- 4.2.23. Mitigation measures which the Secretary of State (and the Examining Authority) should expect, include the burying of cables to a necessary depth and using scour protection techniques around offshore structures to prevent scour effects around them, and Applicants should consult the statutory consultees appropriate mitigation [EN-3 at 2.6.197].
- 4.2.24. **Future Monitoring of Environmental Impacts** - The Secretary of State (and the Examining Authority) should consider whether the Applicant should be required to undertake monitoring prior to and during the development's construction, and during its operation, in order to measure and document the effects of the development. This enables an assessment of the accuracy of the original predictions and may inform the scope of future EIAs [EN-3 at 2.6.5.1].
- 4.2.25. Ecological monitoring is likely to be appropriate during the construction and operational phases to identify the actual impact so that, where appropriate, adverse effects can then be mitigated and enable further useful information to be published relevant to future projects [EN-3 at 2.6.71].

#### 4.3. **National Planning Policy and Guidance on Protected Sites and Species**

- 4.3.1. **National Planning Policy Framework (“NPPF”)** - Although the NPPF does not contain specific policies for NSIPs, and defers to the NPSs in this respect, it is submitted that the provisions of the NPPF, including those relevant to the conservation and enhancement of the natural environment, are both important and relevant considerations, and should be taken into account by the Secretary of State and the Examining Authority for purposes of assessing this DCO application<sup>59</sup>.
- 4.3.2. NPPF makes it clear that setting is an important consideration in relation to heritage assets. It notes that the significance of a heritage asset derives not only from its physical presence, but also from its setting (para 172 and 173).
- 4.3.3. **Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System (ODPM 06/2005)** - This Circular is relevant here, as indicated in EN-1 at, e.g., 5.3.2. Reference to certain provisions of that Circular has already been made in relation to Section 3 of these Written Representations (the Legislative Framework).
- 4.3.4. In addition, Natural England refers to the following provisions of the Circular that are relevant to Natural England's case for the purposes of this examination.
- 4.3.5. *European sites*: In relation to Step 2 of paragraph 3.3.8, *supra* (the 'likely significant effect' determination under the Habitats Regulations Assessment steps), the Circular provides:

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<sup>59</sup> See NPPF at paragraph 45.

- a. The decision on whether an appropriate assessment is necessary should be made on a precautionary basis. An appropriate assessment is required where there is a probability or a risk that the plan or project will have significant effects on the site. This is in line with the ruling of the European Court of Justice in Case C-127/02 (the Waddenzee Judgement) which said '*any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or project*'<sup>60</sup>.
- b. If an appropriate assessment is required, [it] is for the decision-taker to consider the likely and reasonably foreseeable effects and to ascertain that the proposal will not have an adverse effect on the integrity of the site before it may grant permission. If the proposal would adversely affect integrity, or the effects on integrity are uncertain, but could be significant the decision-taker should not grant permission, subject to the provisions of regulations' 64 and 68 of the Habitats Regulations (or regulations 28 and 36 of the Offshore Regulations).<sup>61</sup>
- c. In the Waddenzee judgement, the European Court of Justice ruled that a plan or project may be authorised only if a competent authority has made **certain** that the plan or project will not adversely affect the integrity of the site. 'That is the case where no reasonable scientific doubt remains as to the absence of such effects.' Competent national authorities must be '**convinced**' that that there will not be an adverse effect.<sup>62</sup>

4.3.6. *Protected Species:* With respect to wild plant and animal species (including all species of wild bird) protected under the 1981 Act or the Habitats Regulations

- a. It is essential that the presence [of] protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision.<sup>63</sup>

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<sup>60</sup> Circular 06/2005 at paragraph 13.

<sup>61</sup> *Id* at paragraph 20; references to the Habitats Regulations and Offshore Regulations are as amended.

<sup>62</sup> *Id* at paragraph 21.

<sup>63</sup> *Id* at paragraph 99.



4.3.7. **Advice Note 10: Habitats Regulation Assessment** - The Examining Authority is also reminded of the Planning Inspectorate's own Advice note 10: Habitats Regulations Assessment (April 2012).

#### 4.4. **European Commission Guidance**

4.4.1. The European Commission has produced guidance on the protected sites and species procedures. This includes the following relevant guidance:

- Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2018);
- EC (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC (November 2001);
- Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC (2007);
- The implementation of the Birds and Habitats Directives in estuaries and coastal zones (2011);
- Wind energy developments and Natura 2000 (October 2010);
- Non-energy mineral extraction and Natura 2000 (July 2010); and
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC (final version February 2007).

Natural England's key to RAG status	Risk
<p><b>Purple</b> Note for Examiners and/or competent authority. May relate to DCO/DML</p>	
<p><b>Red</b> Natural England considers that unless these issues are resolved it will have to advise that (in relation to any one of them, and as appropriate) it is not possible to ascertain that the project will not affect the integrity of an SAC/SPA and/or comply fully with the Environmental Impact Assessment requirements and/or avoid significant adverse effect on landscape/seascape, unless the following are satisfactorily provided:                      new baseline data;                      significant design changes; and/or                      significant mitigation;                      Natural England feels that issues given Red status are so complex, or require the provision of so much outstanding information, that they are unlikely to be resolved during examination, and respectfully suggests that they be addressed beforehand.</p>	
<p><b>Amber</b> Natural England considers that if these issues are not addressed or resolved by the end of examination then they would become a Red risk as set out above. Likely to relate to fundamental issues with assessment or methodology which could be rectified; preferably before examination.</p>	
<p><b>Yellow</b> These are issues/comments where Natural England doesn't agree with the Applicant's position or approach. We would flag these at the PEI stage with the view that they would be addressed in the Application. But otherwise we are satisfied for <u>this particular project</u> that it will not make a material difference to our advice or the outcome of the decision-making process. However, it should be noted that this may not be the case for other projects. Therefore it should be noted by interested parties that just because these issues/comments are not raised as part of our Relevant Representations in this instance it should not be understood or inferred that in other cases or circumstances Natural England will take this approach. Furthermore, these may become issues should further evidence be presented.</p>	
<p><b>Green</b> Natural England supports the Applicant's approach.</p>	

Point	Natural England's Relevant Representation	RAG Status Rel and WR Rep
<b>Offshore Ornithology (Appendix A)</b>		
1	Red-throated diver displacement impacts on Outer Thames Estuary SPA	Red
2	Collision Risk Modelling (CRM) parameters	Yellow
3	Cumulative and in-combination assessments (displacement and CRM);	Red
4	Scale of predicted cumulative and in-combination collision impacts and requirement for mitigation.	Red
5	Post-construction monitoring.	Red
<b>Marine Mammals (Appendix B)</b>		
6	Need for regulatory mechanism to manage multiple Site Integrity Plans (SIPs) across offshore wind farm projects.	Purple
7	Frequency of piling and UXO activities	Red
<b>Terrestrial Ecology (Appendix C)</b>		
8	Potential for supporting habitat loss within the Sandling SPA	Yellow
9	Clarification of redline boundary for cable corridor	Red
10	Potential for disturbance to designated breeding features of Sandlings SPA	Red
11	Request for SNCB consultation on management plans	Yellow
<b>Landscape and Visual Impact Assessment (LVIA) – Terrestrial aspects of the project (Appendix D)</b>		
12	Need for more information on construction phase activities and subsequent impacts to landscape and Suffolk Coast and Heaths AONB.	Yellow
<b>Seascape and Landscape Visual Impact Assessment (SLVIA) - 'Offshore' elements of the project (Appendix E)</b>		
13	Night-time effects of navigational lighting have not been assessed for rural locations	Red
14	Significant cumulative effects with the EA2 OWF project.	Yellow
<b>Development Consent Order, Deemed Marine Licences and related certified documentation (Appendix G)</b>		
15	Definitions of commence, and offshore preparation are not appropriate as they may allow significantly damaging works to be undertaken prior to approval of monitoring, mitigation or construction plans.	Yellow
16	Cable protection should not be permitted to be deployed over any area over the full lifetime of the project.	Yellow
17	Unexploded ordnance (UXO) is not appropriately described within the Development Consent Order (DCO)/Deemed Marine Licences (DML)s	Yellow

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix A - Offshore Ornithology	RAG Status Rel and WR Rep
<b>1. Red-throated diver displacement impacts on Outer Thames Estuary SPA (OTE SPA)</b> Document used: 5.3 EA1N Information to Support the Appropriate Assessment Report		
1	Part of the EA1N offshore windfarm (OWF) array area is immediately adjacent to the OTE SPA and, based on studies conducted at other windfarms, is likely to result in displacement of red-throated divers, leading to a long-term reduction in the abundance of divers within part of the SPA and a re-distribution of the interest feature, and result in an adverse effect on integrity (AEOI) from the project alone. Natural England's advice is that to avoid an AEOI the boundary of the development should be amended so no part of the array is within 10 km of the boundary of the SPA.	
2	Natural England recommends that the Applicant reviews the targets and supporting notes for the attributes identified in our relevant representation. The targets set out the desired state of the attribute and the supporting notes provide detailed evidence of displacement impacts on red-throated diver, through changes in habitat distribution and disturbance caused by offshore wind farms.	
3	Natural England notes that the level of vessel traffic associated with site maintenance has been quantified, but consideration of the impact of this element has not been further considered. The operation of the site will necessitate an increase in the number of vessel journeys through the SPA, involving both boats and helicopters. As both have the potential to be disturbing to red-throated diver, the impacts of these need to be considered and where appropriate mitigated.	
4	Natural England agrees with the conclusion that there is likely to be no adverse effect alone as a result of red-throated diver displacement due to cable laying. Our conclusion is based on the fact that the cable laying operations are of a temporary nature. However, given Natural England's view that we are already unable to rule out AEOI in-combination from displacement as a result of disturbance within the SPA, we maintain that a seasonal restriction in cable laying activity should put be in place to minimise the effects on red-throated diver.	
5	Natural England does not agree with the Applicant's estimate that up to 33 individuals will be displaced within the SPA by the proposed EA1N project. Firstly, the extent of displacement effects is known to extend to beyond 10km, and therefore assuming that displacement effects only go out to 4km (even if assuming 100% displacement within that area) means the impacts are potentially underestimated. In addition, the permanent loss of the availability of SPA supporting habitat, due to the presence of the windfarm means the conservation objectives to maintain the extent of supporting habitat will not be met. If a 10km buffer is used, based on the recent OTE survey data Natural England calculates that 70 individuals would be displaced	
6	The focus on predicted mortality and the effect this would have on the abundance of red-throated divers within the SPA is not the only issue for assessing impacts on the SPA. As stated previously, the change in distribution of divers due to the close proximity of the proposed array to the OTE SPA also needs to be considered. Moreover, it is worth noting that the mortality rates are a relatively crude method of capturing a range of potentially deleterious effects that could arise from displacement, including reduced fitness for migration and reduced productivity during the breeding season.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix A - Offshore Ornithology	RAG Status Rel and WR Rep
7	As stated by the Applicant, there is a requirement to maintain the extent and distribution of supporting habitats for the designated species. Natural England does not agree with the statement that "this requirement is not strictly at risk". Although the turbines themselves are not proposed to be constructed within the SPA, the supporting habitat will be directly affected because red-throated diver avoid areas in the vicinity of wind turbines, even when they are many kilometres away. There will be a change in the distribution of qualifying features (i.e. red-throated diver) within the site local on a continuing basis, and consequently a change in availability, extent and distribution of the habitats of the qualifying features. Therefore, Natural England advises that an AEOI cannot be ruled out beyond reasonable scientific doubt for the project alone.	
8	There are in-combination effects from operational windfarms within the SPA. As noted by the Applicant, low densities within existing operational windfarms reported in Irwin and others (2019) provides evidence of the impact of operational windfarms on the distribution of red-throated divers within the SPA. Natural England is already of the opinion that an AEOI of the red-throated diver population of the OTE SPA cannot be ruled out beyond all reasonable scientific doubt, as a result of the scale of in-combination displacement due to consented and operational projects within the SPA (Natural England, 2019). Our advice remains that AEOI in-combination cannot be ruled out. Any additional effects in terms of reduced habitat availability and changing the distribution of red-throated diver within the SPA as a result of EA1N will only add to in-combination impacts.	
<b>2. Collision Risk Modelling (CRM) parameters.</b> Document used: 6.1.12 EA1N Environmental Statement Chapter 12 Offshore Ornithology, 6.3.12.2 EA1N Environmental Statement Appendix 12.2 Ornithology Technical Appendix, 5.3 EA1N Information to Support the Appropriate Assessment Report		
9	Natural England recommends that the Applicant takes a more narrative approach to the assessment, and considers the Option 1 outputs for the species identified in our relevant representation in the context of the relevant Option 2 95% CIs, as part of a more range-based approach to consideration of CRM impacts. This should not just consider the mean/central predicted collision figures, but also those based on the range of predicted figures resulting from the Applicant's consideration of the uncertainty/variability in the input parameters.	
10	It is of concern that the predicted mortalities using CRM Option 1 are significantly higher than the outputs using Option 2, which is based on generic boat based estimates.	
11	Natural England welcomes the use of our recommended Avoidance rates and nocturnal activity factors, and accept that there is an argument to present the Applicant's preferred options alongside. However, given the significant difference in predicted mortality when Option 1 is used, we advise suggest that this demonstrates that overall assessments of collision risk may not be precautionary enough. The fact that predictions would be significantly higher using Option 1 adds strength to the argument that hub height should be increased to reduce the collision risk as much as possible.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix A - Offshore Ornithology	RAG Status Rel and WR Rep
<b>3. Cumulative and In-combination Assessments</b> Documents used: 6.1.12 EA1N Environmental Statement Chapter 12 Offshore Ornithology (Paragraph numbers given refer to this document), 6.3.12.3 EA1N ES Appendix 12.3 Supplementary Information for the Cumulative Impact Assessment.		
12	The cumulative operational displacement assessment totals for red-throated diver are based on an incomplete data set. Table 12.37 excludes a number of projects including Gunfleet Sands, Kentish Flats, Kentish Flats Extension, London Array and Scroby Sands. These missing projects will reduce the confidence in the assessments and result in a significant under-estimation of the cumulative/in-combination assessments.	
13	The disproportionate contribution that EA1N makes is clear in Table A12.3.9. EA1N alone contributes 9.5% of the cumulative total, whereas all other Tier 4 projects combined (i.e. excluding EA1N) contribute 5.6% of the relative contribution to potential displacement. Although the approach considering the relative contribution to the cumulative total is helpful, and identifies that EA1N does make a significant contribution, it does not adequately consider the overall level of cumulative displacement. This is due to displacement from a number of projects not being included.	
14	Whilst it is stated by the Applicant that the assessment includes several sources of precaution, it includes assumptions that may not reflect the full extent of diver displacement. Although Natural England welcomes that assumptions around 100% displacement out to 4km are used, we know that in some cases this may underestimate the degree of displacement if the extent of displacement is 10km or more. In addition, there are a number of OWF excluded from the analysis and it is therefore not considering the full extent of cumulative displacement.	
15	Due to the Applicant's worst case scenario assessment of minor adverse, and considering that some projects are not included in the assessment, Natural England is unable to rule out a significant adverse effect for cumulative operational displacement on red-throated diver at the EIA scale.	
16	12.7.3.3 Para 325-336 The cumulative auk (razorbill and guillemot) operational displacement assessment totals are based on an incomplete data set. The following wind farm projects are missing from the assessments: Beatrice Demonstrator, Gunfleet Sands, Kentish Flats, Kentish Flats Extension, Methil, Rampion and Scroby Sands. Whilst these missing projects are likely to involve low numbers of auks, the missing data would reduce confidence in the assessments and due to the potential under-estimation of the cumulative assessments.	
17	Natural England is not in a position to advise that an AEOI can be ruled out for the razorbill and guillemot features of the Flamborough and Filey Coast SPA (FFC SPA) for impacts in-combination with other plans and projects when Hornsea 3 was included in the in-combination total. The East Anglia OWFs are adding further birds to these totals, as would Hornsea 4, and therefore our assessment is that it is not possible to rule out a significant effect at cumulative EIA scale for guillemot and razorbill displacement, or an adverse effect on integrity of the guillemot and razorbill features of the FFC SPA.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix A - Offshore Ornithology	RAG Status Rel and WR Rep
18	<p>The cumulative annual gannet collision risk prediction of 2,607 as set out in Table 12.42 differs to the totals agreed at the end of the Norfolk Vanguard examination, which was 2,735. It is not clear why these two totals differ. We seek clarification regarding this matter.</p> <p>We also note that the totals do not include figures from Hornsea 4. A PEIR for this project is available. Even without the additional figure from Hornsea 4, the total predicted annual mortality exceeds 1% of baseline mortality. Therefore these impacts require further consideration.</p> <p>Furthermore, during the Vanguard examination, due to Natural England's concerns regarding the incomplete baseline surveys for the Hornsea 3 project, and the associated level of uncertainty as regards the potential impacts of that project, Natural England was not in a position to advise that an AEOI could be ruled out for the gannet features of the Flamborough and Filey Coast SPA (FFC SPA) for impacts in-combination with other plans and projects when Hornsea 3 was included in the in-combination total.</p>	
19	<p>Natural England acknowledges that a higher avoidance rate of 99.5% for gannet has been recommended by Bowgen &amp; Cook (2018) and that this would significantly reduce the cumulative total. Natural England and the other SNCBs are currently considering our response to the recommendations in Bowgen &amp; Cook (2018). Our current advised avoidance rates are those set out in SNCBs (2014).</p>	
20	<p>Natural England acknowledges that assuming 25% nocturnal activity with gannet is precautionary, and that is why we have moved to a position of presenting a range of nocturnal activity between 0% and 25%. We note that the nocturnal activity factor from the review of nocturnal activity in gannets (Furness and others 2018) has not been used in the assessment.</p>	
21	<p>The kittiwake cumulative collision risk assessment in Table 12.43 differs to the totals agreed by Natural England at the end of the Vanguard hearing. This agreed total was 4,114. There will also be a need to include the figures from Hornsea 4's PEIR. Before these figures are added there is already a 2.5% increase above baseline mortality.</p>	
22	<p>Whilst Natural England notes that some projects have built out to less than their consented capacity, we do not accept that it is appropriate to revisit the cumulative collision risk whilst consents for unused capacity remain in place and in the absence of re-run collision risk assessments using the built turbine parameters.</p>	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix A - Offshore Ornithology	RAG Status Rel and WR Rep
23	Natural England notes that taking into account some elements of potential precaution e.g. nocturnal activity rates will lead to a reduction in mortality estimates. However, there are elements of the assessment, such as the use of generic potential collision heights (PCHs) rather than site specific PCHs, which could result in an underestimate of collision risk. There is also the critical issue of variability in all of the input data, not least in bird density. In that context, Natural England advised that a significant (moderate adverse) impact on kittiwake cannot be ruled out due to cumulative collision totals at the end of Vanguard, and therefore adding more collisions from Boreas, the East Anglia projects and Hornsea 4 will not change this position.	Red
24	Whilst Natural England acknowledges that there are elements of the cumulative assessment that result in a higher mortality total, we have concerns about use of Option 2 and the fact that much higher predicted collisions are predicted when using Option 1. However, we agree that the cumulative impact on lesser black-backed gull at the EIA scale is minor adverse (not significant).	Yellow
25	An increase of 6% above baseline mortality for great black-backed gull based on the largest Biologically Defined Minimum Population Scale (BDMPS) is significant.	Red
26	Natural England notes that it is suggested that using a nocturnal activity factor of 3 (50%) in collision risk modelling is likely to be an overestimate of nocturnal activity. For that reason we advise that a range between 25% and 50% are presented with the assessment.	Red
27	The Population Viability Analysis (PVA) model outputs predicted populations being up to 7.7% smaller using the density dependent model, and up to 21.5% smaller than the un-impacted scenario using density independent outputs based on an annual mortality of 900. At the end of the Norfolk Vanguard examination Natural England's position was that we were unable to rule out a significant (moderate adverse) effect on great black-backed gull from cumulative collision mortality at an EIA scale, and that position has not changed.	Red
28	Natural England disagrees with the summary that concludes no greater than minor adverse significance for all species. At the end of Norfolk Vanguard we advised significant adverse effect at EIA for cumulative collision for gannet, kittiwake and great black-backed gull. Since then more birds have been added to these totals from Boreas, EA1N, EA2 and also Hornsea 4, and as a result our position on these species remains unchanged.	Red



Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix A - Offshore Ornithology	RAG Status Rel and WR Rep
<p><b>4. Scale of predicted cumulative and in-combination impacts and requirement for mitigation.</b>                      Documents used:                      5.3 EA1N Information to Support the Appropriate Assessment Report,                      6.1.12 EA1N Environmental Statement Chapter 12 Offshore Ornithology,                      6.3.12.3 EA1N ES Appendix 12.3 Supplementary Information for the Cumulative Impact Assessment.</p>		
29	<p>Natural England has previously provided regulators with our advice regarding our concerns about predicted level of cumulative and in-combination impacts on North Sea seabirds.</p> <p>For EIA we have been unable to rule out a significant adverse effect for cumulative operational impacts on:</p> <ul style="list-style-type: none"> <li>• kittiwake, gannet and great black-backed gull for cumulative collision impacts;</li> <li>• guillemot, razorbill and red-throated diver for cumulative displacement impacts</li> </ul> <p>For HRA we have been unable to rule out adverse effect on integrity on:</p> <ul style="list-style-type: none"> <li>• kittiwake from FFC SPA due to in-combination collision impacts not including Hornsea 3, and gannet from FFC SPA due to in-combination collision impacts when Hornsea 3 is included.</li> <li>• guillemot and razorbill at FFC SPA due to in-combination displacement effects when Hornsea 3 is included.</li> <li>• lesser black-backed gull from Alde-Ore Estuary SPA due to in-combination collision impacts.</li> <li>• red-throated diver from Outer Thames Estuary SPA due to in-combination displacement effects.</li> </ul> <p>These concerns as expressed during the Vanguard examination are likely to only intensify given that additional birds from Boreas, the East Anglia projects and Hornsea 4 are being added to these totals. Natural England therefore considers that without major project-level mitigation being applied to all relevant projects coming forward, there is a significant risk of large-scale impacts on seabird populations. Natural England therefore recommends that EA1N and EA2 commit to raising turbine draught height, as has been done by other projects (e.g. Hornsea 2, East Anglia 3 and Vanguard), in order to minimise their contribution to the cumulative/in-combination collision totals by as much as is possible.</p> <p>We also strongly recommend that the boundary of EA1N and EA2 arrays are re-designed to ensure that arrays are at least 10km from the boundary of the OTE SPA to avoid displacement of red-throated diver within the SPA.</p>	
<p><b>5. Post consent monitoring.</b>                      Documents used: 8.13 EA1N Offshore In Principle Monitoring Plan</p>		
30	<p>Natural England notes that reference is made to supporting "joint industry projects or alternative site based monitoring of existing seabird activity inside the area(s) within the Order Limits in which it is proposed to carry out construction works with its potential wider benefits." It is not clear what is being proposed or what the mechanism may be to ensure that appropriate monitoring is undertaken. We therefore recommend that the most significant area or areas of ornithological uncertainty is identified, and an in-principle monitoring plan is agreed.</p>	



Point	Taken from Natural England’s Relevant and Written Representations EA1N Appendix A - Offshore Ornithology	RAG Status Rel and WR Rep
31	<p>Natural England welcomes the statement in the In Principle Monitoring Plan that the Applicant will engage with stakeholders and that the methodology would be developed through the Ornithological Monitoring Plan (required under Condition 14(1) (I) of Schedule 9 and 10 of the DCO). We agree with the Applicant that the aims of monitoring should be to reduce uncertainty for future impact assessment and address knowledge gaps.</p> <p>However, we disagree with the Applicant’s assertion that displacement effects on red-throated diver would not create impacts of more than minor adverse significance during any biological season during construction and operation phases. Validating the extent of red-throated diver displacement will be the main priority for any post-consent monitoring.</p> <p>Natural England also disagrees that the risk to birds from cumulative collisions with wind turbines across all windfarms considered is assessed as no greater than minor adverse significance for all species. For kittiwake, gannet and great black-backed gull we are unable to rule out significant impact cumulatively.</p> <p>Given Natural England’s previous advice at recent projects regarding our concerns about predicted levels of cumulative and in-combination impacts on seabirds and this project’s likely contribution to those impacts should it be consented, we consider the aspects that are likely to be relevant for consideration for post-consent monitoring are as follows:</p> <ul style="list-style-type: none"> <li>• Validating levels of red-throated diver displacement;</li> <li>• Improving our understanding of collision risk (which could potentially include monitoring of collisions at the site via cameras on turbines, improvements to modelling, options for mitigation and reduction);</li> <li>• Collection of reliable data on seabird flight heights.</li> </ul> <p>Once the final impact figures are agreed, the key issues should be identified so that discussion can be held with relevant stakeholders and the Applicant to identify what it the most appropriate focus of post consent ornithological monitoring.</p>	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix B - Marine Mammals	RAG Status Rel and WR Rep
Document Used: 6.1.11 EA1N Environmental Statement Chapter 11 Marine Mammals		
1	The phrases 'same day' and '24 hour period' seem to be used interchangeably throughout the marine mammal chapter and associated documentation when they are not quite the same thing. If this follows through to the assessment stage Natural England considers a clarification note may be required as to the intended wording and any consequences for either the EIA or HRA.	
Document Used: 5.3 EA1N Information to Support Appropriate Assessment Report		
2	Natural England welcomes the commitments from the Applicant listed here and considers they should be specifically conditioned on the face of the deemed marine licence (DML), particularly to ensure there is no concurrent piling between EA1N and EA2. Please see Point 11 in Appendix G.	
3	Although it is correct to say disturbance of harbour porpoise will not exceed 20% of the seasonal component of the site at any one time, the 20% threshold is for disturbance of harbour porpoise in any given day. Therefore detonation of 2 unexploded ordnance (UXO) in a 24 hour period would easily exceed the 20% threshold and disturb harbour porpoise from 32% of the winter area of the site, assuming the 2 UXO detonations are spatially separate from each other. Natural England therefore disagrees with the conclusion drawn in paragraph 512 that there is no significant disturbance or potential adverse effect on the SNS SAC if more than 1 UXO is detonated on any given day. Natural England considers that UXO detonations should be limited to 1 on any given day and this should be secured in the DML.	
4	As per comment 4 above, the 20% threshold applies to any given day so if 1 piling event disturbs harbour porpoise from 16% of the winter component of the Southern North Sea then 2 piling events on any given day will result in 32% of the SAC winter area being disturbed, therefore exceeding the 20% threshold. Therefore, Natural England disagrees with the conclusion of no significant disturbance and no potential adverse effect on the integrity of the SNS SAC if more than 1 piling event occurs on any given day. Natural England considers piling activities should be limited to 1 on any given day and this should be secured in the DML.	
5	As per previous comments, if 1 UXO detonation and 1 piling event were to occur on the same given day as described in paragraph 626, the area of the winter component of the SNS SAC that harbour porpoise would be disturbed from would exceed the 20% threshold.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix B - Marine Mammals	RAG Status Rel and WR Rep
Document Used: 8.17 EA1N In-principle Southern North Sea SAC Site Integrity Plan		
6	Natural England welcomes the commitments from the Applicant listed here and considers they should be specifically conditioned on the face of the DML, particularly to ensure there is no concurrent piling between EA1N and EA2. Please see Point 11 in Appendix G.	
7	As per Natural England's previous advice, a mechanism needs to be developed by the regulators to ensure continuing adherence to the statutory nature conservation bodies (SNCB) thresholds over time. Multiple Site Integrity Plans (SIPs) will be developed, piling can take place over several years, and new projects can come online during this time. Should potential exceedance of the thresholds occur, a process for dealing with this issue needs to be in place – the affected developers / industries will need to work together with the regulator and SNCBs to prevent adverse effect on the Southern North Sea Special Area of Conservation (SNS SAC). Until the mechanism by which the SIPs will be managed, monitored and reviewed is developed, Natural England are unable to advise that this approach is sufficient to address the in-combination impacts described below and therefore the risk of Adverse Effect on Integrity (AEOI) on the SNS SAC cannot be fully ruled out.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix C - Terrestrial Ecology	RAG Status Rel and WR Rep
Document used: 5.3 EA1N Information to Support the Appropriate Assessment Report		
1	If an open cut trench method is selected habitat restoration should be implemented to compensate and improve supporting habitat lost. Any scrub removed should be reinstated by planting hawthorn and blackthorn. Areas of acid grassland should be created as heathland by ensuring that soil removed is appropriately stored, reinstated and capped with sandy topsoil. Locally sourced heather seed should be sown across the restoration area to recreate pioneer heath. The Applicant should provide information on the areas to be restored and methodology including timescales and species. The applicant should consider opportunities for net gain in improving and extending relevant and supporting habitats. We recommend consultation with the landowner and RSPB is sought regarding restoration works and net gain opportunity.	
2	Natural England reiterate the preference for HDD under the Sandlings SPA to avoid supporting habitat loss, which will take some time to return to its previous condition. Should HDD be used, sufficient detail on methodology and safeguards to prevent a drilling mud outbreak should be produced. Should a bentonite outbreak occur the HDD document should specify that Natural England will be contacted within 24hours and prior to the commencement of any clean-up operations, as the clean-up may on occasion be more damaging than the outbreak. We advise that an outline bentonite frackout document should be provided during examination for each of the HDD locations	
Document used: 5.4 EA1N Consents and Licences Required under other Legislation		
3	Natural England advises that should altered/new proposals be planned within a Site of Scientific Interest (SSSI), which are not currently considered as part of the DCO and Application then an assent may be required under the Wildlife and Countryside Act 1981 (as amended) from Natural England.	
Document used: 6.1.22 EA1N Environmental Statement Chapter 22 Onshore Ecology		
4	Consideration should be given to Leiston to Aldeburgh SSSI and coastal vegetated shingle in the case of a bentonite or drilling mud outbreak. Information should be provided on engineering design, depth and break out contingencies. This should be provided in the form of outline plan and secured in the DCO/DML	
5	We advise that all nationally protected species, are considered of at least moderate importance.	
6	Within the Leiston to Aldeburgh SSSI the variety of water bodies and terrestrial habitats provides suitable breeding and hunting areas for many species of dragonfly and damselfly, including the nationally scarce hairy dragonfly <i>Brachytron pratense</i> . We advise consideration of this species, as previously requested in Natural England's advice letter dated the 26th March 2019.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix C - Terrestrial Ecology	RAG Status Rel and WR Rep
7	The impact on coastal habitat from bentonite and drilling mud break outs should be considered.	
8	The Hundred River feeds into Sandlings SPA and we would expect to see an assessment of alternatives to include HDD under this water course and impacts outlined. However, should HDD be used, sufficient detail on methodology and safeguards to prevent a drilling mud outbreak should be produced. Should a bentonite outbreak occur the HDD document should specify that Natural England will be contacted within 24hours and prior to the commencement of any clean-up operations, as the clean-up may on occasion be more damaging than the outbreak. We advise that an outline bentonite frackout document should be provided during examination for each of the HDD locations We welcome the commitment to reinstate and improve habitats.	
9	Any works that directly impact upon badgers should be subject to mitigation, compensation and/or a protected species license from Natural England to avoid an offence under the Wildlife and Countryside Act 1981 (as amended). We refer to the Planning Inspectorates advice note 11 which advises early engagement with Natural England. We advise that an outline plan is provided.	
10	Mitigation should include micro-siting of cable route to avoid badger setts, and mitigation and compensation as outlined within Natural England standing advice. This should all be included in an outline plan during examination.	
11	We welcome the mitigation prescribed for bats in principal, but advise that potential impacts to bat habitat should be clearly mapped with roosting, foraging and commuting areas shown in relation to the redline boundary. As consistent with Natural England's previous advice letter the 26th March 2019. The applicant should also consider any in combination impacts with proposed development at Sizewell C and any other foreseeable plans or projects. This should be provided as an outline plan as part of the examination.	
12	Any works that directly impact upon great crested newts should be subject to mitigation, compensation and/or a protected species license from Natural England to avoid an offence under the Wildlife and Countryside Act 1981 (as amended). We refer to the Planning Inspectorates advice note 11 which advises early engagement with Natural England. Natural England advises that the Applicant approaches us for a Letter of No Impediment as early as possible.	
13	The Environmental Statement confirms suitable habitat within the vicinity of works and highlights the possibility of killing or injuring reptiles as a risk during construction. Natural England advises that reptile surveys are completed prior to construction to quantify potential impacts and to finalise mitigation works. Reptile mitigation should ensure that there is no net loss of local reptile conservation status, by providing sufficient quality, quantity and connectivity of habitat to accommodate the reptile population in the long term, either on site or at an alternative site nearby. We advise that an outline plan is provided as part of the examination.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix C - Terrestrial Ecology	RAG Status Rel and WR Rep
Documents used: 6.1.23 EA1N Environmental Statement Chapter 23 Onshore Ornithology		
14	<p>The open cut trench method of cable installation will result in the temporary loss of supporting habitat, including the breeding sites of turtle dove which are cited as a features of interest for Leiston to Aldeburgh SSSI. We understand that any habitat removed during the period of works will be reinstated, however there is a risk that the required mitigation will not be sufficiently established to provide suitable nesting habitat for the following breeding season. Natural England advises that the 3ha of compensatory turtle dove feeding habitat to be provided should be in place in advance of works.</p> <p>We understand that an HDD technique will avoid the loss of designated habitat and on this basis Natural England expresses a preference for an HDD method.</p>	
15	<p>The open cut trench method of cable installation will result in the temporary loss of designated and supporting habitat, including the breeding sites of nightingale which is cited as a feature of interest for Leiston to Aldeburgh SSSI. To mitigate impacts, the Applicant proposes the provision of nesting sites for nightingale will be delivered through habitat management within and on the outskirts of the designated sites and in line with BTO habitat management guidelines. This mitigation method will need to be secured in the DCO and clearly set out in an outline habitat management/mitigation plan as there is the potential for the works themselves to be damaging to the designated sites. We advise that any scrub removal is restored with hawthorn and blackthorn.</p> <p>We understand that an HDD technique will avoid the loss of designated habitat and on this basis Natural England expresses a preference for an HDD method.</p>	
16	<p>We welcome the inclusion of barn owl mitigation and the commitment to consult with the Suffolk Community Barn Owl Project. We advise that any compensatory habitat is provided in appropriate timescales. And should that mitigation be required with the boundary of any designated site then Natural England must be consulted. This will need to be secured in the DCO and included in an outline management plan.</p>	
17	<p>We agree with the necessity of pre-construction surveys prior to any works taking place. If active nests are found, it should be noted that all wild birds, their nests and eggs are afforded legal protection under the Wildlife and Countryside Act 1981 (as amended), and therefore works in the vicinity of the nest may have to be delayed until any chicks have fledged. Or site preparation works need to be agreed upfront with relevant authorities in consultation with Natural England to be locations temporarily unsuitable for nesting.</p> <p>If exclusion or buffer zones are proposed, the size of the exclusion zone should be well researched to reflect the disturbance tolerance level of the species identified and be of a sufficient distance to prevent disturbance (noise, visual and vibration) to nesting birds.</p>	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix C - Terrestrial Ecology	RAG Status Rel and WR Rep
Documents used: 6.7 EA1N Onshore Schedule of Mitigation		
18	<p>Monitoring: Natural England notes that detail on monitoring plans is currently lacking and advises that a commitment to post-construction monitoring is made, in particular in the following cases:</p> <ul style="list-style-type: none"> <li>• 1 year post-completion of turf stripped and grassland areas which have been removed to assess that natural colonisation or reseeded has been successful, and whether additional mitigation works may be required</li> <li>• Following re-instatement of habitats (see Ref 5.12 in Onshore Schedule of Mitigation), in particular if open cut trenching is used.</li> <li>• 7 years monitoring of hedgerows or until the hedgerows have recovered.</li> </ul>	
19	Natural England welcomes the preparation of a project specific Pollution Prevention and Response Plan and advises that we are consulted within 24 hours should there be a pollution incident within or in proximity to a designated site. We also advise that SNCBs, including Natural England are listed as consultees. This should be agreed in outline as part of the examination	
20	1 Natural England welcomes the preparation of a project specific Noise and Vibration Management Plan. We also advise that SNCBs, including Natural England are listed as consultees. This should be agreed in outline as part of the examination	
21	<p>Natural England supports the seasonal restriction of construction works (outside of the breeding bird season; 1st February to 31st August for woodlark and 1st of April to 31st August for nightjar) within the boundary, or 200m outside of the Sandlings SPA to prevent damage or disturbance to designated features of interest.</p> <p>This should be included as a condition in the DCO and COCP. Natural England request consultation on the COCP and suggest that the relevant conservation bodies are included within the document to ensure contact details are accessible if and when required.</p>	
22	Natural England requests that Statutory Nature Conservation Bodies (SNCBs) including Natural England are consulted on the Ecological Management Plan. And that this is included in outline as part of the examination.	
Documents used: 8.7 EA1N Outline Landscape and Ecological Management Strategy		
23	<p>Natural England welcomes the mitigation prescribed for woodland, scrub and trees and encourage the Applicant to incorporate net gain into their strategy. We support the commitment to an aftercare period for all newly planted hedgerow, shelterbelts and woodlands.</p> <p>A Hedgerow Mitigation Plan should be developed in consultation with Natural England prior to the removal of hedgerows. This mitigation plan should be included within Ecological Management Plan, Landscape Management Plan or OLEMS as appropriate</p>	
24	Natural England requests that Statutory Nature Conservation Bodies (SNCBs) including Natural England are consulted on the Ecological Management Plan.	



Point	Taken from Natural England’s Relevant and Written Representations EA1N Appendix D - Landscape and Visual Impact Assessment (LVIA) – Terrestrial aspects of the project	RAG Status Rel and WR Rep
Document Used: 6.1.29 EA1N Environmental Statement Chapter 29 Landscape and Visual Impact Assessment		
1	A vital mitigation measure, should both projects be approved, is for the onshore cabling to be installed for both simultaneously and not sequentially. The former will restrict construction phase impacts to the short term, but the latter would produce medium term impacts on the AONB. The Applicant discusses some ducting possibly being installed to accommodate both schemes when one is being constructed, but the importance of the AONB (a nationally designated landscape with the highest level of planning policy protection) justifies the most effective mitigation being applied i.e. both onshore cabling stages to be completed together and the landscape fully restored as soon as possible.	
2	We believe that more information concerning the schedule for the undergrounding works within and in the immediate setting of the AONB is warranted, covering both the topsoil stripping/trenching (and HDD if relevant) and backfilling/reinstatement of the cable route. We would therefore like to see an anticipated timetable / schedule for how construction activities would progress along the cable route within and in the immediate setting of the AONB, what construction consolidation sites and associated or other construction infrastructure and equipment would be present and how long after commencement all signs of active construction activity would be removed from the AONB. This information would complement the stated expectation that the landfall construction site and infrastructure for each scheme being present for twenty months.	
3	Natural England welcomes the assessment of cumulative impacts of the EA1N and EA2 OWFs with the construction and operational phases of Sizewell C nuclear power plant. In addition to the outlined mitigation to reinstate the landscape character and special qualities of the AONB post-construction, Natural England advises that all parties consider landscape enhancement/net gain opportunities within the AONB. We advise that there is an agreement put in place on how this could be achieved with the AONB partnership in consultation with Natural England and others.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix E - Seascape and Landscape Visual Impact Assessment (SLVIA) - 'Offshore' elements of the project	RAG Status Rel and WR Rep
<b>Comments on Visibility</b>		
1	At the s42 consultation Natural England's provided extensive advice on offshore visibility. These concerns have not been fully addressed.	
<b>Comments on night time effects</b>		
2	Natural England's pre application comments on the night time effects produced by the navigation lighting associated with the EA1N turbines have not been addressed. We request that these effects are assessed and the results used to inform the significance of effect judgement for both landscape and visual receptors.	
<b>Comments on the AONB Baseline</b>		
3	In relation to anticipated trends in the AONB baseline conditions Natural England fails to understand the relevance of the section within the ES in defining the existing landscape baseline against which the significance of this scheme will be judged.	

Point	Taken from Natural England’s Relevant and Written Representations EA1N Appendix E - Seascape and Landscape Visual Impact Assessment (SLVIA) - ‘Offshore’ elements of the project	RAG Status Rel and WR Rep
<b>Comments on Cumulative Effects</b>		
4	<p>cumulative effects of these two OWF projects.</p> <p>The EA1N and EA2 ES SLVIAs predict that significant cumulative effects for the following receptors;</p> <ul style="list-style-type: none"> <li>• LCTs: 05 (Area C), 06 (Area B) and 07 (Area A)</li> <li>• Viewpoints: 3, 4, 5, 6, 7, 8, 9, 11, 12 and 13</li> <li>• SCP Sections: 04, 05, 06 and 07</li> </ul> <p>Natural England agrees with these judgements and advises that significant cumulative effects are also likely for:</p> <ul style="list-style-type: none"> <li>• LCT 29 Covehithe Broad and Easton Broad</li> <li>• Viewpoint 10.</li> <li>• SCP Section 07.</li> </ul> <p>Although the contribution the EA1N project makes to these cumulative effects is small, Natural England advises that opportunities should be sought to reduce this contribution as far is possible within the design envelope of the OWF project. In particular the use of lower turbines (250m) for the EA1N OWF project would assist in reducing the cumulative effects predicted in both the EA2 and EA1N ES SLVIA. The possibility for this should be explored by the applicant in order that further embedded mitigation is introduced into the design of the EA1N OWF project which would help reduce the adverse cumulative effects predicted.</p> <p>We note at para. 24 p.7 that the ‘design envelope would allow a mixture of turbine sizes to be used in the final detailed design’ and suggest that the use of shorter turbines (250m) at the western edge of the EA1N development area is likely (based upon the apparent height measurements provided above) to assist in reducing the significant cumulative effects predicted in the EA2 and EA1N ES SLVIAs.</p>	



Point	Taken from Natural England’s Relevant and Written Representations EA1N Appendix E - Seascape and Landscape Visual Impact Assessment (SLVIA) - ‘Offshore’ elements of the project	RAG Status Rel and WR Rep
<b>Comments on Summary and Conclusions</b>		
5	Natural England agrees with the assessment of no significance effect for landscape and visual receptors within the AONB or its seascape setting. We also agree with the judgement that of no significant effects on the special qualities of the AONB and users of the Suffolk Coastal Path. Although we disagree with some of the reasoning set out in the Summary and Conclusions section of Chapter 28 we do not believe our advice on these is required.	
6	Unlike the EA2 OWF project the technology choice used to inform the worst case scenario, although the same, is not a critical issue due to the greater separation distance between the coast and development area. However we advise that opportunities do exist to reduce this contribution further through the use of shorter (250m) turbines.	

Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix F1 - All Other Matters	RAG Status Rel and WR Rep
Document used: 6.1.4 EA1N Environmental Statement Chapter 04 Site Selection and Assessment of Alternatives		
1	Although the decision to cross the Sandlings SPA at the narrowest section is welcomed, it should be noted the decision to HDD or trench through this section has yet to be determined. There is still the potential for impacts and disturbance to occur to species using the SPA despite this narrowest route.	
2	Natural England queries if the removal of a section of woodland been fully considered within the ES? Signposting to this would be useful. Has the applicant considered alternatives to not removing the woodland? Will the woodland be replaced?	
3	Although Natural England recognises the options of crossing the SPA, trenching or HDD, the Applicant needs to make it clear what the impacts will be if the EA2 and EA1N cable routes are put in sequentially rather than at the same time (see point 4 below). This applies to other scenarios such as Aldeburgh road woodland.	
Document used: 6.1.6 EA1N Environmental Statement Chapter 06 Project Description		
4	It is not clear whether the cable corridor area described is intended for both EA1N and EA2, i.e. will all cable installation for both projects take place within the same 32m wide corridor or will there be 2x 32m cable corridors, one for EA1N and one for EA2? If the cable routes for both EA1N and EA2 are installed within the same 32m wide corridor, will this occur sequentially or at the same time?	
Document used: 6.1.7 EA1N Environmental Statement Chapter 07 Marine Geology, Oceanography and Physical Processes		
5	Natural England advises that evidence needs to be presented to support statements that the maximum volumes of sediment released from sea bed preparation is five times greater than is likely to be released by scour? This currently seems quite arbitrary to base the assessment of scour during the operational phase on. Does this only apply to near-surface sediments as indicated by table 7.3?	
6	Much of the cable corridor sits within the Outer Thames Estuary SPA and there is the potential for disturbance to this species during any proposed works. Likewise, these subtidal sandbanks are key feeding areas for designated features such as red-throated diver. Therefore, for works including disposal within the sandbank areas there will need to be an assessment of the impacts against the conservation objectives for the site.	
7	Assuming some of the cable protection will be laid within the SPA boundary, has the Applicant considered the loss of supporting SPA habitat for the designated features? This will need to be considered across several thematic areas including offshore ornithology, sediment transportation and benthic.	

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8	It is clear from the ES that both project sites exhibit large areas of sandwaves and megaripples. This suggests to Natural England that a significant amount of sandwave clearance may be needed. If so, then it is essential that the applicant sufficiently considers the impact of disturbance and prey availability upon the interest features of the Outer Thames Estuary SPA, plus the potential loss of <i>Sabellaria spinulosa</i> reef such as <i>Sabellaria spinulosa</i> which should be avoided by micro-siting where possible.	
9	The ES indicates that a relatively large area of the export cable corridor is predominantly silt. Has this change in sediment been fed into the impact assessment to determine the impact of trenching cables within this area? A greater percentage of silt within the sediment will result in a more persistent suspended sediment concentration following disturbance.	
10	Is there any site specific evidence from the EA One construction of the actual sediment concentrations that were experienced during foundation installation?	
11	Clarification on why there is such a wide difference in the potential height of drill arisings mounds would be welcome. In addition the persistence of any mound/s would also need to be considered. If this is hard substrata then it would need to be potentially added to the in-combination assessment of any cable/scour protection; especially in relation to potential impacts to the conservation objectives for the Outer Thames SPA.	
12	Although the overall sediment release volumes would be low and confined to near the sea bed; it is not clear if there has been an assessment of the impacts at varying depths? This may apply more to the export cable installation further inshore.	
13	A relatively large area of the export cable corridor is predominantly silt. There seems to be no assessment of how this would affect the dispersion and settlement rate, particularly in nearshore shallow waters and any designated sites. Further information would be welcome.	
14	Natural England queries if there is an opportunity to microsite jack up vessels legs if habitats of conservation interest are found in the area during pre-construction surveys?	
15	Although the worst case scour volume of 50,000 m <sup>3</sup> is considerably less than the worst case volume of sediment released following sea bed preparation activities, this impact could be considered longer term as scour is likely to continue during the lifetime of the wind farm. It is not clear how this been considered and assessed by the applicant?	
16	The ES Table 7.32 concludes that the magnitude of effect on sea bed morphology due to the presence of foundations is high in the near field. Further expansion within this section on what this means for the receptors concerning this chapter would be useful. We understand the effect will be raised in other chapters, but it is hard to understand what this magnitude means for this particular topic.	
17	The Applicant identifies this impact (changes to the sea bed morphology due to the presence of foundation structures) as not having the potential for cumulative impacts, as the foundation structures affects a discrete area of seabed. However, in-combination with other windfarms and their associated foundation footprints could these discrete areas be combined to create a large overall impact?	

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18	Natural England queries what is this accepted threshold of 5 % and less for cumulative effect on baseline wave regime based upon? What are the predicted impacts of a greater than 2 % increase upon the sensitive receptors for marine geology, oceanography and physical processes?	
Document used: 6.1.9 EA1N Environmental Statement Chapter 09 Benthic Ecology		
19	Natural England wishes to highlight that the worst case scenario for benthic ecology should be related to the foundation type and not the blade tip height. We believe that this has been covered in the chapter so raises as a point to note to the examiner.	
20	Natural England highlights that the Rochdale envelope remains all-encompassing including the use of Gravity Based foundations that have not been used in English waters to date. Therefore, we would question why these have continued to be included in the Environmental Statement (ES). Especially as it unrealistically skews some of the assessments.	
21	Please be advised that there should be a commitment that is secured in one of the DCO/DML reference docs relating to the clearance of boulders should be away from habitat of conservation important.	
22	Natural England supports the undertaking of sandwave levelling if as stated it reduces the need for cable protection. However, we do recognise that sandwave levelling activities (including sediment disposal), is likely to have a significant effect (LSE) on the interest features of the Outer Thames Estuary SPA and will need to be considered against the conservation objectives for the site in an Appropriate Assessment.	
23	We also welcome the commitment to avoid sensitive receptors when undertaking sandwave levelling works, but where possible sand should be disposed in similar particle sized areas.	
24	It would be helpful if the Applicant could provide context from East Anglia ONE in relation to the amount and location of cable protection placed along the export cable.	
25	Natural England notes that the placement of new cable protection over the life time of the project is not included in the assessment. Is this because a separate marine licence will be applied for at the time?	
26	Please be advised that the assessment of cable protection is not consistent with Natural England recent draft advice position paper as provided for Boreas examination. Please see Appendix F2. Ideally drill arisings should be deposited in areas of scour protection against to turbines and/or similar habitats.	
27	Please be advised that mitigation in the form of micro-siting is not normally secured as part of the In Principle Monitoring Plan. Further consideration should be given to how best to do this.	
28	Natural England notes that no benthic ecology monitoring is proposed. However, this differs from what is outlined the In-Principal Monitoring Plan (Page 10, Table 2 within Section 1.6.4). Natural England agrees with the IPMP and advises that potential impacts to <i>Sabellaria spinulosa</i> reef areas will be required.	
29	Please be advised that all reef is reef no matter the quality and is therefore protected as such.	
30	Natural England notes that impacts to mapped sandbanks will be avoided. However, there remains an impact to 1,000,000m <sup>3</sup> of sediment, which is not small. It would therefore be useful know footprint/spatial extent to the impacts. However, at this stage we can advise that there would be a LSE which would require further consideration as part of an Appropriate Assessment.	

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31	Natural England notes that cable protection is proposed at the HDD exit point. Please be advised that there will need to be join up in relation to potential impacts to coastal processes and sediment transport.	
32	Natural England doesn't support the view that reef on artificial substrate is Annex I reef. Please see Appendix F3 for our advice on the Boreas offshore windfarm application. But it is recognised that as the works are not within a designated site there is no legislation under pinning this advice.	
Document used: 6.1.10 EA1N Environmental Statement Chapter 10 Fish and Shellfish Ecology		
33	Although larval abundances between 2007- 2017 have been relatively low as described by Figures 10.15 to 10.17, there is little mention of the nursery grounds in relation to Herring. Figure 10.14 indicates that the cable corridor in particular is a high intensity nursery ground. Natural England would welcome further consideration of how impacts to nursely grounds may effect prey availability for the interest features of the marine protected areas. Natural England also advises that the impacts of climate change, particularly the redistribution of species as a result, is considered within the assessments against the variety of species considered. Much of the spawning, nursery and larval abundance data ranges from 1998 to 2017.	
34	As raised in our Preliminary Environmental Information Report (PEIR) response, the reference used within this paragraph is very old, nearly 40 years. Is there any more recent evidence to show herring tolerance to elevated suspended sediment concentrations? Also what does Kiorboe et al. 1981 define as "short term" exposure?	
35	Is there any further site specific information to determine the likelihood of being in direct contact with sand eel habitat and linking this to the noise modelling impacts to have a greater understanding of the risk given to sand eels?	
36	Is there a reason why the applicant cannot commit to burying their cable to a minimum depth of 1.5m?	





Point	Taken from Natural England's Relevant and Written Representations EA1N Appendix G - Development Consent Order, Deemed Marine Licences and related certified documentation	RAG Status Rel and WR Rep
Document Used: 3.1 EA1N Draft Development Consent Order		
1	Natural England cannot agree to the definitions of "commence" and "offshore preparation works". As currently drafted the wording the work permits damaging works such as UXO detonation. The wording is also open to the inclusion of more activities than specified and thus could lead to works such as boulder removal, sandwave levelling, pre lay grapnel runs and a range of other potentially environmentally damaging works. These works could commence before the appropriate methodologies and documentation have been approved. As there would be no regulatory involvement it is not certain if pre construction surveys would be completed to sufficiently inform and agree micro siting requirements. Thus leading to an increased risk of impact to features of conservation value, such as biogenic reef. The words 'but not limited to' should be removed, as should reference to UXO detonation works.	
2	Natural England does not agree with the definition of "maintain". Specifically that works linked as ancillary works (listed in schedule 1 part 1) are part of maintenance. Works such as cable protection and scour protection deployment are construction activities which can have significant environmental impact. They should not be included within the definition of maintenance. Please see Natural England and the MMO positions on deployment of cable protection.	
3	Arbitration: Natural England does not consider that it is appropriate for post-consent sign-off of DML conditions to be subject to arbitration. Natural England suggests that this wording be amended to that which was used by the Secretary of State (SoS) while deciding on this issue in the Tilbury 2 application. Natural England also refers to the representations and submissions on arbitration submitted during the recent Hornsea 3, Vanguard and Thanet Extension applications.	
4	Many areas and volumes are given as m2 and m3, they should be m2 or m3	
5	<p>No volumes or areas of cable protection are provided. Given the potential for significant impact from these works they should be appropriately recoded here. However, it is noted these volumes and areas are recorded within the DMLs. However, the Environmental Statement (ES) project descriptions have separate areas of cable protection for the cable crossings. Clarification is needed to explain whether these volumes are recorded within the totals provided within the DMLs or if they are additional to the DML volumes. If additional then these additional volumes should be recorded in the DCO/DML appropriately to ensure the maximums are clearly stated and enforceable.</p> <p>No volumes or areas of disposal are provided here. Maximum amount of disposal should be provided and split into hard substrate (drill arisings) boulder relocation and soft sediments (sandwave levelling and ground preparation). However, it is noted the total volumes are recorded within the DMLs and split according to activity.</p> <p>This application and project description includes detonation of UXO. If these works are to be licenced and given the significant potential for impact the maximum number of detonations and the maximum size of detonation (size of UXO in kg) should be recorded. These factors should also be recorded in the DMLs to ensure no works outside of the scope of the ES details take place.</p>	
6	The relevant statutory nature conservation body should be named as a consultee on the updated Code of Construction Practice. This is to ensure the appropriate environmental considerations are provided within these documents.	

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7	The relevant statutory nature conservation body should be named as a consultee on the onshore decommissioning plan. This is to ensure appropriate ecological mitigation and considerations are made within the decommissioning works.	
8	This requirement makes it clear that onshore connection works built under one order can only be built on one order and not both. However, Natural England questions if this requirement adequately ensures that any ongoing monitoring or mitigation works for those areas are clearly secured. Natural England considers it logical that the party who constructed the works should hold responsibility for any required ongoing requirements.	
9	Definitions of “commence”, “offshore preparation works” and “maintain” are not acceptable, see points 1 and 2.	
10	<p>This condition requires a notification of completion of construction activities. Does this condition adequately ensure that no further construction activities can be undertaken under this DML?</p> <p>Natural England considers that this is a notification only. To ensure clarity on the end of the construction period and the start of the operation period and to appropriately trigger the post-construction conditions, Natural England considers that a separate condition may be needed to require the applicant to inform once all construction activities have completed and that no further construction works will be required under this licence.</p> <p>Recent projects have implied that as their DCO and DML has no requirement or condition ending construction they can complete construction activities throughout the lifetime of the project. Natural England does not consider this appropriate.</p>	
11	<p>Natural England notes the inclusion of these conditions to ensure removal of UXO can proceed without inclusion under commencement. However, these works also require consideration of potential benthic impacts, such as biogenic reef. The requirement to preform pre-construction surveys to inform micro-siting of cables must be included here to ensure appropriate mitigation. The current drafting has no timing requirements for submission. They need to be submitted a minimum of 6 months prior to the detonation of UXOs.</p> <p>However, Natural England considers this work to lead to significant duplication of effort for post-construction document approval. Therefore, Natural England advises inclusion of UXO within the definition of “commence” and the sign off of plans within the pre-construction conditions.</p> <p>Furthermore, Natural England considers that conditions should be added to DMLs ensure that:</p> <ul style="list-style-type: none"> <li>• Only 1 UXO is detonated across both EA2 and EA1N within a 24 hour period.</li> <li>• No piling will occur concurrent to the UXO detonation or within 24 hours of a detonation.</li> <li>• Only 1 piling event can occur across EA2 and EA1N within any 24 hour period.</li> <li>• A Co-operation Plan/Agreement will be required between EA1N and EA2 in the event that construction periods overlap.</li> </ul> <p>These are key mitigations proposed within the outline Site Integrity Plan (SIP) page 30 section 6.1 and should be appropriately secured through condition.</p>	

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12	The condition allows for changes to the cable protection if proposed following cable laying operations. However, there is no end date within the condition. Natural England's joint position with the MMO is that it is not appropriate for cable protection to be deployed throughout the operation and maintenance (O&M) phase of a project. This is due to the very large spatial and temporal scale of these licenced works, giving a Rochdale Envelope that is too undefined to appropriately assess. An end date should be included based on the proposals within the Natural England and MMO joint position statement. Any cable protection works after this end date should be licenced separately. It should also be noted that further surveys would be required to confirm the presence/absence of Sabellaria reef, such as is required prior to construction.	
13	Natural England considers that within these conditions the requirements to conduct ornithological monitoring (as outlined in the In Principle Monitoring Plan) should be secured.	
14	All issues raised under Schedule 13 also apply to Schedule 14 where similar conditions exist.	
15	Please see point 3 regarding Arbitration.	
Document Used: 8.12 EA1N Outline Offshore Operations and Maintenance Plans		
16	The definition of green items states that these items may go ahead and that no additional Marine Licences are needed, but that notification may be required. This is not entirely accurate, some of the items listed as green require resubmission of plans and documentation and further approvals from the MMO. Natural England suggests that the text is amended to reflect that some green items will require approval and not just notification.	
17	Cable burial using surface protection: Natural England assumes this refers to deployment of cable protection, although the table is not clear on this point. This is listed as green indicating that a further marine licence is not required. Natural England does not agree and considers this should be amber. Please see point 2 and the MMO and Natural England position statements on cable protection. This issue is replicated in the transmission section of the plan and both sections should be amended.	
18	Scour protection is listed within the table as green. Therefore, it may be deployed with no additional licence required. This should be changed to amber. Scour protection may be deployed up until the maximum assessed in the ES. Any additional protection above the amount assessed in the ES would need additional licences. Natural England advises that maximum amount allowed should be based on the maximum amount assessed in the ES for the individual foundation type. Not the total assessed volume of scour for the entire project and the document should be amended to reflect this. This issue is replicated in the transmission section of the plan and both sections should be amended.	
19	Natural England does not consider it appropriate to grant a licence to detonate UXO over such a long period of time as the lifetime of the project. This is especially relevant to projects located within the Southern North Sea Special Area Of Conservation (SAC) where detonation could have significant impacts and should be assessed based on updated information to show consideration of such things as in-combination impacts. Notwithstanding our arguments above, if it is decided that it is appropriate to include UXO detonation for the lifetime of the project, then Natural England notes that UXO detonations are listed as green. Natural England would advise that this should be listed as amber as the ES has assessed only a total of 80 detonations up to a maximum size of 700kg and therefore if more than 80 UXO's are found, or a UXO of size greater than 700kg, a new Marine Licence would be required. Additionally, consent will be required for disturbance of European Protected Species (EPS) for all instances and, therefore, it may be more appropriate to list this as red. However, in all instances the need for the EPS consent should be appropriately reflected in this document to ensure appropriate consent is sought within a reasonable time frame.	



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Document Used: 8.13 EA1N Offshore In Principle Monitoring Plan		
20	The proposed benthic monitoring only considers construction activities. The requirement for monitoring for O&M activities, which directly impact the seabed, should be included. This monitoring will be required in the form of geophysical and ground truthing (drop down video) surveys for any areas which have no monitoring and no construction activity within 2 years prior to the proposed O&M works. The post-construction structural/engineering surveys suggested in Table 1 could be used to inform any monitoring should they be in the appropriate location and within an appropriate timeframe.	
21	Natural England notes that we would like to engage with the applicant on the potential monitoring requirements for marine mammals and the potential for contribution to strategic monitoring. Following this discussion there may be a need to update this section to better reflect the monitoring that will be required.	
22	Natural England refers to our points 47 and 48 in Annex A Offshore Ornithology.	