

**Application by Orsted Hornsea Project Three (UK) Ltd for an Order granting Development Consent for the proposed Hornsea Project Three Offshore Wind Farm**

**The Examining Authority's Further Written Questions and Requests for Information**

**Issued on 19 December 2018**

The following table sets out the Examining Authority's (ExA's) Further Written Questions and Requests for Information.

Each question has a unique reference number which starts with Q2, as it is possible that there may be further written questions later in the Examination, then an issue number and a question number. For example, the first question on alternatives and design flexibility is numbered Q2.1.1. When you are answering a question, please start your answer by quoting the unique reference number.

Column 2 of the table indicates to which Interested Parties and Other Persons each question is directed. The ExA would be grateful if all persons named could answer all questions directed to them, either providing a substantive response or indicating why the question is not relevant to them. This does not prevent an answer being provided to a question by a person to whom it is not directed, should the question be relevant to their interests.

If you are responding to a small number of questions, answers in a letter will suffice. If you are answering a larger number of questions, it will assist the ExA if you use a table based on this one to set out your responses. An editable version of this table in Microsoft Word is available on request from the Planning Inspectorate's Project case team: please contact [HornseaProjectThree@pins.gsi.gov.uk](mailto:HornseaProjectThree@pins.gsi.gov.uk)

Responses are due by **15 January 2019**. Please note that if this deadline is missed the ExA is not obliged to take account of your response.

### Abbreviations Used

BDC	Broadland District Council
CfD	Contract for difference
CEA	Cumulative effects assessment
CRM	Collision risk modelling
cSAC	Candidate Special Area of Conservation
dDCO	Draft Development Consent Order
DML	Deemed Marine Licence
ECR	Export cable route
EIFCA	Eastern Inshore Fisheries and Conservation Authority
EMF	Electromagnetic field
EPS	European protected species
ES	Environmental Statement
ExA	Examining Authority
HAT	Highest astronomical tide
HDD	Horizontal directional drilling
Hist E	Historic England
HGV	Heavy goods vehicle
HRA	Habitat Regulations Assessment
HVAC	High voltage alternating current
HVDC	High voltage direct current
ISH	Issue Specific Hearing
LAT	Lowest astronomical tide
MCAA	Marine and Coastal Access Act
MCA	Maritime and Coastguard Agency
MDS	Maximum design scenario

MMO	Marine Management Organisation
MPA	Marine protected Areas
NAF	Nocturnal activity factor
ONCC	Norfolk County Council
NE	Natural England
Neptune	Neptune E&P UK Limited
NGET	National Grid Electricity Transmission
nm	Nautical mile
NNDC	North Norfolk District Council
NPA	Neighbourhood Planning Act
NPS	National Policy Statement
NT	National Trust
OWF	Offshore Wind Farm
pMCZ	Proposed Marine Conservation Zone
PRoW	Public right of way
pSPA	Proposed Special Protection Area
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAR	Search and rescue
SNC	South Norfolk Council
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
Spirit Energy	Spirit Energy Nederland BV; Spirit Energy North Sea Limited; Spirit Energy Resources Limited
SSSI	Site of Special Scientific Interest
TWT	The Wildlife Trusts
UXO	Unexploded ordnance
VER	Valued ecological receptor
WCS	Worst case scenario



WTG	Wind turbine generator
ZVI	Zone of visual influence

## The Examination Library

References in these questions set out in square brackets (eg [APP-010]) are to documents catalogued in the Examination Library. The Examination Library can be accessed via the following link:

<https://infrastructure.planninginspectorate.gov.uk/projects/eastern/hornsea-project-three-offshore-wind-farm/?ipcsection=docs>

It will be updated as the Examination progresses.

1. Alternatives and design flexibility		
Ref:	Question to	Question
Q2.1.1	Applicant	<p>At Issue Specific Hearing 1 (ISH1) the Applicant referred (in general terms) to challenges and delays in the delivery of high voltage direct current (HVDC) transmission systems serving offshore wind farms (OWF) in Germany.</p> <p>Please provide further details of the reasons for these challenges and/or delays (to the extent that this information is in the public domain).</p> <p>Insofar as these challenges and/or delays resulted from a lack of experience of delivering such transmission systems, would the experience gained from those projects inform future projects, thereby reducing the risks of delay?</p>
Q2.1.2	Applicant	<p>At ISH1 the Examining Authority (ExA) asked about the difference of approach (in relation to transmission systems) as between the Applicant and the promoters of Norfolk Vanguard OWF who have committed to HVDC. It is appreciated that the Applicant cannot speak on behalf of Norfolk Vanguard and that other comparator projects may be relevant. Nevertheless, Norfolk Vanguard is</p>



		<p>being promoted at the same time, in a broadly similar location and is of comparable scale.</p> <p>Please identify any factors that might explain the difference of approach between the Applicant and the promoters of Norfolk Vanguard OWF in relation to the ability to commit to a specific transmission system.</p>
Q2.1.3	Applicant	<p>At ISH1 the Applicant explained that (if the works were phased) ducting for the phase 2 onshore cables would be installed as part of the phase 1 works provided that a final investment decision covering phase 2 had been made at that time. The Applicant's rationale for this approach was that the scale of phase 2 and the design of the transmission system might still be unknown.</p> <p>Having chosen either high voltage alternating current (HVAC) or HVDC for phase 1, would not that decision weigh strongly in favour of using the same system in phase 2, in the interests of providing a consistent scheme design which would (presumably) benefit the ultimate owner of the transmission system?</p> <p>Please provide a schematic drawing of HVAC and HVDC cables within ducting, indicating the size of the components likely to be used.</p> <p>Having regard to the likely range of cable circuits that might be required, what effect would this have on the size and design of the ducting?</p> <p>To the extent that pre-ducting could result in some over-engineering of the phase 2 ducting, what evidence is there that this would be a significant factor (in relation to cost and/or environmental impacts) having regard to the cost savings and reductions in environmental impacts that would result from carrying out excavation and ducting works for the entire project during phase 1?</p>
Q2.1.4	Applicant	<p>The Norfolk Vanguard project proposes to include ducts to house the Norfolk Boreas cables along the entirety of the onshore cable route from the landward side of the transition pit at the landfall to the onshore project substation [REP1-222]. Presumably the Norfolk Boreas project is currently</p>



		<p>at an earlier stage of design development than Hornsea Project Three would be when a final investment decision is made in respect of phase 1.</p> <p>How is it possible for Norfolk Vanguard to install cable ducts for Norfolk Boreas when Hornsea Project Three (phase 1) is unable to commit to installing cable ducts for Hornsea Project Three (phase 2)?</p>
Q2.1.5	Applicant	<p>The cable route cross section at Appendix 2 to your Deadline 3 submissions [REP3-011] indicates a total corridor width of 68m, of which 28m would be required temporarily. The corridor includes 4m wide strips between the outer edge of the cable trenches and the inner edge of the soil storage areas on either side. Figure 3.32 in the ES [APP- 058] does not appear to show similar strips.</p> <p>Why does the Appendix 2 section include these 4m strips?</p>
Q2.1.6	Applicant	<p>The Vattenfall and Orsted Circuit Crossing - EMF Information [appended to REP1-222] states that if different technologies were used (HVAC and HVDC) the magnetic fields would not interact with one another. Accordingly the document does not consider the scenario of HVAC cables crossing HVDC cables. Nevertheless, at the Open Floor Hearing on 3 December 2018, Mr Pearce commented that HVAC cables would induce currents in HVDC cables.</p> <p>Please provide further information on any electrical effects that would result from a scenario with HVAC cables crossing HVDC cables.</p> <p>Would there be any significant effects on people or the environment?</p> <p>In this scenario, would any effects vary depending on which system was above the other?</p> <p>What is the maximum burial depth likely to be required to achieve an adequate separation between the two sets of cables?</p>



Q2.1.7	Applicant	<p>The design flexibility sought by the Applicant, in respect of phasing and the choice of transmission systems, would have implications for the amount of land required and/or the times at which land would be used. The Applicant seeks to mitigate the impact of uncertainty on landowners through the communication plan framework set out in appendix A to the outline code of construction practice [REP1-142].</p> <p>Given the amount of land involved and the timescale for the implementation of the project, is a code of practice sufficient to mitigate the effect of uncertainty on landowners?</p> <p>Alternatively, would it be appropriate to secure a commitment to providing timely information on the choice of transmission system and the approach to phasing and land take within the Order itself?</p> <p>The communication plan framework states that the first newsletter would be issued at least four months prior to the commencement of works. Is it envisaged that the proposed phasing and timing of the project, the choice of transmission system, the amount of land required and the period of the construction works would be communicated at that time?</p>
Q2.1.8	Applicant, NFU	<p>Requirement 6 (phases of the authorised development) requires a phasing scheme to be approved before commencement. One way of ensuring that there is early awareness of the approach to phasing might be to require that the phasing scheme is approved no later than a specified period before commencement.</p> <p>What would be the advantages and disadvantages of such an approach?</p> <p>What would be an appropriate period to specify?</p>
Q2.1.9	Applicant	<p>Requirement 6 (phases of the authorised development) requires a phasing scheme to be approved before commencement. The NFU submission for Deadline 3 [REP3-105] suggests that it should be clear within Requirement 6 that there should be no more than two main phases of construction.</p>





		<p>This would be to ensure consistency with the ES which assessed the proposals on this basis.</p> <p>Does the applicant have an objection in principle to this approach?</p> <p>Would it be possible to draft the requirement in a way which allowed some flexibility, for example if there were a need for a staged approach within the main phases of construction?</p>
Q2.1.10	Applicant	<p>If the project is implemented in phases, the full corridor width of 80m may not be required in phase 1 (unless pre-ducting were taking place). Presumably the phase 1 cables would need to be laid on one side of the 80m corridor in order to leave space for the phase 2 cables.</p> <p>Would it be practical for the Applicant to identify land that would not be required until phase 2 as part of the phasing plan approved under Requirement 6?</p>
Q2.1.11	Applicant, Norfolk County Council (NCC), North Norfolk District Council (NNDC)	<p>In NNDC's submission for Deadline 3 [REP3-103] a requirement is suggested to the effect that the method of electrical transmission within each phase of the authorised development shall be via HVDC unless there are clear and compelling technological reasons as to why HVDC transmission cannot be provided.</p> <p>Please can NNDC clarify whether it is proposing a decision making role under this requirement or the provision of information about a choice that has been made by the developer.</p> <p>If NNDC is seeking a decision making role, given the linear nature of the project how would NNDC intend to cooperate with other affected local planning authorities?</p> <p>Given the linear nature of the project it appears that the appropriate determining body may be NCC. What is NCC's view on taking on such a role?</p> <p>If the Secretary of State finds that the degree of design flexibility sought by the Applicant is justified, would it then be reasonable to impose a second tier of in-principle decision making in</p>

		<p>relation to a major element of the Nationally Significant Infrastructure Project under the terms of a requirement?</p> <p>It appears to the ExA that the underlying concern being expressed by NNDC may be that there should be a clear and transparent explanation and justification for the ultimate choice of transmission system. If the Secretary of State were to conclude that this is a legitimate concern, does the Applicant have any alternative suggestions as to how to address this matter?</p>
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2. Ecology – Offshore		
Ref:	Question to	Questions
		<b>Ornithology</b>
Q2.2.1	Applicant, Natural England (NE)	<p>Please produce a draft Statement of Common Ground (SoCG) for ornithology at Deadline 6 that includes but is not limited to the following headings:</p> <ul style="list-style-type: none"> <li>Baseline Characterisation</li> <li>Collision Risk Model <ul style="list-style-type: none"> <li>Band Model Options</li> <li>Maximum Likelihood Estimates</li> <li>Nocturnal Activity Factors</li> <li>Avoidance Rates</li> <li>Flight Height Estimation</li> <li>Flight Speed Estimation</li> </ul> </li> <li>Biological Seasons</li> <li>Migratory Species</li> <li>Predicted Displacement Mortality</li> <li>Likely Significant Effects In Combination Screening</li> <li>Population Viability Assessment</li> </ul>

		<p>Impact Apportioning</p> <p>Where you cannot reach agreement you should state that your position is final and will not be resolved.</p>
Q2.2.2	NE, Royal Society for the Protection of Birds (RSPB)	Notwithstanding the use of two out of four cameras, do you agree that the digital aerial survey data forms an adequate ornithological baseline for the months where data were collected over two separate years?
Q2.2.3	Applicant	<p>The HiDef contractor methodology indicated that a 10% coverage (using two cameras) is generally sufficient for achieving a coefficient of variation of 16% or better for abundance estimates. In evidence submitted at Deadline 3, NE has highlighted that the coefficient of variation is greater than 16% for most months and for most species.</p> <p>You highlighted in ISH2 that 10% coverage had been sufficient in other projects. What evidence do you have that the coefficient of variation was actually 16% or less in aerial surveys for those other projects to justify the use of two cameras instead of four?</p> <p>Are there any reasons, other than cost, that led you to analyse 50% of the data?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.4	NE	<p>It was highlighted at ISH2 that you have assessed the likely significant impact of other offshore wind farm (OWF) projects with less than two years baseline data.</p> <p>How were you able to advise on potential adverse effects on European sites under these circumstances?</p> <p>If you were able to do this for previous projects why are you unable to provide the necessary</p>

		advice in this instance?
Q2.2.5	RSPB	<p>In the draft SoCG [REP2-012] submitted at Deadline 2 you have highlighted that the baseline survey remains inadequate despite the results of baseline sensitivity testing [REP1-141].</p> <p>Is there anything else that can be done to improve the robustness of the baseline or is your position final on this matter bearing in mind any subsequent evidence that has been submitted?</p>
Q2.2.6	RSPB, NE	<p>The Data Hierarchy Report [APP-110] indicates that more limited variation in bird density was observed between December and March.</p> <p>Is it reasonable to assume that missing data for this period would have less impact on the confidence in the modelling than missing data from other months?</p> <p>As the principal ornithological issue relates to the effect of the project on the breeding bird assemblage at the Flamborough and Filey Coast Special Protection Area (SPA), why does it matter if there is missing data between December and March?</p> <p>In practical terms, how is the additional information you are seeking likely to alter the conclusions of the Environmental Statement (ES) and Habitat Regulations Assessment (HRA)?</p>
Q2.2.7	Applicant	<p>If the Secretary of State were to conclude that there may be an adverse effect on the integrity of the Flamborough and Filey Coast SPA, either alone or in combination, then what alternative solutions and compensatory measures have you considered?</p> <p>Please set out your case for Imperative Reasons of Overriding Public Interest.</p>
Q2.2.8	NE	<p>Given your stated position in relation to the baseline characterisation and the fact that you are unable to conclude beyond reasonable scientific doubt that the integrity of European sites would not be affected by the proposal, please suggest any feasible compensation measures that would</p>

		be needed for Flamborough and Filey Coast SPA.
Q2.2.9	Applicant	<p>In ISH2 it was established that it would assist the examination if the Collision Risk Model (CRM) is run in strict accordance with the recommended Statutory Nature Conservation Body (SNCB) parameters using only the Digital Aerial Survey data (DAS).</p> <p>Please run the model according to the parameters advised by NE using the mean, upper and lower confidence intervals as derived from the DAS. Please provide comparative tables that show the requested outputs alongside the outputs that have been used to inform the ES and RIAA.</p>
Q2.2.10	Applicant	<p>In your Deadline 3 comments [REP3-002] you stated that it is widely accepted that most parameters used for collision risk modelling have been conservatively estimated and overestimate the collision risk calculated by CRM.</p> <p>Please provide any independent documentary evidence that supports this view.</p>
Q2.2.11	Applicant	<p>In its Deadline 3 submission [REP3-075], NE pointed out that the estimates of parameters such as flight speed and height presented in Skov et al (2018) come from a single site during the non-breeding season (Thanet Offshore Windfarm). It also highlights an issue with the avoidance rates relating to the incorporation of model error.</p> <p>Given the influence of site-specific factors on estimated collision rates, how can the conclusions of this paper be applied to other sites or to the breeding season in a robust manner?</p>
Q2.2.12	NE	<p>In your Deadline 3 submission [REP3-075], you highlighted flight speeds that are not in accordance with Skov et al (2018), Alerstam et al (2007) and Pennycuick (1997). You go on to state that the flight heights were markedly higher in Johnston et al. (2014).</p> <p>Please provide copies of these papers if you wish to rely upon them as evidence.</p>

Q2.2.13	Applicant	<p>Whilst you weighed Alerstam et al (2007) and Pennycuick et al (1987) against the empirical evidence in Skov et al (2018) in your Deadline 3 submission [REP3-002], NE have also highlighted Pennycuick (1997) and Johnston et al (2014).</p> <p>Do you still maintain that Skov et al (2018) offers, on balance, the best available evidence for CRM parameterisation?</p> <p>Please provide a copy of Pennycuick et al (1987) if you wish to rely upon it as evidence.</p>
Q2.2.14	RSPB, NE	<p>The Applicant has advised that the nocturnal activity factors (NAF) historically used for collision risk modelling are not taken directly from Garthe and Hüppop (2004) but are instead based on an incorrect representation of the scores by Band (2012). The Applicant goes on to state that Band (2012) recommends that empirical data should be used when available, as has been the case for gannet and kittiwake.</p> <p>Please comment on these views and the empirical robustness of the studies that were used to justify the use of different NAF by the Applicant, as set out in [REP1-188].</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.15	RSPB	<p>The Applicant has stated [REP1-122] that Marine Scotland has previously noted that your position appears to conflate nocturnal activity with colony attendance, foraging activity and timing of at-sea surveys and lacks an adequate empirical basis.</p> <p>How do you respond?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>

Q2.2.16	RSPB	<p>The Applicant has stated in [REP1-122] that peaks in abundance that may occur at first light should not be accounted for by increasing the NAF which is used in the CRM to calculate the collision risk at night. The Applicant notes that the nocturnal activity rate used represents the activity expected as a proportion of daylight activity and, as such, the application of a nocturnal activity factor does not require consideration of peaks in activity that may occur at first light as the amount of nocturnal activity is the same regardless of the activity that occurs in daylight hours.</p> <p>How do you respond?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.17	NE, Applicant	<p>In ISH2, NE highlighted the fact that tagging studies show different activity levels during the day.</p> <p>Please can NE provide copies of the relevant publications and a table that summarises daytime activity levels for all the species for which you have identified a likely significant effect.</p> <p>Please can the Applicant provide information on when the DAS was undertaken that includes the transect start and finish times.</p>
Q2.2.18	RSPB, NE	<p>Cook et al (2018) recommends avoidance rates for kittiwake and lesser black-backed gull that are different to those proposed by JNCC et al (2014) and the RSPB.</p> <p>Please comment on the results of the additional modelling, its empirical basis and the implications for the ES and HRA as set out by the Applicant in Appendix 10 at Deadline 1[REP1-188].</p>
Q2.2.19	RSPB	<p>The Applicant has stated [REP1-122] that no colony specific data from Flamborough and Filey Coast SPA were made available and that it is, in any event, irrelevant to the seasons in the array area.</p>

		<p>Bearing in mind the typical foraging distances of breeding birds from this colony, why are the colony specific seasons relevant to what happens 150km away in the array area?</p> <p>How many breeding individuals have been tracked and shown to be entering the array area each year?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.20	Applicant	<p>Figure 4 in Cleasby et al (2018) [REP1-144] seems to suggest that the array area is in a SPA colony hotspot when two different geostatistical analyses were applied. You stated at ISH2 that the paper indicated low usage.</p> <p>Could you clarify this seemingly contradictory evidence?</p> <p>Does the analysis weigh in favour of using colony specific data for kittiwake?</p>
Q2.2.21	RSPB	<p>How many kittiwakes were tracked in Cleasby et al (2018) [REP1-144] to give the hotspot results in section 3.1?</p> <p>What proportion originated from the Flamborough and Filey Coast SPA?</p>
Q2.2.22	RSPB	<p>In [REP2-025] you note that kittiwake productivity has been in decline at the Flamborough and Filey Coast SPA since 2009 as set out in Aitken et al (2018).</p> <p>Please provide a copy of this publication if you wish to rely upon it as evidence.</p>
Q2.2.23	RSPB	<p>During ISH2 there was some discussion concerning the evidence underpinning the differences of opinion over how breeding seasons were defined. NE suggested that it had relied on an internal RSPB report.</p>



		Please confirm the details with NE and submit the report as evidence at Deadline 4.
Q2.2.24	Applicant	<p>NE notes [REP1-211] that colony observations of kittiwake, gannet and puffin at Flamborough and Filey Coast SPA are 'closely aligned' to the breeding seasons described in Furness (2015). You have chosen to use offshore observations that define a shorter breeding season which has reduced the predicted collision impacts. It has been pointed out that lower apportioning rates were assigned for the months when breeding birds may have been present in the array area.</p> <p>For example, gannet apportioning for the SPA is: 40.4% (breeding season), 4.8% (post-breeding) and 6.2% (pre-breeding). The breeding season used in the modelling was defined as being April-August. Colony attendance data showed that this was actually March-September. Consequently, the apportioning and resultant impact of the proposal in March and September would appear to be significantly underestimated. The result is that only 6.2% of the population would be potentially affected in March and 4.8% in September. It follows that collision risk would increase by 34.2% in March and 35.6% in September if colony attendance data and/or Furness (2015) were used to define the breeding season for this species.</p> <p>Leaving aside your stated position that colony specific data is not relevant to the biological seasons in the array area, why would the approach you have taken not lead to significantly lower apportioning rates and thus a reduced collision risk?</p>
Q2.2.25	Applicant	Please comment on the email correspondence in Appendix 3 of the NE Deadline 3 submission [REP3-075] regarding colony specific breeding seasons.
Q2.2.26	RSPB	<p>You did not answer question Q1.2.69 about how predicted displacement mortality should be evaluated against background displacement mortality. The Applicant is of the view that you approved this approach in the Evidence Plan Meeting.</p> <p>Have you departed from your original views?</p>

		<p>If so, what has changed?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.27	RSPB	<p>You have stated that support vessels for servicing the turbines during the operational phase may cause displacement of divers and that a distance of 4km should be considered as the minimum distance within which impacts during this phase should have been considered. You cite a paper by Mendel et al (unpublished) in support of this view.</p> <p>As there are no loons off the north Norfolk coast you appear to be making a generalisation between this species and the red throated diver. What evidence do you have to suggest that their ethology and mortality risk are the same in all respects?</p> <p>Given that this is unpublished work that cannot be submitted to the examination library how can the ExA give it any weight?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.28	RSPB	<p>You state that the correct manner in which to deal with uncertainties is through a properly quantified precautionary approach and not the qualitative approach taken by the Applicant [REP1-111]. The Applicant has set out the detail of the assessment from 5.9.2.24 in the ES [APP-065].</p> <p>How should the quantitative approach you advocate be carried out?</p> <p>Why is the assessment set out in the ES [APP-065] not adequate?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already</p>

		been provided.
Q2.2.29	RSPB	<p>The Applicant has provided additional population viability assessment modelling outputs in [REP1-135].</p> <p>Has the model re-run addressed your concerns?</p> <p>If not, in your view, what is needed to be able to evaluate potential impacts?</p>
Q2.2.30	Applicant	<p>NE has provided a response to your population viability assessment in Appendix 2 of its Deadline 3 submission [REP3-075].</p> <p>Please comment on the points raised.</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been supplied.</p>
Q2.2.31	RSPB	<p>You stated that you did not agree with the “evidence based displacement rates” for the array area but have not suggested any alternative values, as requested in question Q1.2.70.</p> <p>Is there any empirical evidence which suggests that the use of different values would be more robust?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.32	RSPB	<p>You stated that the apportioning of impacts on kittiwake to the Flamborough and Filey Coast SPA was scientifically unjustified [REP1-111]. The Applicant has requested that you provide any information to the contrary to support a different apportioning rate.</p>

		<p>Is there any empirical evidence to the contrary to suggest the use of different values would be more robust?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.33	Applicant	<p>NE requested age class data [REP1-211] but digital aerial survey age class data for puffin, kittiwake, gannet, razorbill and guillemot and boat based survey age class data for guillemot and razorbill is yet to be provided.</p> <p>Please provide this information.</p>
Q2.2.34	Applicant	<p>Article 6(3) of the Habitats Directive states that likely significant effects should be considered “either individually <b>or</b> in combination with other plans or projects”. Regulation 63(1)(a) of the Habitats Regulations states that they should be considered “either alone <b>or</b> in combination with other plans or projects”. Whilst it is possible to undertake one without the other, NE has pointed out that you have precluded in combination effects for species where likely significant effects have been discounted on an individual basis, i.e. alone.</p> <p>Given that the underlying intention of the in combination provision is to take account of cumulative effects when individual effects may not be present, please clarify your reasoning as to why there would not be in combination effects on tern species associated with the North Norfolk Coast SPA and Greater Wash SPA as well as non-breeding auk species associated with the Farne Islands SPA, Croquet Island SPA and Forth Islands SPA.</p>
Q2.2.35	Applicant	<p>NE highlighted concerns in [REP3-075] regarding the cumulative, in combination collision risk assessments as presented in [REP1-148].</p> <p>Please respond to the matters raised and provide additional information as requested.</p>

Q2.2.36	NE	<p>In [REP3-075] you stated that no clear audit trail is present showing how the figures presented in [REP1-148] were derived.</p> <p>Could you confirm if the type of information you are requesting here has been made available for the cumulative/in combination assessments for previous offshore wind farm projects?</p>
Q2.2.37	Applicant	<p>The revised CEA, as set out in [REP1-005], is noted but this does not include cumulative impacts on herring gull or the revised CRM analysis as set out in a preceding question.</p> <p>Please use the outputs from the revised CRM analysis that you will be undertaking to produce a revised CEA that includes herring gull impacts.</p>
Q2.2.38	Applicant	<p>NE has highlighted a number of issues relating to Trinder 2017 in its submission at Deadline 3 [REP3-075].</p> <p>Please comment on the matters raised.</p>
Q2.2.39	Applicant	<p>In its submission at Deadline 3 [REP3-075], NE notes that Rate Set 2 will relate to Flamborough/ Bempton productivity for 2009-2014 and that there will be more up to date productivity data available which may be more appropriate to use for colony population viability assessment. NE highlights the fact that you have applied the original model because you have assumed that none of the key model parameters have changed.</p> <p>Please explain why you have not used the most recent demographic rates in this model.</p> <p>Why you have not accepted that the model should be re-run in your Deadline 3 response to the RSPB comments?</p>
Q2.2.40	Applicant	<p>Please provide the following publications that you have relied upon in evidence:</p>

		<p>Efron and Tibshirani (1993) [REP1-122]  Furness (2015) [APP-065]  Cook et al (2014) [APP-065]  Dierschke and Garthe (2006) [APP-065]  Garthe and Hüppop (2004) [APP-065]  Lawson et al (2015) [APP-065]  Masden (2015) [APP-065]  Wade et al (2016) [REP2-005]  Desholm (2005) [APP-065]  Welcker et al (2017) [APP-065]  Cook, A. S., Humphreys, E. M., Bennet, F., Masden, E. A., &amp; Burton, N. H. (2018) [REP1-111]</p>
Q2.2.41	RSPB	<p>Please provide the following publications that you have relied upon in evidence:</p> <p>Cook and Robinson (2017) [REP2-025]  Jithal et al (2017) [REP2-025]  Green et al (2016) [REP2-025]  Masden &amp; Cook (2016) [REP2-025]  Ferrer et al (2012) [REP2-025]  de Lucas et al (2008) [REP2-025]  Horswill and Robinson (2015) [REP1-111]</p>
<b><i>Benthic Ecology</i></b>		
Q2.2.42	Applicant, NE	<p>Please produce a draft Statement of Common Ground for benthic ecology at Deadline 6 that includes but is not limited to the following headings:</p> <p>Baseline Characterisation  Biotope Classification  Sandwave Levelling  Cable Burial and Protection</p>

		<p>Micro-Siting Potential Biogenic and Geogenic Reefs Markham's Triangle pMCZ</p> <p>Where you cannot reach agreement you should state that your position is final and will not be resolved.</p>
Q2.2.43	NE	<p>The tables you submitted at Deadline 3 [REP3-076] contain hyperlinks to information on SAC sub-features that are not accessible to the ExA.</p> <p>Please provide updated tables showing the definitive list of sub-features in plain text.</p>
Q2.2.44	Applicant	<p>If the Secretary of State were to conclude that there may be an adverse effect on the integrity of the North Norfolk Sandbanks and Saturn Reef SAC and/or The Wash and North Norfolk Coast SAC, either alone or in combination, then what alternative solutions and compensatory measures have you considered?</p> <p>Please set out your case for Imperative Reasons of Overriding Public Interest.</p>
Q2.2.45	NE	<p>Given your stated position in relation to the baseline characterisation and the fact that you are unable to conclude beyond reasonable scientific doubt that the integrity of European sites would not be affected by the proposal, please suggest any feasible compensation measures that would be needed for the North Norfolk Sandbanks and Saturn Reef SAC and The Wash and North Norfolk Coast SAC.</p>
Q2.2.46	Applicant	<p>If the Secretary of State were to conclude that the proposal would lead to a significant risk of hindering the conservation objectives of the Cromer Shoal Chalk Beds MCZ or Markham's Triangle pMCZ what other means are there for proceeding within the project design envelop that would create a substantially lower risk to these sites?</p>



		<p>Please consider how you might proceed in another manner or at a different location.</p> <p>Please set out how you would undertake or make arrangements for delivering measures of equivalent environmental benefit to the harm that could be caused.</p>
Q2.2.47	NE, MMO	<p>If the Secretary of State were to conclude that there may be harm to the Cromer Shoal Chalk Beds MCZ and/or the Markham's Triangle pMCZ, what measures of equivalent environmental benefit to the harm that might be caused could be provided?</p>
Q2.2.48	NE	<p>You questioned the conclusions of the MCZ assessment for the Cromer Shoal Chalk Beds in [REP1-125] and believe there is sufficient uncertainty to have limited confidence in the Stage 1 conclusion that there would be no significant risk to delivering the site conservation objectives. The Applicant maintains in [REP2-004] that a Stage 2 assessment is not required due to the "very small proportion of designated features affected". The Applicant also highlights the fact that the majority of impacts would be temporary and reversible and that longer lasting effects would affect a very small (i.e. &lt;0.02%) proportion of the Subtidal Sand feature of the MCZ and only where cable protection is required.</p> <p>What are your views on these matters?</p>
Q2.2.49	Applicant	<p>NE states in [REP1-216] that the additional information you provided in relation to the impact of hard substrates did not relate directly to the three Marine Protected Areas (MPA) that may be affected by the proposal.</p> <p>Are the sediment composition and dynamics of Inner Dowsing North Ridge and Race Bank the same in all respects?</p> <p>Are the hydrodynamics sufficiently similar to other sites for your infill and sediment transport arguments to hold true?</p>



Q2.2.50	NE, MMO	<p>Paragraph 2.87 of [REP2-004] states that a Cable Burial Risk Assessment would be produced post consent and paragraph 2.88 goes on to state that this would be secured as part of the Cable Burial Plan through Schedule 11, Condition 13(1)(h) (generation assets DML) and Schedule 12, Condition 14(1)(h) (transmission assets DML) of the dDCO. You highlighted the lack of adequate sampling along the inshore cable corridor re-route in relation to MPAs in ISH2 and the need for an early Cable Burial Risk Assessment to avoid problems that have arisen elsewhere.</p> <p>Please elaborate on the problems that have occurred elsewhere.</p> <p>What practical steps could be taken to avoid such problems in this project?</p> <p>How could adequate mitigation be secured through the dDCO?</p>
Q2.2.51	The Wildlife Trusts (TWT)	<p>Your representation [RR-047] states that more realistic expectations of cable burial and protection within The Wash and North Norfolk Coast SAC are required.</p> <p>Does the information submitted by the Applicant at Deadline 1 [REP1-138] and Deadline 2 [REP2-004] give you the clarity you are seeking on the potential effect of cable burial on the SAC?</p>
Q2.2.52	Applicant	<p>In relation to Race Bank OWF please confirm how much of the reburial works and proposed cable protection is within MPAs.</p> <p>What is the nature and extent of the designated features that will be affected?</p> <p>Please confirm how much of the 6% protection lies within the MPAs.</p>
Q2.2.53	Applicant	<p>Following questions raised by NE [RR-097] in response to the maximum design scenario for cable protection, you stated in [REP1-122] that you were reconsidering the precautionary assumption that 25% cable protection replenishment would be required in the project design envelope. REP2-</p>

		<p>004 does not conclude on this point.</p> <p>What was the outcome of the reconsideration?</p> <p>What evidence do you have to support your assertions regarding replenishment rates?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.54	Applicant	<p>You have provided an overview of your position with respect to <i>Sabellaria</i> reefs and the applicability of the 'core reef approach' in [REP2-004] and are satisfied that micro-siting would provide adequate mitigation.</p> <p>In the light of figure 2 of [REP1-217] do you still maintain that there is adequate room within the cable export corridor to allow micro-siting?</p>
Q2.2.55	Applicant	<p>You agree in [REP1-122] that pre-construction surveys should be scheduled within an appropriate timeframe to ensure they are fit for purpose, to allow for direct impacts on Annex I reefs to be avoided.</p> <p>How would this mitigation be secured in the dDCO if construction occurs in two phases?</p>
Q2.2.56	NE	<p>Paragraph 5.4.11 of your representation [RR-097] stated that the benthic analyses were not appropriate for characterising the Markham's Triangle pMCZ. The Applicant concluded in [REP1-122] that only minor differences in the biotope classifications exist between those mapped in Sotheran et al. (2017) and the ES.</p> <p>Are you satisfied with the Applicant's response to this issue, as set out in [REP1-122], [REP1-131] and [REP3-023]? If not, why not?</p>

		Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.
Q2.2.57	Applicant	Please provide a copy Sotheran et al. (2017) if you wish to rely upon it as evidence.
Q2.2.58	NE	<p>You representation [RR-097] states that the features of the Markham’s Triangle pMCZ should be assessed separately rather than by using one feature as a proxy. The Applicant has since presented habitat loss numbers in tabular format, as set out in [REP2-004] and a supplementary assessment in [REP3-023].</p> <p>Does this enable you to reach a conclusion on the assessment that has been undertaken?</p> <p>In your view, are there any outstanding matters regarding the Marine Conservation Zone Assessment [APP-104]?</p>
Q2.2.59	NE	<p>Paragraph 4.4.5 of your representation [RR-097] stated that the consideration of each phase in isolation failed to consider cumulative impacts over time. The Applicant has concluded in [REP2-005] that a phased build would not affect recoverability of the relevant features as it would not result in repeat physical disturbance of the same area of seabed across different phases, due to the risk this would pose to the integrity of installed export cables. It is said that the operation and maintenance activities would be highly localised and intermittent.</p> <p>Can you list which impacts are most likely to have a residual effect between each phase, the species and sites affected and your degree of certainty?</p> <p>Are you suggesting that the Applicant has failed to meet the requirements of paragraph 2.6.64 of National Policy Statement (NPS) EN-3?</p> <p>Does this apply to any other cumulative effects?</p>



		Are you satisfied that the information supplied by the Applicant at Deadline 2 is sufficient or do you still maintain your original position?
Q2.2.60	NE	<p>Paragraph 2.12.2.3 of the ES [APP-062] identifies a number of impacts that have been scoped out of the cumulative impact assessment. You have stated in [REP1-212] that seabed disturbance from maintenance activities should not have been scoped out of the cumulative assessment as up to 25% of the cable corridor may need protective measures.</p> <p>How was this figure derived and what empirical evidence to you have to substantiate this point?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.61	MMO	<p>Paragraph 4.6 of your representation [RR-085] stated that the valued ecological receptors would respond differently to the impacts arising from sediment disturbance, sandwave removal and smothering. The Applicant has stated in [REP1-131] that the assessment of the overall significance of the effect of temporary habitat disturbance/loss to Habitats A-E was based on an appraisal of how each of the habitats would individually respond to the impacts of sediment disturbance, sandwave removal and smothering. Individually and overall, the significance of effects was considered to be of minor significance. The Applicant maintains that the assessment would have highlighted where there was an exception to this conclusion for a particular habitat.</p> <p>Are your concerns addressed by this clarification and if not, why not?</p>
Q2.2.62	Applicant	<p>Please provide the following publications that you have relied upon in evidence:</p> <p>Parry (2015) [REP2-005]</p>
Q2.2.63	NE	<p>Please provide the following publications that you have relied upon in evidence:</p>

		Roberts et al (2016) [REP1-213] and/or Roberts et al (2014) [REP1-212]
Q2.2.64	NE	<p>You have embedded a document in your Deadline 3 submission [REP3-076] that is not accessible to the ExA.</p> <p>Please provide a copy of: Technical Guidance Note: Providing Management Advice on MPA Features – Guidance on Using Feature Data for the Purposes of Fisheries Management Including the Use of Buffers and Margins, 4 November 2016.</p>
<b>Marine Mammals</b>		
Q2.2.65	TWT	<p>You stated in [REP1-023] that it was not appropriate to use the Booth et al (2017) paper as the basis for determining the significance of cumulative underwater noise impacts on harbour porpoise because the model heavily relies upon expert opinion rather than empirical data. The Applicant has since run an updated version of the iPCoD model, incorporating all available empirical information on harbour porpoise energetics, diet and responses to piling noise. The Applicant has stated in [REP2-004] that this has a similar or lower magnitude of effect for an equivalent scenario. Consequently, the appellant maintains that the ES outcomes that were based upon Booth et al (2017) remain valid and no long term population level impact is expected.</p> <p>What are your views on this additional analysis and how does it affected your stated position?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.66	Applicant, Whale and Dolphin Conservation (WDC)	<p>In [REP1-022] WDC have pointed out that the boat-based cetacean surveys are out of date, having been conducted between 2010 and 2013, and that no survey was undertaken along the export cable corridor. WDC also note that passive acoustic monitoring and aerial surveys, when the sea state is categorised as 3 or above, lead to acknowledged under recording and that SCANS data is only a snapshot with a 10 year interval. WDC concluded that the baseline survey had failed to detect representative numbers. The Applicant’s response in [REP2-004] was that it was a</p>

		<p>scientifically robust methodology that was approved by the SNCB.</p> <p>Notwithstanding the Statements of Common Ground [REP1-218], [REP1-224] and [REP1-227], please can the Applicant explain how the baseline survey is representative having regard to the issues that WDC have raised.</p> <p>What other data are available that WDC consider ought to be included in the baseline analysis?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.67	Applicant	<p>You stated in [REP1-122] that there was a large degree of variability between surveys in the overall distribution of sightings of harbour porpoise and it is highly likely that patterns were driven by variables that were not able to be included in the modelling, such as prey availability.</p> <p>If you have not taken account of key feeding area locations how have you met the requirements of 2.6.92 of NPS ENS-3?</p>
Q2.2.68	WDC, Applicant	<p>The Deadline 1 response [REP1-022] from WDC has highlighted a number of papers suggesting that pile driving can cause long term displacement of harbour porpoise from feeding areas.</p> <p>To what extent are these studies comparable with the present situation in terms of the duration and intensity of piling and prey availability?</p> <p>Do they enable valid comparisons to be drawn?</p> <p>Please can WDC submit copies of the following papers: Synder &amp; Kaiser (2009), Teilmann &amp; Carstensen (2012), Wisniewska et al (2018), Carstensen et al (2006) and Brandt et al (2011).</p> <p>The Applicant has challenged WDC's interpretation of the scientific literature in [REP2-004] and</p>

		<p>has highlighted a number of papers to the contrary. How does WDC view the empirical balance of evidence in the light of the additional papers that have been cited?</p> <p>Please can the Applicant submit copies of the following papers: Scheidat et al (2011), Brandt et al (2018) and Nabe-Nielsen et al (2018).</p>
Q2.2.69	WDC, NE	<p>In [REP1-022] WDC highlighted a concern about the impact of increased vessel activity throughout the life of the development because increased vessel noise can interrupt harbour porpoise foraging behaviour and echolocation, which can lead to significantly fewer prey capture attempts.</p> <p>Please can WDC submit a copy of Wisniewska et al (2018).</p> <p>In [REP2-004] the Applicant has suggested a methodology for the assessment of vessel movements and the associated ES conclusions have been agreed in the SoCG [REP1-218]. Does WDC concur with this view?</p> <p>Do the findings of Wisniewska et al (2018) change what NE has concluded in the SoCG?</p>
Q2.2.70	NE	<p>The Applicant has stated [REP1-122] that it was not possible to quantitatively predict vessel impact exposure, in terms of the number of marine mammals affected, unlike piling noise disturbance. The Applicant went on to note that it has not been possible to provide any meaningful combined assessment of both activities and it has therefore relied upon a qualitative assessment.</p> <p>Are you satisfied with the qualitative in combination assessment that has been provided.</p> <p>If not, how could it be improved?</p>
Q2.2.71	TWT	<p>You highlighted a methodology in Heinänen &amp; Skov (2015) [REP1-023] that could be used to assess the cumulative impacts of shipping. You then concluded that this would not be possible</p>



		<p>here because of a lack of appropriate detail on other projects.</p> <p>Under these circumstances how do you suggest the approach is used?</p> <p>Please submit a copy of Heinänen &amp; Skov (2015).</p>
Q2.2.72	TWT, NE	<p>In [RR-047] TWT stated that fishing activity should be included in the in combination assessment rather than in the ES baseline.</p> <p>Paragraph 4.4.3 of EU guidance<sup>1</sup> suggests that completed plans or projects do not form part of the in combination assessment required by Article 6(3) but that their effect should still be considered if they have continuing effects on the site.</p> <p>Even if TWT considers fishing as a plan or project that has not been completed why would an in combination assessment not result in double counting if fishing has been included in the baseline?</p> <p>What legislative purpose does TWT think would be served by assessing the effects of the continuing existing activity, i.e. fishing, a second time?</p> <p>Has a distinction been made between existing and future fishing activity in any of the Hornsea Project Three evidence?</p> <p>How can future fishing be taken into account before the outcome of any future licensing is known?</p> <p>What evidence does TWT have to suggest that the outcome of future licensing will intensify or extend fishing?</p> <p><sup>1</sup> Managing Natura 2000 Sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000)</p>



Q2.2.73	NE	<p>You stated in [REP1-212] that where there is ongoing fishing activity on the site, it is appropriate to consider the effects of the plan or project that is the subject of the assessment in the context of those prevailing conditions, of which fishing impact may be one.</p> <p>Does you consider that fishing should have been included in the ES as an in combination effect?</p>
Q2.2.74	NE	<p>In [RR-097] you stated that you did not agree with the approach of averaging the number of piling days per season when considering effects on the Southern North Sea candidate SAC (cSAC). You went on to suggest that work is more likely to occur during the summer months. The Applicant has since clarified in [REP1-131] that construction activity is likely to occur throughout the year and noted that the most weather sensitive component of the installation process is the blade lift with foundation installation commonly scheduled during the winter months to ensure that the installation of blades can occur during calmer, summer conditions.</p> <p>Please comment on the Applicant's response.</p> <p>Do you have any evidence to the contrary?</p>
Q2.2.75	TWT	<p>In [REP1-023] you highlight the fact that you are advocating an approach to underwater noise management that is used in other countries and that you do not support the SNCB advice.</p> <p>If the Applicant has acted on SNCB advice and concluded that there would not be a likely significant effect on harbour porpoise populations in the cSAC as set out in [APP-051], why is more strict mitigation at source necessary?</p> <p>What scientific evidence do you have to suggest the existing SNCB advice or current industry standards are inadequate?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>

Q2.2.76	NE	<p>In [REP1-023] TWT states that there is no understanding as to what the carrying capacity of harbour porpoise is in the Southern North Sea SCI. Therefore, in the opinion of TWT there is weak scientific information underpinning any area-based approach to management and SNCB advice.</p> <p>Please respond to this point and provide any additional information that you wish to rely upon in evidence that has not already been provided.</p>
Q2.2.77	NE, MMO	<p>WDC have stated in [REP1-022] that they wish to see temporary threshold shift as well as permanent threshold shift evaluated as an alone or in combination piling noise impact. The Applicant has indicated that in [REP1-218] you agreed that this is not required.</p> <p>Do you agree that an evaluation of temporary threshold shift is not required to inform the ES and HRA?</p>
Q2.2.78	WDC, TWT	<p>The Applicant has submitted a Site Integrity Plan for the Southern North Sea SCI [REP1-181] that would be secured via Condition 13(5) in the generation assets DML and 14(5) in the transmission assets DML. The Applicant goes on to state [REP2-005] that the final assessment of the effectiveness of the various mitigation options can only be carried out once the final design is decided. The Applicant notes that the MMO is now satisfied that this approach will provide appropriate control measures to mitigate effects on marine mammals when used alongside the Marine Mammal Monitoring Plan which would also be secured via the dDCO.</p> <p>Is there now sufficient detail to address your concerns on this matter?</p> <p>If not what changes do you suggest?</p>
Q2.2.79	NE, MMO	<p>WDC have pointed out [REP1-022] that an EPS license would be required for any pile-driving activity.</p>



		<p>With the Morge case in mind, is the project likely to infringe Article 12 of the Habitats Directive?</p> <p>If so, is it likely that a derogation, in the form of an EPS licence, would be granted?</p>
Q2.2.80	NE	<p>In [REP1-212] you state that the JNCC piling mitigation protocol is out of date and that a range of other mitigation measures used in other European countries should have been detailed in the ES. You welcomed the DML conditions but needed further discussion of mitigation options.</p> <p>If revised piling mitigation protocol guidance is yet to be consulted upon what guidance should be used and given weight in this examination?</p> <p>The Applicant has made a commitment to a Marine Mammal Monitoring Plan and Site Integrity Plan. Why do you consider that these measures would be insufficient.</p> <p>The SoCG with WDC [REP1-219] establishes a 20% increase in piling duration, cost escalation and only limited benefit. How effective would at-source mitigation be under these circumstances?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.81	WDC	<p>You stated in [REP1-022] that the CEA did not consider concurrent piling at two locations and that you do not agree that minor adverse impacts would result.</p> <p>The worst case scenario as set out in paragraph 4.13.1.5 of the ES [APP-064] is based on two concurrent piling events. Please clarify your position in the light of this.</p>
Q2.2.82	WDC	<p>In [REP1-022] you stated that East Anglia One North, East Anglia Two and Norfolk Boreas should have been included in the in combination assessment of windfarm cetacean impacts. In [REP2-005] the Applicant has highlighted the fact that no detailed information is available beyond the scoping reports and that this would not facilitate any meaningful consideration of their impact.</p>

		<p>Bearing in mind the above and the fact that they remain Tier 3 projects, do you still maintain this position?</p> <p>What other information would be available to support an in combination assessment?</p> <p>Please provide copies of any publications you wish to rely upon in evidence that have not already been provided.</p>
Q2.2.83	Applicant	<p>Please provide the following publications that you have relied upon in evidence:</p> <p>Booth et al (2017) [APP-064]          Wisniewska et al (2016) [APP-064]</p>
Q2.2.84	MMO	<p>Please provide the following publications that you have relied upon in evidence:</p> <p>Cooper et al (2008) [REP1-094]</p>

### 3. Marine Processes

Ref:	Question to	Questions
		<i>The ExA does not have any questions under this heading.</i>

### 4. Ecology – Onshore

Ref:	Question to	Questions
Q2.4.1	Applicant	In [REP1-142] you state that an outline bentonite break-out plan included in Appendix C of the



		<p>Outline CoCP would be updated as required during detailed design in consultation with the Environment Agency (EA).</p> <p>Has the EA been consulted in relation to the contents of the outline break-out plan?</p> <p>Does the outline break-out plan follow any established guidance?</p>
Q2.4.2	Applicant	<p>In [REP1-218] you state that a Pink-Footed Goose (PFG) Management Plan would be prepared and submitted to NE for approval after development consent had been granted in the 12 months preceding commencement of onshore works. In its Deadline 3 submission [REP3-074] NE argues that there should be an in-principle mitigation plan to inform the consenting process.</p> <p>To enable the ExA to consider this point further, please provide a draft outline PFG Management Plan.</p> <p>If it were appropriate to secure such a plan through the dDCO could this conveniently be done by way of an addition to requirement 10 (ecological management plan)?</p>

## 5. Navigation and other offshore impacts

Ref:	Question to	Questions
Q2.5.1	Applicant, Maritime and Coastguard Agency (MCA)	<p>The Applicant [REP2-005] and the MCA [REP3-084] disagree as to whether the Design Principles should require at least two lines of orientation.</p> <p>Please explain why you come to different conclusions on this matter.</p> <p>Are there examples of comparable OWFs which do not have at least two lines of orientation?</p> <p>If so, what is the typical spacing of Wind Turbine Generators (WTG) in those examples?</p>



Q2.5.2	Applicant	<p>The MCA response to Q1.5.4 [REP1-093] suggests that the Design Principles for the array should allow a tolerance of 50m from lines of orientation for siting WTG. The MCA submission for Deadline 3 [REP3-084] sets out reasons why the navigation systems used by Search and Rescue (SAR) helicopters would not (in the opinion of the MCA) remove the need to limit the tolerance to 50m.</p> <p>Please comment on the MCA's response to this point.</p>
Q2.5.3	Applicant	<p>At ISH1 you explained that, whereas a tolerance of 50m is typically allowed to avoid seabed features, the tolerance of 150m sought is intended to allow layout flexibility with a view to maximising wind capture. Your Deadline 3 submission [REP3-003] states that two OWFs have been consented with a 150m tolerance.</p> <p>Please supply any relevant layout plans or design principles for the consented schemes which are in the public domain.</p> <p>Please provide typical illustrative layouts showing how this approach might work in practice for Hornsea Project Three.</p> <p>Does this approach to layout design mean that the WTG would not be laid out in straight lines, regardless of seabed conditions?</p> <p>Are there any OWFs under construction which have taken the approach you are suggesting here?</p> <p>If so, please provide layout plans and/or aerial photographs to illustrate the approach taken.</p> <p>What evidence is there that the 150m tolerance you are suggesting would lead to material benefits in terms of the generation of renewable energy?</p> <p>Is it possible to quantify any such benefits?</p>



Q2.5.4	Applicant	<p>At ISH1 the Applicant stated that, whilst the minimum spacing between WTG would be 1km, for an array of 300 WTG the typical spacing would be around 2km. This appears to be a wider spacing than the 1 nautical mile (nm) which the MCA suggests is the required width for a helicopter refuge area. On that basis, the provision of a refuge area may place only a minor constraint on the layout of the array.</p> <p>Why is it that the Applicant does not feel it is appropriate to include a helicopter refuge in the Layout Design Principles?</p> <p>MGN543 suggests that there may be requirement for a helicopter refuge – is the generality of that advice affected by the spacing of WTG contemplated here?</p>
Q2.5.5	Applicant	<p>The MCA submission for Deadline 3 [REP3-084] argues that the provision of automatic identification technology on certain turbines would not remove the need for a helicopter refuge area. It also states that a refuge area would improve SAR scene access times and facilitate hoist transfers from vessels engaged in two phase rescues.</p> <p>Please comment on these points.</p>
Q2.5.6	MCA	<p>The Applicant’s Appendix 11 (to Deadline 2 submissions) SAR Technical Note [REP2-022] suggests that your analysis of the searchable area is overly pessimistic due to the various navigational systems that the SAR helicopters are fitted with. Your submission for Deadline 3 [REP3-084] states that a wider spacing would not affect the area impeded by the development lane.</p> <p>Given the typical spacing between WTG referred to at ISH1, would it be possible for SAR helicopters to operate within a development lane?</p> <p>What is your response to the Applicant’s point that the navigational systems fitted to SAR helicopters would enable safe operation within the array?</p>



Q2.5.7	MCA	<p>The Applicant's Appendix 11 (to Deadline 2 submissions) SAR Technical Note [REP2-022] states that in an emergency a SAR helicopter could climb out of the array within 2.5nm. Consequently it is said that any refuge would need to be relatively close to the location of an emergency to be of any assistance.</p> <p>What is your response to this comment?</p>
Q2.5.8	Spirit Energy	<p>At ISH1 you expressed a concern that shipping movements in the vicinity of your installations may be increased by vessels on broadly north/south passages diverting around the northern and eastern side of the array in order to join the traffic separation scheme. The baseline shipping routes are shown in figure 3.3 of the Applicants Appendix 13 (to Deadline 1 submissions) Racon and AIS Review J6A Platform Technical Note [REP1-177]. Having regard to that plan it is not clear why such vessels would not pass to the west of the array, in the lane between Hornsea Project Two (not shown on that figure) and Hornsea Project Three. Your Deadline 3 submission [REP3-060] states that ships may divert to the east of the array during a westerly gale.</p> <p>Is your concern on this matter specific to periods of westerly gales?</p> <p>In conditions where there is not a westerly gale, what is your evidence that significant numbers of north/southbound vessels would divert around the eastern side of the array?</p> <p>Please provide illustrative vessel tracks to demonstrate how/why shipping would take the route you suggest.</p>
Q2.5.9	Spirit Energy	<p>At ISH1 you expressed a concern that shipping movements in the vicinity of your installations may be increased by ferry traffic diverting around the south eastern corner of the array then altering course to the north east in order to cross the traffic separation scheme at an appropriate angle. This would appear to be a longer and more complex route that diverting to the north of the array as predicted in figure 3.4 of the Applicants Appendix 13 (to Deadline 1 submissions) Racon and</p>



		<p>AIS Review J6A Platform Technical Note [REP1-177]. Your Deadline 3 submission [REP3-060] refers to potential diversions to the south during a northerly gale.</p> <p>Is your concern on this matter specific to periods of northerly gales?</p> <p>In conditions where there is not a northerly gale, what is your evidence that significant numbers of eastbound ferries would divert around the south eastern corner of the array and, having done so, alter course towards your installations?</p> <p>Please provide illustrative vessel tracks to demonstrate how/why ferries would take the route you suggest.</p>
Q2.5.10	Applicant, Spirit Energy	<p>At ISH1 the Applicant referred to 10 years of traffic surveys which indicated that commercial ships do not generally pass through OWF arrays. Spirit Energy has pointed out that MCA advice does not preclude vessels from navigating through OWF arrays and that this may become more common in future [REP1-102].</p> <p>Please can the Applicant provide further detail as to when and where these surveys were carried out and what the results were?</p> <p>Does Spirit Energy have any evidential basis for the suggestion that commercial ships (other than fishing vessels) would pass through the array?</p>
Q2.5.11	Applicant, Spirit Energy	<p>At ISH1 Spirit Energy accepted that an estimated speed of 4 knots for a drifting vessel (not under command) would be an extreme situation. The Applicant's Deadline 3 submission [REP3-003] stated that the drift time from the eastern edge of the array to the nearest platforms would be 30 minutes to 2 hours. Spirit Energy's Deadline 3 submission [REP3-060] gave an example of a vessel drifting at 9 knots (albeit in a location where tidal conditions may be different).</p> <p>Specifically in relation to windfarm support vessels, what would be the likely speed of a drifting</p>



		<p>vessel driven by wind and tide?</p> <p>Specifically in relation to a construction barge, which may be loaded with large WTG components, what would be the likely speed of a drifting vessel driven by wind and tide?</p> <p>How long would it take for such vessels to drift from the eastern edge of the array to the Chiswick or Grove Platforms?</p>
Q2.5.12	Applicant	<p>Spirit Energy's Deadline 3 submission [REP3-060] states that the ES did not assess the risk of allision by vessels not under command with their infrastructure.</p> <p>Please respond to this comment.</p>
Q2.5.13	Applicant	<p>Spirit Energy's Deadline 3 submission [REP3-030] states that the ES did not assess whether risks relating to helicopters would be managed such as to be As Low As Reasonably Practicable.</p> <p>Please respond to this comment.</p>
Q2.5.14	Applicant, Spirit Energy	<p>The ES [APP-068] states that helicopter flights are conducted using instrument approaches to oil and gas platforms 5% of the time. Spirit Energy's Deadline 3 submission [REP3-069] states that instrument approaches would be required on 88 days per year.</p> <p>Please can the Applicant explain the basis for the figure of 5% in the ES?</p> <p>Please can the Applicant and Spirit Energy explain why their respective assessments differ so significantly?</p> <p>Please can Spirit Energy confirm whether Chiswick and Grove platforms have any restrictions in terms of instrument approaches at present?</p>



Q2.5.15	Spirit Energy	<p>Your submission for Deadline 3 [REP3-061] refers to the importance of stabilised helicopter approaches both in poor visibility and in good weather.</p> <p>Do you consider that the proposed array would compromise stabilised approaches to your platforms in good weather?</p> <p>If so, why?</p>
Q2.5.16	Spirit Energy	<p>Your Deadline 3 submission [REP3-061] explains why, in your view, certain helicopter operations could not be carried out safely. At ISH1 you explained that, typically, personnel are taken to/from Grove and Chiswick Platforms during the same day.</p> <p>On the assumption that you would not carry out flights assessed to be unsafe, is it reasonable to assume that the main impact would be on your ability to access Grove and Chiswick platforms rather than an impact on the safety of personnel?</p> <p>Is it reasonable to assume that you would not transfer personnel to Grove and Chiswick platforms if you were not confident that they could be transferred back to J6-A later that day?</p>
Q2.5.17	Applicant, Spirit Energy	<p>Please provide an update on your discussions regarding helicopter operations.</p> <p>Please provide your respective assessments of the number of days per year helicopters can (or could) serve Grove and Chiswick platforms now and with the proposed array in place.</p> <p>Having regard to the fact that Grove and Chiswick platforms are not routinely staffed, what is your overall assessment of the impact of any restrictions on helicopter flights on Spirit Energy's operations in the Markham field?</p>
Q2.5.18	Spirit Energy	<p>Your written representation [REP1-041] refers to well-developed plans for 2 subsea wells 2nm west of Chiswick platform. At ISH1 the Applicant stated that it was not aware of these plans before</p>

		<p>Deadline 1 (7 November 2018).</p> <p>Please set out a timeline for these proposals including necessary surveys, consents, investment decisions, design development, procurement and construction.</p> <p>What information is there in the public domain which provides evidence of your progress towards realising these proposals?</p>
Q2.5.19	Spirit Energy	<p>Your suggested protective provisions [REP1-032] include an exclusion zone of 2nm and a further exclusion zone of 7.5nm (subject to consultation).</p> <p>Do these suggested provisions seek to preserve the ability to make instrument flight approaches to all of your assets at all times?</p> <p>Is it your intention to preclude all WTG within the 7.5nm zone or to ensure that they are restricted in height?</p>
Q2.5.20	Applicant	<p>Spirit Energy's protective provisions [REP-032] state that part of the justification for a 2nm exclusion zone is to provide sufficient sea room for the operation of anchor spread vessels.</p> <p>What is your response on this matter?</p>
Q2.5.21	Spirit Energy	<p>Your suggested protective provisions [REP1-032] include upgrading the current warning systems on the J6-A platform to a radar early warning system.</p> <p>Is the need for this suggested protective provision dependent on the Secretary of State concluding that the proposed OWF would be likely to result in a material increase in shipping in the vicinity of your assets?</p>
Q2.5.22	Applicant	<p>Spirit Energy has drawn attention to protective provisions in favour of oil and gas operators</p>

		<p>included in the East Anglia Three Offshore Wind Farm DCO [REP3-049]. These require a proximity agreement to be completed before works can commence within a defined protected zone. The provisions appear to cover proposed oil and gas infrastructure as well as existing infrastructure.</p> <p>Please comment on the extent to which the circumstances of this application are comparable with the situation which these protective provisions sought to address.</p>
Q2.5.23	Applicant	Please comment on the extent to which your proposals accord with Policies GOV2, GOV3, OG1 and OG2 of the East Inshore and East Offshore Marine Plans.

## 6. Commercial fishing

Ref:	Question to	Questions
Q2.6.1	Applicant, National Federation of Fishermen's Organisations (NFFO)	<p>Your Statement of Common Ground [REP1-220] notes that the ES approach to cumulative effect assessment is under discussion.</p> <p>Please provide an update on those discussions.</p>
Q2.6.2	Applicant	<p>Please provide further information on the circumstances in which a 1000m safe passing distance would be required.</p> <p>What would be the frequency of these circumstances arising?</p> <p>How would the impacts on fishing of the need for safe passing distances around construction vessels be minimised?</p> <p>How would that be secured in the dDCO?</p>
Q2.6.3	Applicant,	Please provide an update on the way in which the mitigation of risks to fishing vessels from

	NFFO	exposed cables would be secured in the dDCO.
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7. Landscape, seascape and visual impacts		
Ref:	Question to:	Topic for question(s)
Q2.7.1	Applicant	<p>The Applicant's response to Q1.12.4 [REP1-122] states that noise mitigation measures for the HVDC converter/HVAC substation are likely to include acoustic enclosures.</p> <p>What would be the maximum height of any proposed acoustic enclosure?</p> <p>Please provide illustrative details of the materials, colour and appearance of the acoustic enclosures.</p> <p>Based upon the maximum height of the acoustic enclosure, what would its implications be in terms of landscape, visual and heritage impacts?</p> <p>Should a maximum height for the acoustic enclosure be included in the design parameters of the proposed development?</p>
Q2.7.2	Applicant	<p>The vehicular access to the onshore HVDC converter/HVAC substation is shown in Annex A of [REP2-14]. It would appear to require the removal of a substantial section of existing hedgerow, a matter which has been raised by Mulbarton Parish Council in its Deadline 3 submission [REP3-086].</p> <p>Given that the construction access would include provision for the frequent use of large HGVs, would the space to be taken up (including for visibility splays) for both the construction access and permanent access be the same, or would the safe access requirements differ between the construction and the permanent access requirements?</p>



		<p>Should the access requirements differ, what works (including landscaping works) would be required following the completion of the construction works?</p>
Q2.7.3	Applicant, SNC and NNDC	<p>The design parameters of the onshore HVDC converter/HVAC substation set out in table 3.63 of the ES [APP-058] include a proposed maximum height of 25m. The maximum height of the onshore booster station set out in table 3.62 of the ES [APP-058] would be 12.5m.</p> <p>From the information provided by the Applicant, what confidence can the ExA have that the proposed woodland planting would reach a height where it would achieve the levels of mitigation required in relation to both landscape/visual impacts and the impacts upon the setting of heritage assets?</p> <p>Based on the minimum size of trees to be planted (set out in Appendix A of the first iteration of the Outline Landscape Management Plan [APP -181] for the HVDC converter/HVAC substation), the Applicant is requested to provide evidence of the expected rate of growth that would be achieved throughout the anticipated lifetime of the development for the woodland planting areas.</p>
Q2.7.4	Applicant	<p>The Outline Landscape Management Plan (Rev 1) [REP1-145] does not include the listed Appendix A Drawings (page 10).</p> <p>Please ensure these are included within the next iteration of the plan.</p>
Q2.7.5	Applicant	<p>At ISH4 NNDC, SNC and NE set out several concerns regarding detailed landscaping matters including the maintenance of landscaping and hedgerow removal/replanting.</p> <p>Please provide an update on the various landscaping matters referred to at ISH4.</p>

8. Historic environment		
Ref:	Question to	Questions
Q2.8.1	Applicant	<p>The Written Representation submitted by Historic England (Hist E) at Deadline 1 [REP1-107] includes comments on the offshore Outline Written Scheme of Investigation [APP-115].</p> <p>Please provide an update on your discussions with Hist E and submit an updated offshore Outline Written Scheme of Investigation.</p>
Q2.8.2	Applicant	<p>In response to Hist E's Written Representation [REP1-107] the Applicant stated in [REP2-004] that an onshore Outline Written Scheme of Investigation will be submitted at Deadline 3. However, this document has not yet been provided.</p> <p>Please provide the onshore Outline Written Scheme of Investigation.</p>
Q2.8.3	Applicant	<p>At ISH4 the Applicant explained that the design parameters for the HVDC converter/HVAC substation had been based on technical requirements taking into account land take and topography.</p> <p>Please provide further technical evidence to justify the maximum proposed design parameters for the HVDC converter/HVAC substation, including but not limited to the maximum height of 25m.</p> <p>How have the maximum design parameters (including both size and positioning) evolved in order to minimise the impacts upon the setting of heritage assets along with landscape and visual impacts?</p>
Q2.8.4	Applicant	<p>At ISH4 the Applicant agreed to submit further information regarding the design intentions for the HVDC converter/HVAC substation.</p> <p>Please submit this information.</p>





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9. Land use and recreation		
Ref:	Question to	Questions
Q2.9.1	Applicant	<p>Written Representations from the National Farmers Union and the Hornsea Three Agents [for example REP1-066, REP3-104 &amp; REP3-105] include concerns regarding the potential impacts of link boxes on agricultural operations.</p> <p>Please provide typical illustrative layouts of link boxes for both HVAC and HVDC technology.</p> <p>Would link boxes always be grouped together?</p> <p>Under a phased scenario would link boxes for phase two be sited alongside link boxes for phase one?</p> <p>Taking account of the potential impact upon farm machinery, what is the maximum area of agricultural land that would be taken out of operation by link boxes for:</p> <ul style="list-style-type: none"> <li>• each set of link boxes; and</li> <li>• the cable route as a whole?</li> </ul> <p>In what ways could the layout and design of link boxes be optimised to minimise the impact upon agricultural operations?</p> <p>What are the implications of phasing for the location and layout of link boxes?</p> <p>Please provide further detail in the Outline Code of Construction Practice on the layout and design of link boxes with a view to mitigating the impact upon agricultural operations.</p>



		What provision would there be for consultation with landowners on the location and layout of link boxes?
Q2.9.2	Applicant and National Farmers Union (NFU)	<p>At ISH4 both the Applicant and the NFU provided updates on impacts upon agricultural operations. It is understood that discussions are continuing.</p> <p>Please provide an update on these discussions, including details of any matters where further measures may be added to the Outline Code of Construction Practice and any issues where there remains disagreement.</p>
Q2.9.3	Applicant, NCC and NNDC	<p>The Statement of Common Ground between the Applicant and NCC [REP1-232] states that discussions are continuing regarding management measures relating to the Norfolk Coast Path.</p> <p>Please provide an update on the discussions between the two parties in relation to the Norfolk Coast Path, including any matter of disagreement which remains outstanding.</p> <p>The Applicant is requested to submit an up to date outline framework of measures that would be included within the Public Rights of Way (PRoW) Management Plan required by paragraph 6.8.1.22 of the Outline Code of Construction Practice [REP1-142].</p> <p>Paragraph 6.8.1.22 of the Outline Code of Construction Practice [REP1-142] states that the PRoW Management Plan would be submitted for the approval of both NNDC and NCC. Do the respective Council's agree that both parties should be responsible for its approval?</p>

10. Socio - economic		
Ref:	Question to:	Questions



Q2.10.1	Applicant	<p>Requirement 22 of the dDCO requires the submission of a Skills and Employment Plan.</p> <p>Please provide an Outline Skills and Employment Plan setting out a framework of the types of measures that would be expected to be included in the more detailed plan that would be submitted for approval post consent.</p> <p>Would it be appropriate to include measures such as employment and business opportunities, access to training, apprenticeships, internships, skills initiatives, liaison with local enterprise partnerships and local business groups?</p>
Q2.10.2	Applicant	<p>The Applicant's response to question Q1.10.2 refers to socio economic benefits arising from other OWF projects.</p> <p>Please provide a copy of the Orsted Socio Economic Study Report (2015) referred to in this response.</p> <p>What evidence can be provided of socio economic benefits arising from comparable OWF projects, including local and regional benefits relating to employment, training and skills?</p>
Q2.10.3	NNDC	<p>NNDC has raised concerns in its Local Impact Report [REP1-062] regarding the effect of the proposed construction works on tourism in the landfall area. These concerns were elaborated upon at ISH4. The Council has also submitted a report 'Economic Impacts of Tourism 2017 Results' [REP3-103].</p> <p>In terms of effects upon visitor numbers and associated tourism spending, could the Council quantify what the impacts of the construction of the proposed development might be (both in terms of the immediate area of Weybourne and the wider area)?</p> <p>What specific mitigation or monitoring measures are, in your view, necessary in order to mitigate any impact upon tourism?</p>

		<p>How would such measures be secured in the dDCO?</p> <p>Does the Council consider that there might also be positive effects, for example the use of accommodation and the purchase of food and drink by construction workers?</p> <p>If so, what weight should be attached to such benefits?</p>
Q2.10.4	Applicant	<p>At ISH4 the Applicant referred to research that has been undertaken on the impacts of offshore and onshore projects on tourism economies.</p> <p>Please provide evidence which supports the Applicant's conclusions in the ES [APP-082] on the impact upon visitor volumes and activity during the construction process?</p>

<b>11. Transport and highway safety</b>		
<b>Ref:</b>	<b>Question to</b>	<b>Questions</b>
Q2.11.1	Applicant	<p>Section 7.7.9 of the ES [APP-079] provides personal injury accident data for the study area. However, this does not appear to include details of accident data for the junction of the B1149 with Oulton Street.</p> <p>Please provide comparable personal injury accident data for this junction along with a commentary of its implications in relation to the proposed main construction compound at Oulton Street.</p>
Q2.11.2	Applicant	<p>Paragraph 2.1.4.4 of the Outline Construction Traffic Management Plan (CTMP) [REP1-146] states that during peak holiday seasons the approved routing of heavy goods vehicles in the final CTMPs, if practical, may need to avoid routes marked on the Norfolk County Council Route</p>

		<p>Hierarchy Map. The Applicant's response to Q1.11.7 [REP1-122] states that it is premature to identify circumstances for possible re-routes until there is further certainty as to the construction programme.</p> <p>Notwithstanding this answer, with specific reference to the A149 'The Coastal Road', based on the information on HGV movements in the revised Transport Assessment [REP1-162], what is the likelihood of re-routing being required during the peak holiday season?</p> <p>In the event that re-routing is required from the A149, please provide details of:</p> <ul style="list-style-type: none"> <li>• the alternative routes that may be used; and</li> <li>• the periods of time when re-routing is likely to occur.</li> </ul> <p>Should paragraph 2.1.4.4 of the Outline CTMP define the peak holiday seasons?</p>
Q2.11.3	Applicant	<p>The Statement of Common Ground [REP1-099] between the Applicant and Broadland District Council states that work is ongoing to develop traffic management measures to be included within the final CMTMP in respect of the road link through Cawston. Cawston Parish Council has also set out its concerns regarding the impacts of construction traffic in Cawston in its Deadline 3 submission [REP3-087], including the need to consider alternative routes</p> <p>Please provide an update on such work including any traffic management measures that may be required and the potential for alternative routes to be used.</p>
Q2.11.4	Applicant and Highways England	<p>Highways England's Deadline 2 response [REP2-029] sets out the issues that it still considers to be outstanding. These relate to:</p> <ul style="list-style-type: none"> <li>• A47/Taverham Road (east of Honingham) junction;</li> <li>• A47/A140 and A47/A1074 junctions; and</li> <li>• A140/B1113 junction.</li> </ul>

		Please provide an update on your discussions on these matters.
Q2.11.5	Applicant and NCC	<p>Please provide an update on the following transport and highways matters:</p> <ul style="list-style-type: none"> <li>• A140/B1113 junction (taking account of [REP1-157] and the concerns of Swardeston Parish Council [REP3-085]);</li> <li>• The proposed permanent access for the onshore HVAC Booster Station[REP1-156];</li> <li>• Access for abnormal loads to the HVAC Booster Station;</li> <li>• The access strategy for the proposed Oulton construction compound; and</li> <li>• Cumulative impacts in relation to the access to the proposed Oulton construction compound.</li> </ul>

12. Living conditions for local residents		
Ref:	Question to	Questions
Q2.12.1	Applicant	<p>The assessments of noise impacts from onshore construction works in the ES [APP-080] are made on the assumptions that “significant noisy works” would be unlikely to occur for the period of 10 or more days in any 15 consecutive days; or for 40 or more days in any 6 consecutive months (paragraph 8.12.1.3).</p> <p>What confidence is there that these thresholds would not be exceeded, taking account of the nature and the proposed time period of works for the different parts of the onshore construction process?</p> <p>Please explain what would comprise the “significantly noisy works”.</p>

		<p>Would any of the “significantly noisy works” be carried out under continuous working hours?</p> <p>Please provide details of how the noise from the onshore construction works would fluctuate throughout the construction period for each part of the construction works.</p> <p>How would this be controlled by the dDCO to ensure that the relevant time periods are not exceeded?</p>
Q2.12.2	Applicant	<p>Paragraph 5.11.8 of the Overarching National Policy Statement for Energy (EN-1) states that a project should demonstrate good design, including through selection of the quietest cost-effective plant available, containment of noise within buildings wherever possible and the optimisation of plant layout to minimise noise emissions.</p> <p>In the context of paragraph 5.11.8 of EN-1, explain how good design has been demonstrated for Work No.9 (onshore HVAC booster station) and Work No.10 (onshore HVDC converter/HVAC substation).</p>
Q2.12.3	Applicant	<p>Table 8.21 of the ES [APP-080] includes examples of measures to be adopted to mitigate the noise and vibration impacts of construction activities.</p> <p>For locations where cable construction activities would take place in particularly close proximity to residential properties (for example residential properties on Great Melton Road in Little Melton), please set out an example of the package of noise management measures that could be included within the final Code of Construction Practice.</p>
Q2.12.4	Applicant	<p>In relation to the onshore construction works, the ES [APP-080] states that at this stage, blasting or impact piling is considered unlikely or is not predicted (paragraphs 8.12.1.14 and 8.12.1.5). As such, the ES finds that construction vibration would be unlikely to be significant.</p>

		<p>Explain what factors would determine whether or not blasting or impact piling would be required for the different parts of the onshore works.</p> <p>If blasting or impact piling were required, what would be the effects upon residential living conditions and what mitigation measures might be needed?</p> <p>Would it change the findings of the ES?</p>
Q2.12.5	Applicant	<p>With reference to the Planning Practice Guidance – Noise (Paragraph: 005 Reference ID: 30-005-20140306) please set out clearly how the proposed construction works would:</p> <ul style="list-style-type: none"> <li>• mitigate and reduce to a minimum noise above the Lowest Observed Adverse Effect Level (LOAEL); and</li> <li>• avoid noise above the Significant Observed Adverse Effect Level (SOAEL).</li> </ul>
Q2.12.6	Applicant	<p>At ISH4 the Applicant referred to other nationally significant infrastructure projects where core working hours commence at 7.00am.</p> <p>Other than the Norfolk County Council (Norwich Northern Distributor Road) Order 2015 [REP2-005], please provide details of other comparable projects.</p> <p>Explain whether the particular circumstances of such projects are similar to those of Hornsea Project Three (for example in relation to the type of construction works proposed and their proximity to sensitive receptors such as residential properties).</p> <p>Why is it necessary for the construction working hours at parts of the development where construction would be taking pace over a longer period of time (e.g. the HVDC converter/HVAC substation) to be consistent with those of other parts of the project such as the onshore cable route?</p>



		<p>Would an 8.00am core working hours commencement time not be more appropriate for such works?</p>
Q2.12.7	Applicant	<p>Paragraph 4.1.1.6 of the Outline Code of Construction Practice [REP1-142] sets out the activities which may be undertaken on a continuous working basis (subject to agreement with the relevant local authority Environmental Health Officer).</p> <p>For each of the listed activities, over what period of time would the continuous working take place?</p> <p>For the activities listed in paragraph 4.1.1.6 should additional restrictions be in place in the Outline Code of Construction Practice to prevent continuous working at the weekend and on public holidays?</p> <p>In the case of horizontal directional drilling, what is the likelihood of continuous working being required?</p>
Q2.12.8	Applicant	<p>Paragraph 4.1.1.5 of the Outline Code of Construction Practice [REP1-142] includes the running of support generators or emergency backup supplies as an activity that may be undertaken on a continuous cycle with no further consent required. It is assumed this would apply to both the construction work locations and the construction compounds/storage areas.</p> <p>In what circumstances would the running of support generators be required?</p> <p>What noise impacts (day time and night time) would result from support generators and emergency back-up supplies?</p> <p>What mitigation would be put in place to minimise the noise impacts and how would this be</p>

		controlled through the Outline Code of Construction Practice?
Q2.12.9	Applicant	<p>The Local Impact Report from Broadland District Council [REP1-053] and the Written Representation from Cawston Parish Council [REP1-004] refer to potential vibration impacts from HGVs upon existing residential properties (some of which are heritage assets).</p> <p>Please provide an update on the assessment of such potential impacts and any mitigation that may need to be included in the Outline Code of Construction Practice and/or the Outline Construction Traffic Management Plan.</p>
Q2.12.10	Applicant	<p>Further to representations made regarding low frequency tonal noise at ISH4, NNDC has submitted at Deadline 3 [REP3-103] a report titled "Substation Noise Assessment Summary – Sheringham Shoal, Cawston, Norfolk".</p> <p>Please comment on this document.</p> <p>Please outline the noise monitoring measures that would be included in the Noise Management Plans for the operation of the HVAC Booster and the HVDC converter/HVAC substation.</p>
Q2.12.11	Applicant	<p>At ISH4 Oulton Parish Council referred to issues in connection with a construction compound used for Hornsea Project One at Holton-Le-Clay in Lincolnshire.</p> <p>The Applicant is requested to comment on these concerns and set out how the construction mitigation and management measures that have been developed for Hornsea Project Three have sought to learn from the experience of Hornsea Project One and other previous projects.</p>

13. Content of the DCO		
Ref:	Question to	Questions
		<i>References to the dDCO in this section relate to the version submitted at Deadline 1 [REP1-127]</i>
		<b>Articles</b>
Q2.13.1	Applicant	<p>At Issue Specific Hearing (ISH) 3 you explained your view that the reference to 'any dispute' as used in arbitration clauses in various DCOs would apply to decisions of the Secretary of State relating to the transfer of the benefit of the Order under Article 5. The ExA notes that this point is not agreed by all parties and we are not aware that is any specific legal authority on it.</p> <p>Assuming, for the purposes of this question, that your interpretation is correct, why is Article 5(6) necessary?</p> <p>In any event, why do you consider that it is appropriate for a decision of this nature to be transferred to an arbitrator, bearing in mind that the Secretary of State has considered it necessary to ensure in all made DCOs that the benefit cannot be transferred without his approval, other than in specific circumstances where the financial credibility of the transferee is assured and/or the time limit for compulsory acquisition has expired?</p> <p>Why do you consider that an arbitrator would be better placed to assess the suitability of a transferee than the Secretary of State?</p>
Q2.13.2	Applicant	In Article 19(3) of the dDCO, should the reference in line 2 be to paragraph 10 of Schedule 7 rather than paragraph 9?
Q2.13.3	Applicant	In Article 21(9) of the dDCO, should the reference in line 3 be to Article 22(3) rather than Article 25(3)?
Q2.13.4	Applicant	Your response to question Q1.14.14 [REP1-122] indicated that provision would be made in Article 35 of the dDCO for the approved guarantee (or alternative form of security) to be made

		<p>available to persons entitled to compensation by placing it on deposit with the documents certified in accordance with Article 35. This would not appear to be reflected in the current draft of Article 35. Your response also referred to an amendment to the Explanatory Note. There do not appear to be any changes in the tracked change version of the dDCO.</p> <p>Please review Article 35 and the Explanatory Note accordingly.</p>
Q2.13.5	Applicant	Should the Outline Written Schemes of Investigation (for onshore and offshore archaeology) be added to the certified documents listed in Article 35?
Q2.13.6	Applicant, The Crown Estate	<p>The Applicant's response to Q1.13.33 [REP1-122] referred to discussions with The Crown Estate regarding the drafting of Article 40 (Crown Rights).</p> <p>Please provide an update on your discussions.</p>
<b>Requirements</b>		
Q2.13.7	Applicant	<p>The Applicant has agreed to include Historic England as a consultee for Requirement 8 (provision of landscaping).</p> <p>Please review the outline Landscape Management Plan with a view to ensuring that it captures any objectives which relate to mitigating impacts on heritage assets.</p>
Q2.13.8	NNDC	<p>Your submission for Deadline 3 [REP3-103] includes a hyperlink to evidence in support of your argument that the maintenance period specified in Requirement 9 (implementation and maintenance of landscaping) should be 10 years.</p> <p>Please provide evidence which does not rely on a hyperlink.</p>
Q2.13.9	Applicant	Should Requirement 16 (onshore archaeology) be amended to refer to the Outline Written Scheme of Investigation?

Q2.13.10	Applicant, NNDC, BDC, SNC and NCC	<p>Requirement 22 (local skills and employment) states that a skills and employment plan shall be submitted to the relevant planning authority for approval.</p> <p>Given that the skills and employment plan would potentially relate to a wide area comprising the East Anglia and/or Humber regions, is it appropriate for it to be considered for approval by the relevant planning authority?</p> <p>Would it be more appropriate for it to be considered by NCC in consultation with the relevant planning authorities and Local Enterprise Partnerships?</p> <p>Who would be the appropriate determining authority in the Humber region?</p> <p>As the determining authority in the Humber region may not be an Interested Party, has there been any consultation to establish whether the authority would wish to have a determining role?</p> <p>Are there any other means for determining an application for approval under this requirement?</p>
<b>Schedules</b>		
Q2.13.11	Applicant	<p>In Schedule 7 of the dDCO:</p> <ul style="list-style-type: none"> <li>• should line 1 of paragraph 3(2) read “for (a), (b) and (c) substitute” ?</li> <li>• should line 8 of paragraph 6 read “are so modified”?</li> </ul>
<b>Schedule 11 – Deemed Marine Licence (generation assets)</b>		
Q2.13.12	Applicant	<p>In Part 1 should the definition “statutory historic body” refer to the Historic Buildings and Monuments Commission for England (rather than Historic England)?</p>
Q2.13.13	Applicant	<p>The MMO has suggested [REP3-092] that the dDCO should make reference to the total number of</p>



		<p>cable crossings required and the maximum volume and area of cable protection required for each crossing.</p> <p>Please comment on this suggestion.</p>
Q2.13.14	Applicant	<p>At ISH3 you explained your view that the reference to 'any dispute' as used in arbitration clauses in various DCOs would apply to decisions of the MMO. The ExA notes that this point is not agreed by all parties and we are not aware of any specific legal authority on it.</p> <p>Assuming, for the purposes of this question, that your interpretation is correct, why is paragraph 10 necessary?</p> <p>Assuming (for the purposes of this question) that your interpretation is not correct, why do you consider that it would be appropriate for the statutory functions of the MMO to be transferred to an arbitrator?</p> <p>Why do you consider that the existing appeal mechanisms under the Marine and Coastal Access Act are not suitable?</p>
Q2.13.15	Applicant	<p>The MMO has suggested [REP3-092] that Condition 4 should be expanded to specify a requirement for all phases to be completed within 7 years.</p> <p>Please comment on this suggestion.</p>
Q2.13.16	Applicant	<p>The National Federation of Fishermen's Organisations has suggested [REP3-089] that issuing notices to mariners and informing Kingfisher Information Service in case of exposure of cables (or damage to cable protection) should be secured by making an addition to Condition 7.</p> <p>Please comment on this suggestion.</p>

Q2.13.17	Applicant	Should Trinity House and the Maritime and Coastguard Agency be added as consultees for Condition 13(1)?
Q2.13.18	Applicant	Should Condition 13(1)(f) refer to Conditions 18 and 19 (as well as 17)?
Q2.13.19	Applicant, Hist E	<p>Hist E has suggested [REP3-102] an additional paragraph (vii) in Condition 13(1)(d) relating to spatial data for Archaeological Exclusion Zones and application of a Protocol for Archaeological Discoveries. Condition 13(2)(h) relates to a protocol for reporting archaeological discoveries.</p> <p>Would the wording suggested by Hist E result in duplication?</p> <p>Would be the submission of spatial data relating to the Archaeological Exclusion Zones be covered by Condition 13(2)(d)?</p> <p>Are any amendments to Condition 13(2) needed to ensure that submission of spatial data is secured?</p>
Q2.13.20	Applicant, MMO	Please provide an update on your discussions regarding the timescales set out in Condition 14.
Q2.13.21	Hist E	<p>You have suggested [REP3-102] that the timescale provided for in Condition 14(1) for the submission of plans, scheme and protocols should be amended to 6 months, to ensure alignment with the production of the Written Scheme of Investigation.</p> <p>Given that the Written Scheme of Investigation may inform the plans submitted, why is it appropriate for these time periods to be aligned?</p>
Q2.13.22	Applicant	<p>The MMO has suggested [REP3-092] that the phrase “so far as applicable” should be removed from Conditions 17, 18 and 19 on the basis that it is unnecessary.</p> <p>Please comment on this suggestion.</p>

Q2.13.23	MMO, NE	<p>The MMO has commented [REP3-092] that it has received reports on Offshore Wind Farms (OWF) under construction which have cast doubt over the efficacy of soft-start mitigation measures relating to piling. In Condition 18, the MMO (supported by NE) suggests an amendment to the effect that, if monitoring shows significantly different impacts to those assessed in the ES, piling activity should cease until an update to the marine mammal monitoring plan and further monitoring requirements have been agreed.</p> <p>Please provide evidence of the need for this approach.</p>
Q2.13.24	Applicant	<p>Hist E has suggested [REP3-102] an additional paragraph (f) in Condition 19(2) relating to the submission of bathymetric and side scan sonar coverage of Archaeological Exclusion Zones, together with an archaeological analysis of the data.</p> <p>Please comment on this suggestion.</p>
<b>Schedule 12 – Deemed Marine Licence (transmission assets)</b>		
Q2.13.25	Applicant	<p>Some of the questions relating to Schedule 11 raise similar points in connection with equivalent provisions in Schedule 12. Those points are not repeated here.</p> <p>Please identify any further or different responses which are specific to Schedule 12.</p>
Q2.13.26	Applicant	<p>Given that cable installation may require foreshore excavation, should Condition 14(2)(f) include reference to the Relevant Local Authority?</p>
Q2.13.27	Applicant	<p>Should Trinity House be added as a recipient of vessel traffic monitoring data under Condition 20(2)(d)?</p>
<b>Schedule 13 – Arbitration</b>		
<i>The ExA notes that discussions are ongoing and has no questions at this stage.</i>		



<b>14. Compulsory acquisition</b>		
<b>Ref:</b>	<b>Question to</b>	<b>Questions</b>
Q2.14.1	Applicant	<p>At Issue Specific Hearing (ISH) 1 you referred to a cap of 6GW for the May 2019 round of the Government's Contract for Difference (CfD) process. At ISH3 you referred to a 4GW cap and your written submission for Deadline 3 [REP3-003] refers to a cap of 2 to 4GW.</p> <p>Please clarify what the cap will be in May 2019.</p> <p>Does the cap apply just to Offshore Wind Farms (OWF) or to other renewable energy projects?</p>
Q2.14.2	Applicant	<p>At ISH1 the Applicant explained that the CfD process is an important factor influencing the proposed approach to phasing Hornsea Project Three. The Applicant stated that Hornsey Project Three is unlikely to be in a position to bid in the 2019 round as it would not obtain development consent in time. Based on the information contained in Table 2 of Appendix 22 [REP1-164] it appears that the combined capacity for currently consented OWF may exceed the cap in the 2019 CfD round, assuming all of the consented schemes were to submit bids.</p> <p>In relation to the most recent round of the CfD process, what information is there about the combined capacity of the projects bidding for CfD as compared with the combined capacity of projects for which CfD was awarded?</p> <p>Looking forward to the 2019 CfD round, how is the combined capacity of bids likely to compare with the anticipated cap?</p> <p>Is it likely that projects that are not successful in the 2019 round will bid in the 2021 round together with Hornsea Project Three and other projects currently at application stage?</p>

		<p>If so, how is the combined capacity of bids likely to compare with the anticipated cap in 2021?</p> <p>Having regard to the above factors, what are the prospects for Hornsea Project Three being awarded a CfD, either for the whole project or the first phase, in 2021?</p>
Q2.14.3	Applicant	<p>At ISH1 you made reference to potential alternative sources of funding such as power purchase agreements. Your submission for Deadline 3 [REP-003] states that there is a power purchase agreement in place for Hornsea Project One.</p> <p>Please provide further information about the power purchase agreement for Hornsea Project One.</p> <p>Aside from Hornsea Project One, are there any current or proposed examples of power purchase agreements being used to deliver OWFs either in the UK or elsewhere?</p> <p>Assuming that the CfD process would secure a price for electricity which would exceed the anticipated market price, how is it that a power purchase agreement can be viable in the current energy market?</p>
Q2.14.4	Applicant, The Crown Estate	<p>Please provide an update regarding consents under section 135(1) and 135(2) of PA2008.</p>
Q2.14.5	Applicant	<p>Please provide an update regarding any discussions with Statutory Undertakers and the requirements of sections 127 and 138 of PA2008.</p> <p>Please provide any information which may assist the Secretary of State in considering sections 127 and 138 in the event that there are representations from any Statutory Undertakers that have not been withdrawn before the end of the examination.</p>
Q2.14.6	Applicant	<p>Our written question Q1.14.48 referred to “landlocked plots”.</p>

		Please explain why it would not be appropriate to list all persons with interests in “landlocked plots” as Category 3 persons in Part 2b of the Book of Reference.
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15. General		
Ref:	Question to:	Questions
Q2.15.1	Applicant	<p>Paragraphs 4.8.5 and 4.8.6 of the Overarching National Policy Statement for Energy (EN-1) state that Applicants must consider the impacts of climate change when planning the location, design, build, operation and, where appropriate, decommissioning of new energy infrastructure, having regard to the latest UK Climate Projections available at the time the ES was prepared.</p> <p>How has this requirement been addressed in the design of Hornsea Project Three, in relation to both the onshore and the offshore infrastructure?</p>
Q2.15.2	Applicant	<p>Paragraph 2.3.4 of the National Policy Statement for Renewable Energy Infrastructure (EN-3) considers climate change in the context of Offshore Wind Farms (OWF) and states that Applicants should set out how a proposal would be resilient to storms.</p> <p>In relation to the offshore infrastructure, how has this requirement been addressed in the design of Hornsea Project Three?</p>
Q2.15.3	Applicant	<p>Paragraph 4.5.3 of the Overarching National Policy Statement for Energy (EN-1) seeks to ensure that energy infrastructure developments are sustainable and as attractive, durable and adaptable as they can be, taking into account both functionality (including fitness for purpose and sustainability) and aesthetics.</p> <p>How has Hornsea Project Three demonstrated good design in terms of functionality, including fitness for purpose, sustainability and being durable and adaptable?</p>

		(Please note that the ExA will consider aesthetics in the context of landscape and visual impacts).
Q2.15.4	Applicant	<p>NNDC suggests [REP3-103] that if the landfall cables were installed using open cut methods they would be at a relatively shallow depth and therefore liable to be exposed by coastal erosion.</p> <p>What assessment has been made of the amount of coastal erosion that may be expected during the lifetime of the project?</p> <p>What level of confidence is there that open cut installation at the landfall would be a durable design solution?</p> <p>In the event that cables were to become exposed due to coastal erosion, what mitigation measures may be required?</p> <p>Would the landfall cables require any particular measures at the decommissioning stage?</p>
Q2.15.5	NNDC, BDC, SNC, NCC, NE	<p>The Applicant has submitted a revised Outline Code of Construction Practice (CoCP) [REP1-142].</p> <p>Are there any further revisions or additions that you consider should be made to this document?</p> <p>If there are, please provide justification for this and suggest any new/amended wording that may be required.</p>
Q2.15.6	Applicant, NNDC, BDC and SNC	<p>The Outline CoCP [REP1-142] includes several matters where agreement is required between the Applicant and other parties. For example, paragraph 4.1.1.6 requires that certain activities may take place on a continuous working basis subject to obtaining agreement with the relevant local authority Environmental Health Officer.</p> <p>Should details be provided within the Outline CoCP of what the procedure and timescales should</p>

		be for the matters where such agreements are required?
Q2.15.7	Applicant	<p>An onshore decommissioning plan would have to be submitted for approval pursuant to Requirement 23 of the dDCO [REP1-133].</p> <p>Please provide an outline of the matters and measures that would be included in the onshore decommissioning plan.</p>
Q2.15.8	NNDC	<p>In its Local Impact Report [REP1-062] NNDC states that the Applicant should pursue with National Grid and UK Power Networks the opportunities for a secondary interconnection along the cable route in order to supply electricity where it may potentially be required to support housing and employment growth. The Applicant has responded [REP2-008] stating that the transfer from the National Grid to the local network and the capacity of the local transmission network is beyond the Applicant's control.</p> <p>In the context of the Hornsea Project Three DCO application, what measures does the Council consider could be practicably and reasonably secured?</p> <p>What is the legal and policy basis for securing such measures?</p>

*End of questions*