Date: 22 April 2020
Our ref: Hornsea Project Three

Gareth Leigh
Department for Business, Energy & Industrial Strategy
1 Victoria Street
London
SW1H 0ET

Natural England,
Lateral,
8 City Walk
Leeds
LS11 9AT

BY EMAIL ONLY

Dear Gareth,

Hornsea Project Three – Applicant's submission to Secretary of State Consultation Request for further information

Natural England's remit is to ensure sustainable stewardship of the land and sea so that people and nature can thrive. We are working to achieve a healthy and biodiverse marine environment which can enable a truly sustainable UK offshore wind sector, to support the achievement of 'net zero' and address the climate change emergency. We use our expertise to help facilitate offshore windfarms that are sensitively located and constructed, whilst protecting marine ecosystems from proposals with significant environmental impacts through our statutory advice. This will build the marine environment's resilience to climate change and its ability to mitigate its effects.

On 27th September 2019 the Secretary of State (SoS) wrote to Ørsted to request further information 'in consultation with Natural England' on matters pertaining to the Habitats Regulations derogations and to Stage 2 of the Marine Conservation Zone (MCZ) assessment process. Natural England provided advice to Ørsted during the consultation period, as detailed in our letter to BEIS on 17th February 2020.

Having reviewed the documents submitted by the project on 14th February 2020, Natural England provides the following statutory advice to the SoS and BEIS for consideration. This advice will consider any further mitigation measures proposed by the project, additional mitigation that could be implemented, and the compensatory measures selected for the features of sandbanks and kittiwake. It will also consider further mitigations and requirements under Section 126(7) of the Marine and Coastal Access Act 2009 (MCAA) for MCZs, and the potential implications of this application for other projects in the future. In proving this advice, Natural England has drawn from the EC Guidance Document on Article 6(4) of the Habitats' Directive 92/43/EEC.

1. Special Areas of Conservation (SACs)

Two Special Areas of Conservation (SAC's) with Annex I Sandbanks (slightly covered by water all of the time) as a feature were identified in the SoS's request for further information: North Norfolk Sandbanks and Saturn Reef (NNSSR) and The Wash and North Norfolk Coast (WNNC) SAC. The former site is located offshore and the latter is nearshore and adjacent to Cromer Shoal Chalk Beds MCZ. For both sites, Natural England identified significant concerns at the scale of impact – both temporal and spatial – from cable installation and the deposition of cable protection. It should also be noted that Natural England are not satisfied that the potential impacts to Annex 1 reef features in both sites have been sufficiently assessed or mitigated for.

1.1 Article 6(3) Assessment

The Secretary of State, acting as the relevant competent authority for this project, will need to ensure that it has acted in accordance with Article 6 of the Habitats Directive, as informed by the relevant judgements of the Court of Justice of the European Union ("CJEU"). With regards the interpretation of Article 6(3) of the Habitats Directive, in *Landelijke Vereniging tot Behoud van de Waddenzee v Staatssecretaris van Landbouw* (C-127/02), the CJEU stated that:

> 59. Therefore, pursuant to Article 6(3) of the Habitats Directive, the competent national authorities, taking account of the conclusions of the appropriate assessment of the implications of [the plan or project], in the light of the site's conservation objectives, are to authorise such activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects…

More recently, in the CJEU stated in the *Holohan & Others v An Bord Pleanala* (C-461/17) that:

> 34 The [appropriate] assessment carried out under that provision may not have lacunae and must contain complete, precise and definitive findings and conclusions capable of dispelling all reasonable scientific doubt as to the effects of the proposed works on the protected area concerned…
>
> 37 … all aspects which might affect [the conservation] objectives must be identified and since the assessment carried out must contain complete, precise and definitive findings in that regard, it must be held that all the habitats and species for which the site is protected must be catalogued. A failure, in that assessment, to identify the entirety of the habitats and species for which the site has been listed would be to disregard the above mentioned requirements and therefore … would not be sufficient to dispel all reasonable scientific doubt as to the absence of adverse effects on the integrity of the protected site…

In accordance with Article 6(4) of the Habitats Directive, if the Secretary of State, acting as competent authority, is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site or the European offshore marine site

(as the case may be). If the Secretary of State makes this decision he must secure any necessary compensatory measures in order to ensure that the overall coherence of Natura 2000 is protected. Natural England can provide ecological advice on the adequacy of those compensatory measures.

1.2 Position at the close of examination

1.2.1 NNSSR SAC

Upon the close of examination Natural England advised that sufficient baseline evidence had been provided to inform an assessment of the impacts to North Norfolk Sandbanks and Saturn Reef SAC but disagreed with the conclusions of the applicants' Report to Inform the Appropriate Assessment.

In Natural England's view the proposed levels of cable protection would constitute a lasting and potentially irreversible impact on designated site features, thereby hindering the conservation objectives of the site. Both Sandbank and Reef features within the site are in unfavourable condition. Consequently Natural England cannot be certain that cable protection will not adversely affect the integrity of the site.

Although sandwave levelling had been proposed as a means of reducing the potential requirement for cable protection, Natural England highlighted that there was insufficient evidence to demonstrate that full recovery of the sandbank system is achievable and within all sandbank systems. The applicant had also failed to demonstrate that suitable disposal locations could be identified that would retain the sediment within the sandbank system to allow for its recovery, whilst avoiding impacts to the Annex 1 reef feature.

Natural England advised that the failure to fully assess and address these matters at the time of application would mean that they would need to be resolved by the MMO prior to construction. This would create a considerable risk to the project, and likely to require significant resource post-consent from the MMO and Natural England.

1.2.2 The WNNC SAC

Natural England also advised that there was insufficient evidence provided for The Wash and North Norfolk Coast SAC to allow the SoS to make a robust assessment under Article 6(3) of the Directive and to draw conclusions on the consequences of the proposals beyond reasonable scientific doubt. Consequently, Natural England advised that it could not be certain that there will be no adverse effects on the integrity of this protected site.

The concerns relating to the use of cable protection and the evidence around sandwave levelling were also relevant to this site. It is Natural England's view that the information provided by the applicant for the appropriate assessment does not allow for complete, precise and definitive findings and conclusions capable of dispelling all reasonable scientific doubt as to the effects of the proposed works on the protected area. It should also be noted that the Annex 1 features of Mudflats and Sandflats, Sandbanks, and Reefs are either partly or wholly in unfavourable condition, making them particularly vulnerable to additional impacts.

1.3 Additional Evidence Provided by the Applicant post-examination

The project carried out additional benthic, geophysical and geotechnical surveys and provided updated data and assessment for both SACs. Whilst the evidence identified that the proposals would predominantly impact on sandbank features, it also showed that there are areas of more mixed sediment and Annex 1 reef located along the export cables. These additional data have enabled the Applicant to refine their maximum design scenario for cable protection within the two sites (see Section 3 on proposed mitigation below). Despite the new data, there remains uncertainty as to whether cable burial will be achievable in all areas due specific ground conditions and gaps in the evidence. In addition, there is uncertainty around the placement of cable protection within designated sites in relation to the location of specific more sensitive sub-features. These are more likely to be associated with technically more challenging ground conditions.

In order to address Natural England's outstanding concerns regarding sandwave levelling, the Applicant provided principles on sandwave disposal to give confidence that the sediment would be disposed of in areas of similar particle size and retained within the site. However, it was not clear from their assessment how this would be achieved with sufficient certainty, or if areas would recover and in what timescale that recovery would take place.

The evidence provided in relation to the success of Sandwave levelling was limited with only one project using this methodology in English waters for cable installation. No evidence was presented to demonstrate that sandbanks had fully recovered , that cables had and would remain buried for the lifetime of the project, and that this method was applicable to all sandbank systems. Therefore there are considerable uncertainties in the success of this method achieving the desired outcomes.

Due to deposition sites for Sandwave levelling remaining undetermined, it is unclear if sediment will be retained within the designated site, and how impacts to Annex 1 reef can be avoided during installation.

Although the additional steps taken by the applicant are welcome, the additional evidence and disposal principles do not provide certainty beyond reasonable scientific doubt that the impacts to sandbanks as a result of sandwave levelling are temporary, that the sandbank feature will fully recover, or that the associated sediment disposal areas can be located areas that allow the material to be retained within the sandbank system without adversely impacting Annex 1 reef features.

1.4 Additional Mitigation Proposed by the Applicant post-examination

The additional surveys have enabled the Applicant to refine their maximum design scenario in relation to the volume of sandwave clearance and cable protection required. This refinement is welcome, and Natural England would encourage all projects to undertake this level of detailed assessment in determining their Maximum Design Scenarios (MDS) at the time of Application. Based on this, cable protection estimates have been reduced from 10% to 6% of cable length in both sites, with NNSSR reduced from 497,400 m^2 to 418,440 m^2 and WNNC from 46,200 m^2 to 27,720 m^2. Similarly, Sandwave clearance volume in WNNC has reduced from 132,737 m^3 to 48,000 m^3.

Natural England welcomes this refinement of the cable protection estimates and any reduction in the

overall volume of cable protection is positive. However this reduction does not remove the impact. Cable protection will remain in place for at least 25 years, and will impact on the sandbank (and reef) feature for that time, possibly permanently due to the uncertainty of whether it can be removed and the potential impacts of removal at decommissioning.

In addition the project has indicated that it is committed to ensuring disposal of sediment in areas of similar particle size to ensure minimising impacts of disposal and retention of sediment within the site. Whilst Natural England welcome this commitment, we are not clear if/how this will be achieved in practice. This should be clarified in order to avoid problems prior to construction.

Natural England note that it is unclear how the proposed revisions will be secured. We recommend that the proposed change to project parameters and methodologies are fully secured within the DCO/dML where appropriate and that a 'Schedule of Mitigation' is provided and agreed, which clearly sets out all of the mitigation measures.

Overall, whilst the additional work undertaken to refine project parameters is very welcome and serves to reduce impacts, Natural England's overall position regarding AEoI remains unchanged.

1.5 Additional Measures that could Avoid/Reduce/Mitigate impacts

Natural England notes that the EC Guidance[1] highlights that a proposal put forward under Article 6 (4) should be *'the least damaging for habitats, for species and for the integrity of the Natura 2000 site, regardless of economic considerations, and that no other feasible alternative, exists that would not affect the integrity of the site.'*

To assist the SoS in this regard we are providing advice in this section on potential alternative measures that may help avoid/reduce/mitigate the impacts of the proposed development and we feel therefore warrant consideration.

1.5.1 Avoid

We note that at NNSSR it may be possible to identify an alternative cable route that avoids or minimises interaction within the designated site. It is suggested that this has not been considered due to technical feasibility and economic considerations. The EC Guidance makes it clear that "*the least damaging option should be considered regardless of economic constraints*. We recommend the Applicant provide more detail on technical feasibility of this option for the SoS's consideration.

We note that the location of the current grid connection point means that impacts to inshore designated sites cannot be avoided.

1.5.2 Reduce

By using High Voltage Direct Current (HVDC) transmission system rather than an High Voltage Alternating Current (HVAC) there is the possibility to reduce the number of cables, which would mean a

[1] https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf

reduction in impact from installation and cable protection. However, to achieve this there may need to be a commitment to remove the phased build option from the project design envelope. Removal of redundant infrastructure along the export cable would also help to reduce the number of cable crossings required and therefore the amount of cable protection required.

1.5.3 Mitigate

A commitment to surface-laid cables and the use of marker buoys would remove the need for cable protection altogether. This has been achieved for the Lincs Offshore Wind Farm in The Wash and North Norfolk Coast SAC and is currently also being employed by The Wash Harbour Masters to protect the Race Bank offshore windfarm cables.

1.6 Compensatory measures

As stated above (Section 1.1), under Article 6(4) of the Habitats Directive, the project may be permitted if the Secretary of State is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest. Prior to submission of their response to the further information request, the applicant presented a range of compensation options to Natural England, who provided advice on the potential for each option to deliver like-for-like compensation (see letter submitted to PINS on 17th February 2020). During these discussions, Natural England advised the applicant that presenting a range of options in their final submission would be appropriate given the complexities and uncertainties involved in delivering each one successfully, and that a 'package' of compensation options may be a more appropriate solution. Ultimately, the applicant decided to propose two options for the loss of Sandbanks: 1. Removal of marine litter (with specific reference to discarded fishing gear); and 2. Creation/improvement of blue mussel beds within WNNC SAC. We therefore provide the SoS advice on these proposals.

1.6.1 Removal of marine litter

The applicant has established the nature and extent of the damage to the sandbank feature from both cable protection and sandwave clearance in both SACs. Whilst Natural England acknowledges the wider marine benefits that removal of litter could provide, there is little evidence of the impact of litter on the form and function of marine features and therefore this has not assessed or quantified as part of the conservation objectives of designated site features. Consequently it is unclear if/how removal of marine litter would compensate for the impacts to sandbanks as a result of the proposed development, achieving overall coherence of the Natura 2000 network.

Natural England notes that the location of the proposed measures are within The Wash and North Norfolk Coast SAC and not within the North Norfolk Sandbanks and Saturn Reef SAC.

1.6.2 Creation/improvement of blue mussels

Although the Applicant is proposing the creation/improvement of blue mussel beds within WNNC SAC, it is unclear if the Applicant is referring to the intertidal or subtidal area.

Within WNNC SAC '**Intertidal** Biogenic reef: Blue mussel beds' are a sub-feature of the Annex 1 Reef feature. Consequently, proposals to create or enhance blue mussel beds in the intertidal area would

enhance or increase the extent of Annex 1 Reef, but would not directly compensate for impacts to subtidal Sandbank features.

Blue mussel beds occurring in the **subtidal** area of WNNC are considered to be a component community of the sandbank feature (under the 'Distribution: presence and spatial distribution of biological communities' attribute) and are not identified as a sub-feature. It would therefore difficult to demonstrate that this type of enhancement would directly compensate for the impacts to the sandbank feature.

It should also be noted that the Conservation Advice for NNSSR SAC makes no reference to blue mussel beds. Therefore enhancement of this reef feature could not be considered as compensation in the context of NNSSR sandbank feature.

In terms if efficacy, whilst the seeding of mussel beds has occurred in other areas of the UK, it is unclear if beds could be established in a site like the WNNC and maintained in the long term.

1.7 Summary of compensation options

It is unclear if the measures proposed would be sufficient to compensate for the impacts to sandbank features arising as a result of the application, and therefore it is not clear that the overall coherence of the Natura 2000 network will be maintained.

The efficacy of the proposed measures in delivering measureable outcomes remains in question.

Whilst both options could be started before the impact to sandbanks takes place, it is unclear if they could deliver before loss occurs.

The Applicant is proposing a 1:1 compensation ratio. EC Guidance[2] states that *"compensation ratios of 1:1 or below should only be considered when it is demonstrated that with such an extent, the measures will be 100% effective in reinstating structure and functionality within a short period of time"* the uncertainties associated with these measures therefore cast doubt over the suitability of this ratio.

An Appropriate Assessment should contain "*complete, precise and definitive conclusions capable of dispelling all reasonable scientific doubts as to the effects of the proposed works on the protected area*". The failure to provide this leads to wider margins of uncertainty. This should be considered alongside the uncertainties associated with proposed compensatory measures when determining an appropriate ratio.

1.8 Additional Considerations.

Although not part of the SoS's request, Natural England wishes to highlight outstanding concerns regarding Annex 1 reef, specifically that the potential impacts to reef have not been sufficiently assessed or mitigated for in either SAC.

[2] https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf p.18

2. Special Protection Areas (SPAs)

A number of protected sites and species were identified by Natural England as being at risk of significant impact from this development, including kittiwake, gannet, razorbill and fulmar from Flamborough and Filey Coast (FFC) Special Protection Area (SPA). The SoS request specifically focussed on kittiwake at FFC SPA, but Natural England reiterates that due to the issues raised below on the baseline data and analysis, other sites and features are also likely to be negatively impacted by this development alone and in-combination.

2.1 Position at the close of Examination

Upon the close of the examination, Natural England's advice remained that there was insufficient baseline information provided to enable the SoS make a robust assessment under Article 6(3) and to be certain about the consequences of the proposals beyond all reasonable scientific doubt (See Section 1.1 for information on Article 6(3) assessment). Subsequently, Natural England advised that it could not be certain that there will be no adverse effects on the integrity of FCC SPA through impacts to the features of kittiwake, gannet, razorbill, fulmar and seabird assemblage, either alone or in-combination with other plans and/or projects.

Further to this, Natural England highlighted that the in-combination total of collision mortality across consented plans/projects had already exceeded levels which were considered to be of an Adverse Effect on Integrity to Kittiwake at FFC SPA, and that any additional mortality arising from these proposals would therefore be considered adverse.

2.2 Additional Evidence Provided by the Applicant post-examination

The original data used in their assessment was for April 2016 to November 2017, giving 20 months in total. There is only one year of data for the December to March period, meaning these four months had not been adequately characterised.

Natural England reviewed a report that presented outputs from an additional four surveys which took place in January, February and March 2019 (with two surveys undertaken in February). The dates and exact timings of these surveys have not been provided.

Whilst additional survey effort is welcome it should be noted that the intention is for surveys to be undertaken concurrently, over a minimum of 24 months, whereas these surveys were undertaken across multiple years thereby reducing the confidence in the data set. It is known that there are natural inter-annual population differences which are likely to skew the datasets, hence the need for concurrent surveys over more than one consecutive year. Although the additional information increases the survey coverage, there remains only one December count, which will affect both displacement and collision estimates. Based on the original December to March dataset for 2016-17, December was the month of peak occurrence in this period for kittiwake, gannet, herring gull, guillemot, razorbill and fulmar.

Whilst a summary of this new survey data has been provided as a separate report, an updated and complete assessment of collision risk or displacement had not been undertaken. Therefore the SoS

would need to base his Article 6(3) assessment on the original assessments provided in support of the application, which are incomplete and do not contain clear, precise or definitive findings and conclusions. Even if this updated assessment had been provided, uncertainty would remain due to the missing month and the lack of concurrency.

Consequently, Natural England's position on the baseline data, and assessments derived from that data remains unchanged. Natural England cannot be certain, beyond all reasonable scientific doubt, that there will be no adverse effects on the kittiwake, gannet, guillemot, razorbill and seabird assemblage features of the Flamborough and Filey Coast SPA (or other SPAs).

An Appropriate Assessment should contain "complete, precise and definitive conclusions capable of dispelling all reasonable scientific doubts as to the effects of the proposed works on the protected area". The failure to provide this leads to wider margins of uncertainty and may have implications beyond the individual project level (i.e. within the in-combination and cumulative assessments of subsequent plans/projects).

2.3 Additional Mitigation Proposed by the Applicant post-examination

The applicant has committed to a number of mitigation measures that Natural England welcome, including reduction in turbine numbers, a lower rotor tip height, and a reduction in total swept area.

These reductions will result in a proportional reduction in the impact to birds, however the absolute level of reduction is not agreed given the issues with the underlying data as previously discussed. It should also be noted that the measures are unlikely to fully exclude collision impact, so in combination considerations remain relevant. Because of this, Natural England's advice on adverse effects on site integrity remain unchanged.

Natural England note that it is unclear how the proposed additional mitigation will be secured and recommend that the proposed change to project parameters and methodologies are fully secured within the DCO/dML where appropriate. We also recommend that a 'Schedule of Mitigation' is provided and agreed, which clearly sets out all of the mitigation measures.

2.4 Additional Measures that could Avoid/Reduce/Mitigate impacts

Whilst it may be possible to identify additional measures to avoid/reduce/mitigate collision and displacement impacts arising as a result of this proposal, based on the information provided we are not able to quantify the impacts and are therefore unable to determine the adequacy of any potential measures.

2.5 Compensatory measures

Please see section 1.1 for information regarding implementation of Article 6(4) of the Habitats Directive.

The project discussed a number of compensatory measures with Natural England. Given that the key issue for Kittiwake at FFC SPA, based on our understanding of site condition, is decreased productivity, Natural England were keen that measures focussing on increasing productivity, such as prey availability.

Ultimately the project decided that mammalian predator control would be the most appropriate option to take forward. This measure would occur at a maximum of three non-designated island colonies (total area of 500 ha) across the UK, with specific focus on islands off the North-west of Scotland.

Natural England does not agree that sufficient evidence has been presented by the applicant to demonstrate that this option would effective compensation for kittiwake. Kittiwake nest on cliffs and they are not known to be at risk from mammalian predators, which have been shown to especially target ground-nesting species such as puffin. There has been some success demonstrated for mammalian predator control on ground-nesting species, but none for kittiwake. Additionally, the locations identified for this measure are not within the range of the FFC SPA population, or even the greater regional population, and would therefore not be effective in restoring the overall coherence of the network.

Given that it is unclear how many kittiwake are being compensated for, how the project intends to quantify the success of the measure, the lack of evidence for the potential effectiveness of such a measure, and the distance of the measure from the FFC population, Natural England does not agree that mammalian predator control would be a suitable compensation option for kittiwake at FFC SPA.

Natural England also highlights that any proposals to implement measures within other countries would need involvement from their Relevant Authorities (i.e. Marine Scotland) and advisory bodies.

2.6 Additional Considerations

While the SoS request focussed on kittiwake from FFC SPA, Natural England's position is that the inadequate baseline data means that it is not possible to rule out collision/displacement impacts beyond all reasonable scientific doubt, to multiple species at multiple sites.

3. Marine Conservation Zones (MCZs)

Two MCZs were identified as requiring further consideration by the applicant: Cromer Shoal Chalk Beds (CSCB) and Markham's Triangle (MT).

Natural England welcomes the applicant's commitment to removal of all infrastructure from Markham's Triangle MCZ. As such, we agree that an assessment under Section 126(7) of MCAA for this site is not required as no direct impacts will occur on the site, and indirect impacts – for example, dispersal of sediment onto the site – will not be of a sufficient level to hinder the conservation objectives of the site.

Natural England note that it is unclear how this revised proposal will be secured and recommend that the proposed change to project parameters and methodologies are fully secured within the DCO/DML where appropriate.

3.1 Position at end of Examination

Upon the close of examination, Natural England remained concerned about the impacts to the site

features of CSCB from the creation of eight extensive Horizontal Directional Drilling (HDD) exit pits and/or trenching in the nearshore area and the potential for additional cable protection in these areas.

Consequently Natural England advised that a significant impact on the features of CSCB MCZ could not be ruled out and that an assessment under Section 126(7) of MCAA was required.

3.2 Additional Mitigation Proposed by the Applicant post-examination

Total cable protection estimates have also been reduced from 10% to 6% of the cable length. However, concerns of significant impact to site still remains due to uncertainties on the impacts of any cable protection in terms of long-term changes to sediment movement. No changes have been proposed to the HDD exit pits.

3.3 Additional Measures that could Avoid/Reduce/Mitigate impacts.

3.3.1 Reduce

Natural England remains unclear as to why eight HDD exit pits are required when the maximum design scenario is for six cables to be used. A reduction in the number of cables would reduce the amount of impact to CSCB MCZ, by reducing the amount of cable protection required as well as the number of HDD exit pits. We have question whether this could be achieved by using High Voltage Direct Current (HVDC) transmission system rather than an High Voltage Alternating Current (HVAC) and/or by removing the phased build option from the proposal.

3.3.2 Mitigate

A commitment to surface-laid cables and the use of marker buoys would remove the need for cable protection in subtidal areas altogether.

3.4 Measures of Equivalent Environmental Benefit (MEEB)

The Applicant has proposed the measure of litter removal, as described for one of the SAC sandbank compensation options, as an option for MEEB at Cromer Shoal Chalk Beds MCZ. Whilst there is currently no guidance available for MEEB in MCZs, the same concerns apply as for compensation in SACs. Specifically, there is little evidence of the impact of litter on the form and function of marine feature and it is unclear if/how removal of marine litter would compensate for impacts to the MCZ features.

4. Overarching Comments

4.1 Consenting considerations

4.1.1 Decommissioning feasibility

One of the key issues for impacts to both NNSSR and WNNC SACs is the impact of cable protection on Sandbanks. The Applicant has determined this to be of a 'long-term temporary impact due to their commitment to removal of any cable protection at decommissioning. Natural England notes that successful removal of cable protection has not yet been adequately demonstrated, or if removal after 25+ years would assure the recovery of the site to pre-impact levels or indeed result in a greater overall impact to the site due to adaptation of habitats to the cable protection.

4.1.2 Securing mitigations

A number of the mitigations proposed by the Applicant have not yet been secured in the DCO/DMLs, which is necessary to ensure they are carried out sufficiently or alternatives pursued should they not be successful. These mitigations also include agreeing an In Principle Monitoring Plan that will clearly define the monitoring requirements – and the rationale behind them – for all receptors likely to be impacted by the development.

4.1.3 Recording Changes to assessments

During the examination process the Applicant supplied a high volume of additional information and has subsequently made further revisions. Consequently, the information presented in the Environmental Statement no longer reflects the current position of the project. Given that the ES and HRA are regularly referred to as part of the post consent/condition discharge phase of a project, there is a need for the final updated version of the assessments to be made clear for future reference.

4.2 Consenting Implications for this Project and Future Developments

Natural England highlights the following risks that would need to be addressed should the Application be consented, based on the information presented both at the time of application and subsequently:

- Where NSIP projects at the consenting phase have not been able to mitigate, reduce, avoid and compensate to a satisfactory level for known impacts, and to take account of uncertainties, then this will impair Natural England's ability to advise on subsequent projects, including on the scale of impacts and likely success of any mitigation/compensation measures where there is an in-combination impact.

- It should be noted that if uncertainties about the impact of the development are not fully resolved at the time of consenting, there is a risk that there will be considerable project delays prior to and during construction whilst due process is followed and these are finally resolved. The Applicant/developer must accept this consequence at their own risk.

- Based on evidence from previous offshore wind farm projects where there were unresolved issues post-consent, a significant level of resource was required to provide statutory advice. This is disproportionate to the resource required by projects which have in accordance with PINS guidance, resolved issues before submitting their application.

- As set out in the PINS guidance[3] NSIP applications should be "front-loaded". Therefore, going forwards, it remains our view that lessons should be learnt to ensure that the current Hornsea Project Three situation can, and will be, avoided. An applicant should therefore ensure that all of the relevant data is collected and discussed in detail as part of the evidence plan process. Doing this will help ensure that, if required, Article 6(4) derogations options can be discussed prior to application submission, and appropriately secured.

[3] https://www.gov.uk/government/publications/guidance-on-the-pre-application-process-for-major-infrastructure-projects

Yours sincerely,

Emma Brown
Yorkshire and North Lincolnshire Area Team

E-mail: Emma.Brown@naturalengland.org.uk

Date: 14 February 2020
Our ref: Hornsea Project Three

Department for Business, Energy & Industrial Strategy
1 Victoria Street
London
SW1H 0ET

Natural England,
Lateral, 8 City Walk
Leeds
LS11 9AT

BY EMAIL ONLY

Dear Sir/Madam,

Summary of Natural England's advice to Hornsea Project Three re. Secretary of State's Request for Information (27th September 2019)

In the Secretary of State's (SoS) Request for Information letter to Hornsea Project Three on 27th September 2019, Ørsted were asked to engage with Natural England in order to develop measures to mitigate impacts and examine potential compensation measures for several designated sites and their features.

Consequently, Natural England have engaged with the Project over the past four months through multiple meetings, a two-day workshop, and weekly catch up calls:

Date	Meeting type and topic
16th Oct 2019	Telecon to discuss the Scope of Work
8th Nov 2019	Telecon to discuss NE position at end of Examination and outstanding issues
13th Nov 2019	Telecon to discuss NE position at end of Examination and outstanding issues
15th Nov 2019	Telecon to discuss how to progress
22nd Nov 2019	Weekly catch up call
29th Nov 2019	Weekly catch up call
6th Dec 2019	Weekly catch up call
11th Dec 2019	Meeting with MMO and Project Team to discuss impact and mitigation
12th Dec 2019	Workshop with MMO and Project Team to examine Compensation options
18th Dec 2019	Weekly catch up call
14th Jan 2020	Weekly catch up call
23rd Jan 2020	Weekly catch up call

28th Jan 2019	Telecon with RSPB and Project team to examine Kittiwake compensation proposals
30th Jan 2020	Weekly catch up call
4th Feb 2020	Weekly catch up call
12th Feb 2020	Weekly catch up call

During this time, Ørsted provided a range of updated impact assessments, potential mitigation measures and compensation measures. For transparency, we attach our written advice which summarise and reflect the development of our advice during the calls and meetings listed above. These are attached in Annex 1-9.

	Response topic	**Date sent**	**Page**
Annex 1	Clarification of NE's position to Ørsted regarding SoS letter	25th Oct 2019	3
Annex 2	Summary of NE advice at end of examination	5th Nov 2019	7
Annex 3	Comments on Supplemental Ornithological Data Report	8th Nov 2019	32
Annex 4	Comments on updated MCZ assessment for Markham's Triangle MCZ and initial list of compensation measures	29th Nov 2019	37
Annex 5	Advice on Updated MCZ assessment	10th February 2020	42
Annex 6	Advice on Updated Ornithological Mitigation Scenario	11th February 2020	47
Annex 7	Advice on Sandwave Disposal Principles	11th February 2020	50
Annex 8	Advice on Benthic Mitigation (Cable Protection in MPAs and Cable Engineering Site Specific Surveys)	12th February 2020	54
Annex 9	Advice on Sandbank and Ornithology Compensation Measures	12th February 2020	58

Please note, Natural England intend to review the suite of documents submitted by Ørsted to the SoS and may provide further comment on these.

If you have any questions relating to this letter please contact me using the details below.

Yours faithfully,

Katherine Nisbet
Marine Development Adviser
Katherine.Nisbet@naturaengland.org.uk
Tel: [redacted]

Annex 1

Date: 25 October 2019
Our ref: Hornsea Project Three

Andrew Guyton
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral, 8 City Walk
Leeds LS11 9AT

BY EMAIL ONLY

Dear Andrew,

Natural England notes that on the 27th September the Secretary of State (SoS) wrote to Ørsted to request further information 'in consultation with Natural England' on matters pertaining to the Habitats Regulations derogations and to Stage 2 of the Marine Conservation Zone (MCZ) assessment process.

In order to be as helpful as possible to Ørsted in this regard, we are taking the opportunity to write to you to set out where and how we may be able to assist you in responding to these requests.

Throughout the Hornsea Three examination, Natural England raised a number of concerns regarding the assessment of impacts to designated sites. These concerns, broadly, were as follows:

- Insufficient data to characterise baselines
- Evidence gaps
- Interpretation and analysis of data
- Determination of significance of impacts (scale and extent)

These concerns were not, or, in some instances, could not be satisfactorily addressed through the examination process. Consequently Natural England's advice was that it was not possible to conclude no adverse effect on site integrity for a number of European sites beyond reasonable scientific doubt (including Flamborough and Filey Coast SPA; The Wash and North Norfolk Coast SAC; North Norfolk Sandbanks and Saturn Reef SAC) or that there would not be significant impacts to Marine Conservation Zones (Cromer Shoal Chalk Beds and Markham's Triangle).

As a result of this advice, within the Examination, the Examining Authority asked Natural England to provide advice on compensatory measures (REP4-130 Q2.2.8, Q2.2.45) and Measures of Equivalent Environmental Benefit (MEEB) (REP4-130 Q2.2.47) for the sites outlined. In our response, Natural England set out why we were unable to do so: specifically, that without an improvement to the impact assessments and input from other interested parties it would not be possible for Natural England to provide nature conservation advice on any compensatory measures. Our position on this remains unchanged.

So, while Natural England can provide higher level advice on any compensatory measures Ørsted may

propose, the confidence levels and associated risks in any proposals to fully offset the impacts will depend upon the detail of the project impact assessments. Therefore, we advise Ørsted that it is likely to be beneficial if the impacts assessments could be updated.

Our current advice on the areas outlined in the SoS letter are as follows:

European Designated Sites (SPAs and SACs)

Natural England notes that the SoS makes particular reference to the sandbank feature of both the North Norfolk Sandbanks and Saturn Reef SAC, (NNS SR SAC) and the Wash and North Norfolk Coast SAC (W&NNC SAC); however, we would highlight that Natural England's concerns pertain to additional features within these sites, particularly reef (NNSSR SAC and W&NNC SAC), and large shallow inlets and bays (W&NNC SAC).

Natural England notes that the SoS makes particular reference to the kittiwake feature of the Flamborough and Filey Coast SPA, but would highlight that our concerns also pertain to additional features of this site, including gannet, guillemot, razorbill and the overall seabird assemblage. Within our comments on the REIS, we also highlighted that the incomplete baseline data meant that we could not agree with the conclusions of the Likely Significant Effect (LSE) screening, and therefore did not consider it possible to fully rule out LSE alone or in-combination on a number of additional designated sites.

In relation to the questions in the SoS letter pertaining to additional information on the matters set out in regulations 64 and 68 of the Conservation of Habitats and Species Regulations 2017, and regulations 29 and 36 of the Conservation of Offshore Marine Habitats and Species Regulations 2017 the following is noted:

- Natural England cannot propose alternatives, but can advise on the environmental impact of any alternatives Ørsted may propose.

- Natural England does not intend to comment on the IROPI case.

- As set out in its deadline 4 response, the role of Natural England is to provide advice to the competent authority on the effectiveness of any compensatory measures that are proposed and whether they will be sufficient to ensure that the overall coherence of the Natura 2000 network is protected. In order for Natural England to provide this advice (even on a '*without prejudice'* basis) the ecological impacts associated with this development would need to be fully assessed and quantified, and potential measures to avoid, reduce and mitigate those impacts would need to be explored before any potential compensatory measures can be determined. Without this there would be significant uncertainty that any such measures could be deemed appropriate. It should also be noted that provision of compensation in the offshore environment has very little precedent so options will need careful consideration in order to ascertain if they might be suitable. We will however, be happy to consider and comment on any options that Ørsted may wish to propose and may also be able to assist in signposting to relevant guidance on compensatory measures.

Marine Conservation Zones

Natural England notes that the SoS letter makes reference specifically to the impacts of cable rock protection on the subtidal features of Cromer Shoal Chalk Beds MCZ and Markham's Triangle MCZ; however, we would highlight that in order for Natural England to provide comprehensive advice on the request under 126(7) of the Marine and Coastal Access Act 2009, it is necessary to establish the nature and extent of the impacts on the designated sites, including the intertidal features of the

Cromer Shoal Chalk Beds MCZ, and as our submissions during examination stated, we still believe that the assessment undertaken is deficient. Without confidence on the assessment, there would therefore be significant uncertainties associated with any advice we may give under 126(7).

With regard to the SoS's specific requests:

- Natural England is not able to advise on alternative means of proceeding with the project, but would be able to provide advice on the environmental impact of any alternatives Ørsted may propose.

- Natural England does not intend to comment on the case made in relation to the public benefit of a proposal outweighing its environmental impact.

- Natural England's advice on MEEB remains unchanged from the examination, i.e. that in the absence of guidance, discussions on MEEB would need to include Defra, JNCC and the regulators (BEIS, MMO).

- In this instance, as the significance of impacts has not yet been established the requirement for MEEB remains unclear. Natural England's advice would therefore be to address our comments on the MCZ assessments in the first instance. Should any proposals be put forward to address SoS's specific concerns, Natural England would provide advice on the confidence of delivery and associated environmental risks. Please note that the better the assessment, the higher the confidence in the deliverability and reduction of risk associated.

Natural England are content to provide advice to Ørsted in responding to the Secretary of State's request, but note that our availability within the timescales identified is limited. We are therefore keen to understand the nature of any consultations and establish realistic timescales for review and response.

During our conversation on 16th October, it was agreed that Natural England would provide Ørsted with a summary of our advice on Hornsea Three to date, along with a clear indication of what would need to be provided before we could revisit our advice. Our intention is that the combination of the advice outlined above along with this summary will give you a clear indication of where additional consultation with Natural England will be of most benefit to you in providing the information requested.

We are currently working on the summary and are hoping to provide this to you by 25th October.

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Emma Brown
Marine Senior Adviser
Yorkshire and North Lincolnshire Team
E-mail: emma.brown@naturalengland.org.uk
Telephone: 020 8026 8543

Annex 2

Date: 05 November 2019
Our ref: DAS/5267

Andrew Guyton
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral,
8 City Walk
Leeds
LS11 9AT

BY EMAIL ONLY

Dear Andrew,

Hornsea Project Three – Summary of Natural England's position at the end of examination for SACs and MCZs

As discussed in our teleconference on 16th October, Natural England agreed to provide a summary of our position at the end of examination for Hornsea Project Three for outstanding issues. The request was specifically for the sites outlined in the Secretary of State's letter on 27th September, these being:

- The Wash and North Norfolk Coast SAC
- North Norfolk Sandbanks and Saturn Reef SAC
- Cromer Shoal Chalk Beds MCZ
- Markham's Triangle MCZ
- Flamborough and Filey Coast SPA

Natural England has provided a summary of our position, including recommendations to address outstanding issues, for both SACs and MCZs in Annex 1 of this letter.

Please note, we will provide a separate summary for ornithological issues – including Flamborough and Filey Coast SPA – by 8th November. This will include comments on the additional ornithological information provided to BEIS on 31st July.

This advice is being provided as part of Natural England's Discretionary Advice Service, and is in accordance with the Quotation and Agreement made with Ørsted on 10th October 2019 (DAS 5267).

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet

Marine Development Adviser
Katherine.Nisbet@naturaengland.org.uk
Tel: [redacted]

☒ The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role as statutory consultee to the competent authority after an application has been submitted. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours,

Emma Brown
Senior Advisor
Yorkshire & Northern Lincolnshire Area Team

Cc commercialservices@naturalengland.org.uk

ANNEX 1

The Wash and North Norfolk Coast Special Area of Conservation (SAC)

Key issue:

Additional site-specific survey data is required in order to be able to provide a sufficient characterisation of the cable corridor, specifically, to show the location of individual features. Without this, it is not possible to undertake an assessment of the impacts of cable installation, rock protection, or sandwave levelling – or make a determination of the WCS - on those features or for the site overall.

The Wash and North Norfolk Coast SAC		
Features	Large Shallow Inlet and Bay, Sandbanks, Reef,	
Feature condition	A recent condition assessment published on 25th January 2019 has identified the listed features relevant to this application and some of their sub features are now in unfavourable condition as a result of fisheries and OWF cable installation. The mechanisms that are currently in place to ensure recovery are the identification and implementation of fisheries byelaw areas and natural processes for OWFs. It is the duty of competent authority and all Statutory Undertakers (including Ørsted) to ensure no further deterioration will occur in a European Designated as a result of a development/activity[1]	The assessment of impacts to features should take account of current condition, the site's conservation objectives, and demonstrate those activities will cause no further deterioration or impede the recovery of the site.
Baseline Characterisation	Natural England do not consider that sufficient data has been provided within the examination, to undertake a basic characterisation of the cable corridor within the Wash and North Norfolk Coast SAC. From the evidence provided it is not possible to establish which features are present, and consequently it is not possible to conduct a robust appropriate assessment.	High resolution geophysical surveys coupled with ground-truthing through DDV and/or grabs in order

[1] Habitats Directive: Under Article 2 competent authorities have a duty to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.

	For example, whilst it is prudent to use all available data to support site specific survey, it is not appropriate to rely on point data from 10s of km away from the cable corridor. Additionally, the data collected within the site are not conclusive, i.e. From the drop down video survey that was provided within the examination, Natural England considers that more consolidated sediments and epifauna within the video stills could be representative of Annex I Reef features and not Annex I sandbanks subfeatures along the Hornsea Project three cable route, especially in areas near the coast (see Annex D1 of our Written Reps). Natural England also highlights the importance of the use of a 'common currency' approach to facilitate in combination and cumulative assessments, not just for this project, but for future plans and projects that may need to take account of Hornsea 3 in their assessments. See NE Annex D7 to our Written Reps	to sufficiently characterise the cable corridor and to conduct a robust appropriate assessment. Survey methodology and data analysis needs to be of sufficient quality while also ensuring use for in-combination and cumulative assessments.
Project Parameters	The project parameters have been defined using a Rochdale Envelope approach and are consequently broad to allow for a range of factors including variability of ground conditions. However, the level of uncertainty presented when the Rochdale envelope is so wide does not lend itself to interrogation through the Habitats Regulations process. Key factors such as the locations of dredge disposal sites are not provided and the need for boulder clearance and pre-grapnel runs has not been explored. The lack of specificity of the project parameters within the site, along with the lack of detail as to which features are present within the cable corridor means that a number of different worst case scenarios are possible, depending on which combination of activities happen and in which locations they occur. Therefore it is Natural England's view that it is not possible, based on the information provided, to clearly identify and assess WCS with certainty.	Once an appropriate level of ground works have been completed (see 'Baseline Characterisation' section above) the project parameters will be able to be clearly defined and a realistic WCS to be tested.

	Therefore there remains considerable uncertainty in the interest features present; the under lying geology and the implications this may have on cable burial; the need for remediation works including cable protection and what they may be; and the scale of any further impacts to the designated site features over the life time of the project.		
Assessment of impacts	Site Preparation work (excl. sandwave levelling)	Benthic impacts from site preparation work along the cable corridor were not included were not considered within the RIAA, such as: grapnel run, UXO clearance, boulder clearance. Therefore further consideration should be given to the impacts of these activities on site features.	These need to be considered so that cumulative impacts can be properly assessed. Again, this will depend on sufficient evidence on the ground conditions in order to make a realistic assessment.
	Sandwave levelling	<u>Scale of Impacts:</u> Within the application the assessment of potential impact tends to consider the footprint of the activity relative to the total area of sandbanks within the site. However, North Norfolk Sandbanks is a sandbank system comprising a number of Annex 1 sandbanks. The assessment should consider the potential impact on a sandbank at an individual level (in this case Ower and Leman) and in turn, how this could affect their contribution to the overall integrity of the site feature. <u>Recovery:</u> Sandwave clearance activities have only been proposed and undertaken relatively recently and consequently there is limited evidence on how well this approach works, whether cables remain buried thus avoiding the need for additional cable protection, and how quickly dredged areas recover. Although Ørsted provided evidence from Race Bank that areas affected by sandwave levelling had begun to recover - which is encouraging – it is insufficient to demonstrate that features would recover to a point of favourable condition	The scale of impact and the recoverability of Annex 1 Sandbanks to sandwave levelling needs to be fully defined and assessed against the conservation objectives of this site.

		as defined in the conservation objectives for the site and over what timescale this recovery would take place. The assumptions on recovery are also predicated on the ability to identify suitable disposal locations (see below). The main factors that are considered to influence the recovery potential (i.e. the mechanism and speed of recovery) of the levelled sandwaves are: • The dimensions of the dredged area, particularly the width and depth of the dredged channel relative to the overall sandwave height, and the alignment of the dredged channel relative to the crest axis; and • The degree of sediment mobility at the dredge location, which is in turn controlled by the environmental forcing conditions and water depth. It would therefore be useful to ensure any assessment of the offshore sites take this into consideration and we believe that the relevant site information is available to undertake such an assessment. Understanding these factors would also inform assessment of hydrological process impact within site integrity tests. We note the conclusion of "high confidence that the seabed will recover to a new natural equilibrium state within a timescale of months to years." We would suggest that approaching a new equilibrium may not be in accord with restoration of the site, if that new equilibrium is outwith the sediment composition or biological communities expected from the designated feature. In addition no consideration has been given to potential remediation plan using proven techniques	
	Deposition of sediment	<u>Sandbanks</u> The volumes of sediment that would be potentially removed from the sandbank system are significant, and a loss of this sediment from the system would potentially lead to an adverse effect on site integrity.	Providing disposal locations and evidence of the likelihood of sediment remaining within the sandbank system - and not

		Although the RIAA makes the assumption that sediment will be retained within the sandbank system thereby allowing for potential recovery, the disposal locations have not yet been identified so this has not been secured as part of that application. In identifying suitable disposal locations a range of factors would need to be considered. For example, aspects such as particle size and sediment type can have a bearing on dispersal rates, therefore the composition of the sediment would need to be considered and the impact assessed. <u>Reef</u> Annex 1 reef is potentially sensitive to increases in suspended sediment and therefore the impact of sediment disposal on the reef feature needs to be fully considered within the appropriate assessment. As the disposal locations have not been identified within the application, it is not possible to demonstrate that the sediment can be retained within the sandbank system whilst avoiding deposition on reef or areas managed as reef. Consequently it is not possible to rule out the potential for AEoI on either feature beyond reasonable scientific doubt.	impacting the reef feature resulting in AEoI- will help to provide certainty in the assessment. Additionally, the sediment at disposal locations should be 95% similar to removal location.
	Cable Protection	<u>Nature of impact</u> After viewing the evidence provided throughout the examination, Natural England's view remains that the proposed decommissioning of cable protection (based on the methods currently available) is not likely to make good any impacts on designated site features arising from its use, and in some cases may result in additional impacts. We therefore do not agree that this activity represents a temporary and/or reversible impact on site features. The project requires up to 46,200 m^2 cable protection within the site. The likely interaction of cable protection with each feature cannot be established due to a lack of information on ground conditions and this - along with the wide project design scenarios - gives a large range of potential scenarios, meaning the impacts cannot be quantified as a worst case with certainty.	By undertaking suitable geophysical and DDV surveys, more certainty will be provided wrt the requirements for cable protection. This will allow for a realistic prediction of both spatial and temporal impacts to Annex 1 features.

		Since the impact on each feature cannot be quantified, cable protection is not considered to be inconsequential/de minimis and represents a persistent/permanent impact on the designated site. Consequently Adverse Effect on Site Integrity cannot be ruled out. <u>Sandbanks</u> The use of rock protection in areas of Annex 1 sandbank will have a lasting impact on the feature. Natural England accepts that sandbanks are a dynamic feature and that therefore the precise nature of this impact will be dependent on the ground conditions of the site. Furthermore, the impact of rock protection should not only be considered in terms its extent or direct footprint but in how its installation may affect other attributes of the sandbank feature. In order to establish the overall impact a full assessment should be made against each of the relevant attributes of this feature as described in its conservation advice and not just focus on the footprint or extent of the rock protection. <u>Reef</u> Whilst submissions made by Ørsted during the examination highlight the possibility of *Sabellaria spinulosa* reef forming on rock protection, we do not consider that the formation of *Sabellaria spinulosa* on an artificial/man made structure would meet the conservation objectives of the site as set out in the conservation advice. Furthermore, we do not consider that the evidence provided is sufficient to demonstrate with certainty that this colonisation would/could occur which further emphasises the need to consider the impact of cable protection on reef to be long term/permanent in nature.	
	Phased Build	Natural England notes from [REP - 178] that it is not anticipated that features would recover both between the different stages of the build (i.e. site prep, construction, operation, decommissioning) or between the phases of a potential phased build. This needs to be reflected in the Appropriate Assessment. For example, if a feature (e.g. a	

		sandbank) is impacted by site preparation works and throughout construction, and then again in a phased build scenario, the timeframe over which it is recovering could be extended over a much longer timeframe.	
	Operation and Maintenance	See Natural England advice on cable protection Deadline 7 Annex	
	Significance of Impact	Natural England does not agreed with the level of the significance given to impacts within N2K sites. The matrices used are appropriate for Environmental Impact Assessment Regulations, but not for the Habitat Regulations. Full consideration should be given to the conservation advice packages for the site, including advice on operations, sensitivity of the features to change, favourable condition status of site and features, and current case law. Please see Deadline 7 Annex D were we consider that even small losses can be significant. It is not simply about the extent of the impact compared to the whole of the SAC and/or feature.	
Mitigation		Any mitigation identified needs to be secured in the relevant DML(s). <u>Annex I sandbanks</u> Whilst at Para 11 of Annex D4 [REP1- 217] we suggested some mitigation that has been used for other industries the only mitigation that has been presented to reduce the impacts has been the potential removal of cable protection at the time of decommissioning, and the 'intelligent disposal' of sediment to enable the material to be retained within the sandbank system. As set out above, Natural England does not consider it possible to decommission cable protection in a way that would enable recovery of the feature, and in the case of sediment disposal, we do not consider that the evidence has been provided nor appropriate disposal locations secured to facilitate this. As set in our response to Deadline 6 the Cable Installation Plan and the conditions with that including the use of an ECOW may ensure the real time compliance with the requirements of the DML condition documents, but it doesn't address the current LSE	Consider a reduction in the number of cables required. (N.B this could be through a commitment to HVDC) Provide geophys/ geotechnical data for the cable corridor up front. This would enable more accurate assessment of the likely cable protection requirement and therefore more accurate assessment of impact.

		sufficiently to exclude an adverse effect on integrity and meet the requirements of the habitats directives i.e. the presence/use of a ECOW is not mitigation <u>Annex I reef (biogenic and geogenic)</u> Whilst micro-siting is commonly put forward as a mitigation measure to avoid impacts to reef, in order to reach a conclusion of no adverse effect of the reef feature it needs to be demonstrated that it is possible to microsite around occurrences of reef within the cable corridor. Based on the information provided to date it is not possible to do this.	This (in conjunction with the above) may identify options for siting the cables in softer sediment.
Restoration		No consideration has been given to any remediation plan using proven techniques for any Annex I habitat. Natural England does not believe that there is any remediation and/or restoration that can be undertaken to restore reef feature to any pre impact state. Needs to be clearly set out in a remediation plan (DML condition secured).	

North Norfolk Sandbanks and Saturn Reef SAC

Key issues:

There remains considerable uncertainty in the interest features present; the underlying geology and the implications this may have on cable burial; the need for remediation works including cable protection; and the scale of any further impacts to the designated site features over the life time of the project.

Additional site-specific survey data is required in order to determine the location of individual features. Without this, it is not possible to undertake an assessment of the impacts of cable installation, rock protection, or sandwave levelling – or make a determination of the WCS – on those features and against the conservation objectives for the site. This should include consideration of all relevant attributes, direct and indirect impacts, and temporal nature of impacts.

We also recommend that the Annex 1 reef (Saturn Reef) be avoided completely given the potential for permanent impacts, lack of evidence on recovery, it's restore objective, and it's ongoing management as a reef to enable recovery. Disposal sites should also be identified and further work undertaken to demonstrate that sediment can be retained within the sandbank system.

North Norfolk Sandbanks and Saturn Reef SAC		
Features	Sandbanks, Reef	
Feature condition	The latest view on condition of both the sandbank and reef features of the site is that they are in unfavourable condition and need to be restored to favourable. Restoration requires an overall reduction, or removal, of pressures associated with human activities that cause impacts to the features' extent, distribution, structure and function, delineated by both substratum and biological communities. As such, any human activities which can cause pressures resulting in changes to substratum or biological communities to these features may present a risk to the site's restoration and further hinder the conservation objectives for the site. <u>Reef</u> The SCNBs advice remains unchanged that impacts to *Sabellaria spinulosa* reef must be avoided during site preparation work, and cable installation. And minimised as much as possible during the life time of the project, recognising that reef may develop where it has not previously been found. The Saturn Reef area is currently managed to enable recovery of the reef as it is	The assessment of impacts to features should take account of current condition as a starting point, and demonstrate those activities will cause no further deterioration or impede the recovery of the site. Assessment should be based on the conservation objectives for the site.

	recognised as a key area for reef development in this region. These management aims should not be compromised. <u>Sandbank</u> We note that there is no expectation for the applicant to demonstrate recovery of the site as a whole. It is, however, necessary for the applicant to demonstrate the level of risk that their proposed operations will present to the restoration of the sandbank, for both extent and distribution, and structure and function. As a minimum, we would expect to see proposed mitigations that would not impede recovery of features.	Conservation advice for this site, including conservation objectives, can be downloaded here: http://archive.jncc.gov.uk/default.aspx?page=6537
Baseline Characterisation	Natural England do not consider that the baseline surveys provided are sufficient to support an appropriate assessment. NE considered that the initial survey effort was sufficient to provide a basic consent characterisation of the development area, and that this level of information remains suitable at an EIA scale and for an initial LSE screening, recognising that further surveys will be required should consent be granted. However, Natural England highlights that the levels of information/evidence/data required to understand the potential scale of the impacts of a proposal on designated site features often go beyond those that would be required to characterise the development area. Especially where an Adverse Effect on Integrity cannot be ruled out and/or consideration is required in relation to the suitability of any proposed mitigation measures to minimise the impacts to an acceptable level. Often, the tools and techniques required to undertake a development activity, such as cable installation, can vary significantly depending on the ground conditions, and consequently the impacts arising from the installation can also vary. In some cases, the requirements in a particular location may be easily determined from a fairly basic level of site characterisation. For example, where exposed bedrock is identified it may be relatively easy to confirm the techniques required for installation and to consider the impacts on that feature. However, in a sediment habitat, the techniques required may depend not only on the surface substrate/biotope, but also on the underlying geology, and therefore further	Further ground works are required to determine the extent and distribution of ground conditions – specifically the underlying geology – which will help to reduce uncertainty when assessing impacts of activities. Survey methodology and data analysis needs to be of

		investigative work may be required in order to establish the likely installation method before the impacts could be considered and/or mitigated. Natural England also highlights the importance of the use of a 'common currency' approach to facilitate in combination and cumulative assessments, not just for this project, but for future plans and projects that may need to take account of Hornsea 3 in their assessments. See Annex D7 to our Written Reps	sufficient quality while also ensuring use for in-combination and cumulative assessments.
Project Parameters		The project parameters have been defined using a Rochdale Envelope approach and are consequently broad to allow for a range of factors including variability of ground conditions. However, the level of uncertainty presented when the Rochdale envelope is so wide does not lend itself to interrogation through the Habitats Regulations process, where uncertainty is not suitable unless a highly precautionary approach is used. Key factors such as the locations of dredge disposal sites are not provided and the need for boulder clearance and pre-grapnel runs has not been explored. The lack of specificity of the project parameters within the site, along with the lack of detail as to which features are present within the cable corridor means that a number of different worst case scenarios are possible, depending on which combination of activities happen and in which locations they occur. Therefore it is Natural England's view that it is not possible, based on the information provided, to clearly identify and assess WCS with certainty. Therefore there remains considerable uncertainty in the interest features present; the underlying geology and the implications this may have on cable burial; the need for remediation works including cable protection and what they may be; and the scale of any further impacts to the designated site features over the life time of the project.	Once an appropriate level of ground works have been completed (see 'Baseline Characterisation' section above) the project parameters will be able to be clearly defined and a realistic WCS to be tested.
Assessment of impacts	Site Preparation work (excl.	Benthic impacts from site preparation work along the cable corridor were not included were not considered within the RIAA, such as: grapnel run, UXO clearance, boulder clearance. Therefore further consideration should be given to the impacts of these activities on site features.	These need to be considered so that cumulative impacts can be properly assessed.

	sandwave levelling)		Again, this will depend on sufficient evidence on the ground conditions in order to make a realistic assessment.
	Sandwave levelling	<u>Scale of Impacts:</u> Within the application the assessment of potential impact tends to consider the footprint of the activity relative to the total area of sandbanks within the site. However, North Norfolk Sandbanks is a sandbank system comprising a number of Annex 1 sandbanks. The assessment should consider the potential impact on a sandbank at an individual level (in this case Ower and Leman) and in turn, how this could affect their contribution to the overall integrity of the site feature. <u>Recovery:</u> Sandwave clearance activities have only been proposed and undertaken relatively recently and consequently there is limited evidence on how well this approach works, whether cables remain buried thus avoiding the need for additional cable protection, and how quickly dredged areas recover. Although Ørsted provided evidence from Race Bank that areas affected by sandwave levelling had begun to recover - which is encouraging – it is insufficient to demonstrate that features would recover to a point of favourable condition as defined in the conservation objectives for the site and over what timescale this recovery would take place. The assumptions on recovery are also predicated on the ability to identify suitable disposal locations (see below). The main factors that are considered to influence the recovery potential (i.e. the mechanism and speed of recovery) of the levelled sandwaves are: • The dimensions of the dredged area, particularly the width and depth of the dredged channel relative to the overall sandwave height, and the alignment of the dredged channel relative to the crest axis; and • The degree of sediment mobility at the dredge location, which is in turn controlled by the environmental forcing conditions and water depth.	The scale of impact and the recoverability of Annex 1 Sandbanks to sandwave levelling needs to be fully defined and assessed against the conservation objectives of this site.

		It would therefore be useful to ensure any assessment of the offshore sites take this into consideration and we believe that the relevant site information is available to undertake such an assessment. Understanding these factors would also inform assessment of hydrological process impact within site integrity tests. We note the conclusion of "high confidence that the seabed will recover to a new natural equilibrium state within a timescale of months to years." We would suggest that approaching a new equilibrium may not be in accord with restoration of the site, if that new equilibrium is outwith the sediment composition or biological communities expected from the designated feature. In addition no consideration has been given to potential remediation plan using proven techniques	
	Deposition of sediment	<u>Sandbanks</u> The volumes of sediment that would be potentially removed from the sandbank system are significant, and a loss of this sediment from the system would potentially lead to an adverse effect on site integrity. Although the RIAA makes the assumption that sediment will be retained within the sandbank system thereby allowing for potential recovery, the disposal locations have not yet been identified so this has not been secured as part of that application. In identifying suitable disposal locations a range of factors would need to be considered. For example, aspects such as particle size and sediment type can have a bearing on dispersal rates, therefore the composition of the sediment would need to be considered and the impact assessed. <u>Reef</u>	Providing disposal locations and evidence of the likelihood of sediment remaining within the sandbank system - and not impacting the reef feature resulting in AEoI- will help to provide certainty in the assessment. Additionally, the sediment at disposal locations should be 95% similar to removal location.

		Annex 1 reef is potentially sensitive to increases in suspended sediment and therefore the impact of sediment disposal on the reef feature needs to be fully considered within the appropriate assessment. As the disposal locations have not been identified within the application, it is not possible to demonstrate that the sediment can be retained within the sandbank system whilst avoiding deposition on reef or areas managed as reef. Consequently it is not possible to rule out the potential for AEoI on either feature beyond reasonable scientific doubt.	
	Cable Protection	<u>Nature of impact</u> After viewing the evidence provided throughout the examination, Natural England's view remains that the proposed decommissioning of cable protection (based on the methods currently available) is not likely to make good any impacts on designated site features arising from its use, and in some cases may result in additional impacts. We therefore do not agree that this activity represents a temporary and/or reversible impact on site features. The project requires up to 497,800 m^2 cable protection within the site. The likely interaction of cable protection with each feature cannot be established due to a lack of information on ground conditions and this - along with the wide project design scenarios - gives a large range of potential scenarios, meaning the impacts cannot be quantified as a worst case with certainty. Since the impact on each feature cannot be quantified, cable protection is not considered to be inconsequential/de minimis and represents a persistent/permanent impact on the designated site. Consequently Adverse Effect on Site Integrity cannot be ruled out. <u>Sandbanks</u> The use of rock protection in areas of Annex 1 sandbank will have a lasting impact on the feature. Natural England accepts that sandbanks are a dynamic feature and that therefore the precise nature of this impact will be dependent on the ground conditions of the site. Furthermore, the	By undertaking suitable ground condition surveys, more certainty will be provided wrt the requirements for cable protection. This will allow for a realistic prediction of both spatial and temporal impacts to Annex 1 features.

		impact of rock protection should not only be considered in terms its extent or direct footprint but in how its installation may affect other attributes of the sandbank feature. In order to establish the overall impact a full assessment should be made against each of the relevant attributes of this feature as described in its conservation advice and not just focus on the footprint or extent of the rock protection. <u>Reef</u> The use of cable protection in areas of reef is likely to result in a long term/persistent loss of feature extent. In the application, predicted impacts are only considered to be significant if impacting on existing Annex I *Sabellaria spinulosa* reef (priority habitat). However, (as described above) in response to this feature's unfavourable condition areas of the site have been identified to be managed as/for reef in order to support the restoration of the feature. The placement of rock armour within these areas would, in our view, hinder the restoration of this feature. Whilst submissions made by Ørsted doing the examination highlight the possibility of *Sabellaria spinulosa* reef forming on rock protection, we do not consider that the formation of *Sabellaria spinulosa* on an artificial/man made structure would meet the conservation objectives of the site as set out in the conservation advice. Furthermore, we do not consider that the evidence provided is sufficient to demonstrate with certainty that this colonisation would/could occur which further emphasises the need to consider the impact of cable protection on reef to be long term/permanent in nature.	
	Phased Build	Natural England notes from [REP - 178] that it is not anticipated that features would recover both between the different stages of the build (i.e. site prep, construction, operation, decommissioning) or between the phases of a potential phased build. This needs to be reflected in the Appropriate Assessment. For example, if a feature (e.g. a sandbank) is impacted by site preparation works and throughout construction, and then again in a phased build scenario, the timeframe over which it is recovering could be extended over a much longer timeframe.	

	Operation and Maintenance	See Natural England advice on cable protection Deadline 7 Annex C	
Mitigation		Any mitigation identified needs to be secured in the relevant DML(s). <u>Annex I sandbanks</u> Whilst at Para 11 of Annex D4 [REP1- 217] we suggested some mitigation that has been used for other industries the only mitigation that has been presented to reduce the impacts has been the potential removal of cable protection at the time of decommissioning, and the 'intelligent disposal' of sediment to enable the material to be retained within the sandbank system. As set out above, Natural England does not consider it possible to decommission cable protection in a way that would enable recovery of the feature, and in the case of sediment disposal, we do not consider that the evidence has been provided nor appropriate disposal locations secured to facilitate this. As set in our response to Deadline 6 the Cable Installation Plan and the conditions with that including the use of an ECOW may ensure the real time compliance with the requirements of the DML condition documents, but it doesn't address the current LSE sufficiently to exclude an adverse effect on integrity and meet the requirements of the habitats directives i.e. the presence/use of a ECOW is not mitigation. <u>Annex I reef</u> Based on JNCC reef layer data provided at Deadline 5 NE and JNCC advise that the *Sabellaria spinulosa* area to be managed as reef straddles the Saturn reef area of the cable route. Therefore, we advise that this management area is avoided. If as anticipated the removal of anthropogenic activities enables the recovery of Annex I reef and cabling is permitted within this area there is a high probability that there will be sufficient space to micro-route around the reef features. Therefore, whilst we continue to advocate that the standard mitigation measure/marine licence conditioned to avoid reef features is included in the Projects DML it may not be feasible to do so. To address this the caveat 'where possible' was	

	included, but NE and JNCC have concerns about the increased level of risk to the integrity of the site such a caveat would endorse as there are no parameters to assess and agree what is "possible". We do not consider the proposal to route through 'lower quality' reef to be acceptable, because in terms of restoration of conservation objectives the 'lower quality' reef mentioned by the applicant is still Annex I Reef and contained within area to be managed as reef, with the protection provided by Annex I status. Furthermore whether reef is avoided or not during installation there does remain a risk during O&M cable remediation activities that reef could establish across the cable corridor or nearby areas where remediation activities needed to occur. Accordingly, every effort should be made, with input from the MMO and NE, to minimise the impacts at the time of undertaking the works. Therefore, provision is needed within the DCO, at the time of consent, to enable this to happen to manage down the risks to Annex I habitats. All options will need to be considered by the applicant to ensure that the best environmental option is explored.	
Restoration	No consideration has been given to any remediation plan using proven techniques for any Annex I habitat. Natural England does not believe that there is any remediation and/or restoration that can be undertaken to restore reef feature to any pre impact state. Needs to be clearly set out in a remediation plan (DML condition secured).	

Cromer Shoal Chalk Beds MCZ

Features	Subitdal Coarse Sediment, Subtidal Mixed Sediment, Subtidal Sand, Subtidal Chalk, Peat and Clay Exposures, North Norfolk Coast (Subtidal), Moderate Energy Infralittoral Rock, Moderate Energy circalittorial rock, High Energy infralittoral rock, High Energy circalittoral rock	
Feature Condition	Assessment of a potential operation in any protected area focuses on understanding how the conservation objectives are affected. In practice this mainly relates to understanding how the potential operations affect the designated features. For Cromer Shoal, all features have a general management approach to 'maintain' favourable condition. Whilst the site has a conservation advice package, there has been no condition assessment undertaken. Evidence is being collected in 2019/20 to inform the condition assessment currently planned for 2020/21. However, it is noted that based on the conservation advice package and advice on operations, the cable installation for Sheringham Shoal and Dudgeon OWFs will have impacted the site. However, there is no empirical data to inform the scale and significance of the impacts on the favourable condition of the site. https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UKMCZ0031&SiteName=MCZ&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=	
Baseline Characterisation	Natural England concluded that there is sufficient information in the ES to characterise the broadscale habitats within the site (i.e. the site features) in order to facilitate a WCS assessment of the potential impacts on the site. This can then be refined when further pre-construction monitoring becomes available.	
Assessment of Impacts and significance	The current assessment assumes that a WCS would involve trenching through the MCZ. However, Natural England considers that whilst the impacts from HDD may be smaller in area, they may also be significant depending on the recoverability of the features (i.e Both impacts have the potential to impact different features in different ways). This will be dependent on the scale of the impact and not just extent and permanency of the associated activities including cable and scour protection.	An assessment of all potential operations (i.e. both trenching and HDD) within the site, and impacts on individual features needs to be

	As such, a critical piece of information needed for assessment is the amount of operations expected to occur in each feature. The Applicant has presented figures of the area of each feature within the MCZ which they consider will be impacted by the operations, however there is still some uncertainty about the depth of the layer of sand at the exit pit locations and the potential for other features to be present and/or impacted from the disposal activities; especially in relation to the cofferdams Just because it is small scale impact doesn't mean it is not insignificant. But currently the evidence in relation to this and the amount of cable protection required in the site which would potentially result in a permanent change in habitat is uncertain. The disposal locations have also not been assessed. Issues raised in relation to the RIES are also pertinent for the MCZ in relation to colonisation of cable protection, decommission of cable protection, sand wave levelling and understanding the significance of the impacts in terms of temporary/permanency and recoverability of the site. With a predicted 191200 m2 temporary impact to the MCZ. However, this is not fully linked the conservation objectives of the site and the vulnerability of the features.	undertaken in order to determine the WCS. Assessment of potential disposal locations. Quantify the areas of impact both spatially and temporally, and link this to the conservation objectives of the site and vulnerability of individual features.
Stage 2 MCZ assessment	Should it be determined there are significant impacts on the MCZ features that cannot be addressed through appropriate mitigation measures, then a stage 2 assessment would be required. As highlighted above, Natural England currently unable to provide definitive advice on the significance of the impact on the features of the designated site. There is currently no formal guidance in relation to Measures of Equivalent Environmental Benefit (MEEB) and there and there have been no other cases that have reached this stage. Therefore, should the SoS conclude that MEEB are required, this case would be precedent setting. In the absence of guidance/experience to draw upon, we would recommend that discussions relating to MEEB include input from the SNCBs, Regulatory Agencies (i.e. MMO and BEIS) and Defra.	

Markham's Triangle MCZ

Features	Subtidal Coarse Sediment , Subtidal Mixed Sediment, Subtidal Sand, Subtidal Mud	
Feature Condition	The site was designated on 31st May 2019 and as yet there is no conservation advice package available. The Conservation Objectives of the site are yet to be determined, but it should be noted that the consultation document indicated a General Management Approach of 'Restore' for all features. This should be taken into account when considering the significance of impacts on the site. Extents of the features within the site are as follows: Coarse Sediment 145.56km^2, Sand 26.35 km^2, mud 1.49km^2, Mixed sediment 27.54km^2	
Baseline Characterisation	The applicant has undertaken their own survey work, which has provided a good level of coverage across the site. NE/JNCC have highlighted that a non-standard approach to the assessment procedure and in particular the allocation of biotopes has been taken. This makes it difficult to make comparisons across datasets and to draw conclusions with the highest level of certainty at the biotope level. However, we note that the conclusions align with additional surveys - (CEFAS/ JNCC), and therefore consider that there is sufficient information to characterise the broadscale habitats within the site (i.e. the site features) in order to facilitate a WCS assessment of the potential impacts on the site. This can then be refined when further pre-construction monitoring becomes available.	
Assessment of Impacts	Natural England and JNCC welcome the reduction of infrastructure within the MCZ from 24% to 10.5%. A critical piece of information needed for assessment is the amount of operations expected to occur in each feature. Table 1.1 of REP3-023 presents figures of the area of each feature that will be impacted by the operations on both a temporary and permanent basis however, it is not clear to NE how these figures were	Clarity on how the impact figures for each feature were calculated in the assessment. Clarity on impacts that are considered

	calculated, specifically with regard to how the potential overlap with each feature was considered. Therefore we do not feel able to comment on these conclusions. Additionally, REP3-023 provides a breakdown of the potential area of broadscale habitat impacted as a result of each project element at each phase (construction, O&M, decommissioning). This information has then been used to inform assumptions around the likely areas of habitat permanently and temporarily affected at each stage. NE/JNCC's advice on impacts to the features of this site would align with our advice on other designated sites. Therefore there are some project elements that have been considered to be temporary, that we would consider to be persistent and/or permanent depending on the feature- for example cable protection After viewing the evidence provided throughout the examination, Natural England's view remains that the proposed decommissioning of cable protection (based on the methods currently available) is not likely to make good any impacts on designated site features arising from its use, and in some cases may result in additional impacts. We therefore do not agree that this activity represents a temporary and/or reversible impact on site features.	permanent or temporary. Consideration of all impacts on the form and function of features (i.e. impacts beyond the direct footprint, such as scour or change in hydrodynamics).
Significance	The applicant has calculated that the level of temporary habitat loss would equate to 2% of the overall site, with a permanent habitat loss of 0.12% of the entire site [N.B NE/JNCC suggests that these figures would require an adjustment to take account of our advice on impacts]. NE/JNCC accept that this is relatively small in the context of the entire site, but note that this remains a sizable area in km^2. Impacts need to be understood at a feature level before any conclusions regarding the significance can be drawn, and this assessment should consider all of the relevant attributes of the feature, not just its extent. In considering this it should be noted that whilst the Subtidal Coarse Sediment feature dominates the site, and therefore impacts on the scale described in REP2-023 may prove to be relatively small in the context of the feature the sand and mixed sediment are present in much smaller amounts within the site and therefore impacts on these features may be significant.	Impacts to individual features needs to be quantified and assessed in order to determine significance.

Stage 2 MCZ assessment	Should it be determined there are significant impacts on the MCZ features that cannot be addressed through appropriate mitigation measures, then a stage 2 assessment would be required. As highlighted above, Natural England currently unable to provide definitive advice on the significance of the impact on the features of the designated site. There is currently no formal guidance in relation to Measures of Equivalent Environmental Benefit (MEEB) and there and there have been no other cases that have reached this stage. Therefore, should the SoS conclude that MEEB are required, this case would be precedent setting. In the absence of guidance/experience to draw upon, we would recommend that discussions relating to MEEB include input from the SNCBs, Regulatory Agencies (i.e. MMO and BEIS) and Defra.	

Annex 3

Date: 08 November 2019
Our ref: DAS/5267

Andrew Guyton
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral,
8 City Walk
Leeds
LS11 9AT

BY EMAIL ONLY

Dear Andrew,

Hornsea Project Three – Natural England's comments on the post-examination submission of additional ornithology data

On 31st July 2019, Hornsea Project Three submitted additional ornithological information to BEIS in order to address some of the concerns highlighted thorough the course of the examination in public.

Ørsted has subsequently requested that Natural England provide feedback on this document as part of our Discretionary Advice Service.

Natural England have consistently advised that in order to characterise an offshore development area, a minimum of 24 months baseline data should be collected. These data should be from consecutive months and the mixing of multiple incomplete datasets should be avoided, particularly within a season.

Additional Survey Data Collected

The environmental statement (ES) and Report to Inform the Appropriate Assessment (RIAA) are based on Digital Aerial Survey data from between April 2016 and November 2017, giving 20 months of data in total. There are only one year of data for the December to March period, meaning these four months have not been adequately characterised.

This additional report presents outputs from an additional four surveys which took place in January, February and March 2019 (with two surveys undertaken in February). The dates and exact timings of these surveys are not provided.

Whilst this additional survey effort may go at least some way to addressing concerns outlined by Natural England in the Examination, there remains only one December count, which will affect both displacement and collision estimates.

Based on the original December to March dataset for 2016-17, December was the month of peak occurrence in this period for kittiwake, gannet, herring gull, guillemot, razorbill and fulmar.

Assessment/ Incorporation of Additional Survey Data

From the information provided within the report it is not possible to evaluate the impact of the Hornsea 3 project in light of the new data collected. For example:

- The report does not provide full details of the additional data collected (abundance and density numbers), including information on the precision and confidence intervals of the individual survey estimates. Some information is presented in graphs, but actual figures needed for the assessments are not presented.

- The parameters used in the assessments are unclear and do not seem to read across to those provided in examination.

- The turbine parameters/hub height considered within the assessment are not consistent with those presented in the application and appear to fall outside the Rochdale envelope. Although Ørsted presented different turbine parameters in the examination (e.g REP7-030), Natural England's understanding) was that these were indicative and not representative of any firm commitment from the project team and as such were not in the draft DCO. Consequently the assessment presented in this report would not be representative of the project parameters defined in the application.

Throughout the examination, Natural England provided a number of comments in relation to the methodology and parameters used in the assessment of collision and displacement. These outstanding issues have not been given any consideration in the updated assessments provided in this report. These would need to be resolved before Natural England could have confidence in the outputs or any conclusions drawn from them.

It should be noted that Natural England's advice on the correct assessment parameters were based on the baseline that was available, and the SNCB position at that time. Our collective understanding of offshore ornithological impacts and associated assessment methods is constantly evolving and at a relatively fast pace. Natural England's advice on any given project is always based on our understanding at that time, and therefore may be subject to change as new scientific evidence becomes available or based on our growing experience of consented and constructed projects. Due to a combination of these two factors it is possible our advice on this project may have evolved from that provided at the time of examination.

Consequently, should Ørsted wish to undertake updates to this latest assessment, we would advise that the parameters of the assessment would need to be agreed with Natural England. This would require discussions akin to those held within a typical evidence plan process, which would be challenging in the current timescales.

Conclusions of the Report

Overall, Natural England does not agree with the conclusions of this report.

Whilst it is true that where a seasonal peak is used, the effect of the missing data is reduced, and for both collision and displacement apportioning to FFC SPA also reduces the effect in terms of predicted impact, it should nevertheless be noted that:

- The additional data has resulted in an **increase** in the predicted impacts for some species compared to the original assessment;
- The reassessments only consider the mean values and not the range of values as Natural England advises, and as the precision of the data is poor, the confidence intervals (range) around the mean values is wide;
- The assessment is based on a comparison of Hornsea Three's original figures, which Natural England do not agree with, and there is limited detail on how this assessment has been undertaken;
- There are a number of aspects of the data that remain unresolved, such as the precision/coverage, and how the densities and confidence intervals have been combined across years.

Additionally, Natural England does not agree with the conclusion that the additional data "*provide confirmation that the baseline dataset used as part of the HOW3 application captured the variability present in the seabird populations present at HOW3*" . Given that some of the data collected falls outside of the confidence intervals of the original data it would imply that the opposite is true in these cases.

On this point, Natural England would have greater confidence in the assessment undertaken within REP7-078 that indicated the potential for the project alone to result in an Adverse Effect on Integrity of Kittiwake at Flamborough and Filey Coast SPA.

As a consequence of the points highlighted throughout this letter Natural England are unable to agree that the conclusions of the ES and RIAA would not be materially affected by the additional data. There would need to be a full assessment before this could be determined.

Next Steps

Natural England welcomes Ørsted's efforts to address the evidence gaps identified prior to and during the Examination of Hornsea Project Three. However, we would highlight that in order to fully address outstanding concerns these data would need to be complete, robust, and fully reanalysed and impacts reassessed. However, this would be a significant undertaking, and it is not clear whether such information could be taken into account by BEIS at this stage in the process.

This advice is being provided as part of Natural England's Discretionary Advice Service, and is in accordance with the Quotation and Agreement made with Ørsted on 10th October 2019.

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet

Marine Development Adviser
Katherine.Nisbet@naturaengland.org.uk
Tel: [redacted]

☒ The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role as statutory consultee to the competent authority after an application has been submitted. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours,

Chris McMullon
Principle Adviser

Cc commercialservices@naturalengland.org.uk

Annex 4

Date: 29 November 2019
Our ref: DAS/5267

Karma Leyland
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral,
8 City Walk
Leeds
LS11 9AT

BY EMAIL ONLY

Dear Karma,

HOW03 - Markham's Triangle MCZ Update and Initial List of Compensation Measures – Natural England's preliminary comments

Thank you for providing your update to the Markham's Triangle MCZ assessment and an initial list of compensation measures on 21st November 2019. As agreed in our previous conversations and set out in our agreed Schedule of Works (signed off by Emma Brown on 16th November 2019), we will aim to provide a high-level response or discussion points by 10th December 2019. The following are preliminary comments that are intended to provide the Project with an early steer on our position and any potential issues.

This advice is being provided as part of Natural England's Discretionary Advice Service, and is in accordance with the Quotation and Agreement made with Ørsted on 10th October 2019 (DAS 5267).

Initial compensation measures – benthic

In relation to the benthic compensation proposals, we consider these to be net gain options and not those of compensation. Compensation needs to address the loss of a particular Annex I feature from the Natura 2000 network, so that - as a minimum - there is no overall loss. Whilst we recognise the potential wider benefits to the marine environment of net gain, it is necessary to ensure that the legal requirements of the Habitats Regulations are satisfied. We would be happy to provide some further explanation of our understanding of the differences between mitigation, compensation and net gain.

We suggest therefore that other options are considered, recognising that the full mechanism for delivery of these might not yet be known. Natural England is happy to help explore that element with you and others once you have provided some suggestions.

In the meantime we offer some comment on the proposals put forward:

- **Offshore marine litter/debris removal supported by awareness and marine litter prevention campaign** – this could potentially serve to improve condition of a feature within a site but we do not consider it adequate as compensation for loss of habitat. There is potential for this to be included in a package of measures. More information would be needed on the scale of the debris to be removed but the removal should be from within the sandbank feature. It might be worth considering if this proposal could be broadened to include other debris (eg. redundant structures, old cables, pipelines etc.) although it should be noted that removal may be an impacting activity in itself and so would need further investigation.

- **Coastal pollution reduction and prevention, including invasive species management** – whilst this is likely to benefit the wider marine environment, it is difficult to see how these proposals could be considered as compensation for this project as they do not relate to the features in question.

- **Seagrass management/ restoration** – again, as above – it is difficult to see how these proposals could be considered as compensation as they do not relate the features in question.

- **Creation/ restoration of saltmarsh/mudflat/shingle/ oyster coastal habitats** - again, as above, it is difficult to see how these proposals could be considered as compensation as they do not relate the features in question.

Initial compensation measures - Ornithology

The measure presented is 'Invasive predator eradication on a UK island(s) supported by promotion of localised biosecurity measures to prevent predator reintroduction'.

While the proposed compensation measure does not specifically say mammal (rodent) predators it appears that this is what the proposed measure refers to. While this may be feasible to implement and would benefit other seabird species, it would be limited as a compensatory measure for kittiwake for several reasons:

- This measure is only applicable to UK islands. Currently the most important colonies (SPAs) for kittiwake are mainland ones, and Flamborough and Filey Coast Special Protection Area (FFC SPA) is the numerically most important colony – the proposed measure does not relate to impacts on kittiwake at FFC SPA. Further, it is not clear that low numbers of kittiwake on islands that are potential candidates for rodent eradication are the result of mammalian predation, or that eradication would result in significant increases in the kittiwake population on these sites. Options relevant to kittiwake from FFC SPA colony need to be considered.
- There are only 12 island seabird colonies SPAs with "high impact" invasive mammal predators and only five of these have kittiwake as a qualifying feature. Further, on at least two of these SPAs there are no rats, and seabird predation by cats is more of an issue (Mitchell *et al*., 2018). Therefore, there are going to be very few islands where the proposed eradication measures (particularly if restricted to rodent predators) can be applied that will potentially benefit kittiwake numbers. This measure is more relevant to ground-nesting seabirds like puffins and petrels, etc.; predation for species like kittiwake more likely to be by avian predators like great skua or large gulls.
- It could be argued that the biosecurity measure that is part of the proposal would not be compensation in that it is not providing any gain, but is preventing further loss of what is already

there.

- Food availability appears to be the key driver of productivity declines at majority of kittiwake colonies in the UK (e.g. see MacArthur Green (2013) report). We would encourage Ørsted to investigate this option further.

In summary, any benefit for kittiwake from the proposed measure would accrue primarily to the specific island colony or colonies that are the subject of the eradication/biosecurity measures and not the FFC SPA colony. It is not clear that mammalian predator control and biosecurity on an island/s would result in significant benefits for kittiwake populations (either at the colony level or wider population level), and the opportunities to undertake measures that would have a positive impact on kittiwake colonies appear limited.

It would be good to see which specific islands with kittiwake colonies could be targeted, which predators of kittiwake on these islands could be eradicated, plus evidence that it is predation that is limiting kittiwake numbers on these islands. We do note that eradication of predators on seabird islands would be beneficial to other seabird species.

Markham's Triangle MCZ update

Natural England welcome the proposed reduction in infrastructure within the MCZ. However, we note there remains an issue from Examination on how cable and scour protection impacts are considered between the construction and O&M phases of the project. During our telecall on 22nd November 2019, we advised Ørsted to contact both Richard West and Ellie Noble at the MMO to get an update on how they as the regulator expect the placement of cable protection to be assessed and permitted as this is likely to change the assessment. If the figures included are subsequently changed, this may alter the level significance for this and other benthic documents that are due to be submitted. We feel this is something that could be resolved now as part of the new assessments.

In addition to the above we note that the current document only considers the amendments and not a full revised MCZ assessment. For the avoidance of doubt and for audit trail purposes going forwards, we advise that it would be appropriate to provide a revised assessment. Please note that this would also be beneficial for the Cromer Shoal MCZ especially with the inclusion of a second worst case scenario relating to HDD exit pits. As set out in our Site Summaries document (5th November 2019) HDD will have different impacts to those of trenching due to the features impacted and how the operations are undertaken, but could be equally significant in those impacts and should be assessed.

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet
Marine Development Adviser
Yorkshire and North Lincolnshire Team
E-mail: katherine.nisbet@naturalengland.org.uk
Telephone: [redacted]

References:

MacArthur Green 2013. Evidence review to support the identification of potential conservation measures for selected species of seabirds.

Ian Mitchell, Sophie Thomas, Laura Bambini, Karen Varnham, K., Phillips, R., Gemma Singleton, Andrew Douse, Simon Foster, Melanie Kershaw, Neil McCulloch, Matty Murphy, & Jane Hawkridge 2018. Invasive mammal presence on island seabird colonies. UK Marine Online Assessment Tool, available at: https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/birds/invasive-mammals/

☒ The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role as statutory consultee to the competent authority after an application has been submitted. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours,

Chris McMullon
Principle Adviser

Cc commercialservices@naturalengland.org.uk

Annex 5

Date: 06 February 2020
Our ref: DAS/5267

Karma Leyland
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral, 8
City Walk Leeds
LS11 9AT

BY EMAIL ONLY

Dear Karma,

HOW03 – Updated Marine Conservation Zone (MCZ) assessment

Thank you for providing an updated MCZ assessment for Hornsea Project Three. We acknowledge that the project has provided the additional information for Cromer Shoal MCZ as requested by Natural England, and has also committed to no infrastructure being placed within Markham's Triangle MCZ, and that this updated assessment reflects these changes.

Markham's Triangle MCZ

Natural England welcome the commitment of the project to ensure no infrastructure will be placed within the MCZ. Given this commitment, the only pathway for impact to the site would be through indirect impacts of nearby activities (e.g. cable installation). These indirect or residual impacts can be managed through the various installation and O&M plans, each of which would require an MCZ assessment prior to sign off my the MMO to ensure the conclusions of the assessment remain appropriate. Consequently we advise Ørsted to ensure they are assessing a realistic worst case scenario and satisfy themselves that impacts can be avoided or mitigated if deemed necessary following final design and pre-construction surveys.

Please note that a reference is missing in Section 5.2.2.6.

Cromer Shoal Chalk Beds MCZ

Installation

We welcome the inclusion of an assessment of Horizontal Directional Drilling (HDD). However, whilst the area of impact may be less than the trenching option, the overall significance of the impact in relation to the conservation objectives for the site and wider coastal processes has the potential to be significant unless several caveats are

met (see below).

We note that there is no mention of UXO clearance or pre-grapnel run in the assessment though we acknowledge that a separate marine licence for UXO clearance would be sought prior to construction, as the installation works are contingent on this activity taking place. Consequently, Natural England advises that the MCZ assessment consider the potential impacts associated with this, or confirm that UXO clearance is not required. Natural England would also welcome clarification as to whether a pre-grapnel run is within the parameters already assessed.

If all the cable installation activities associated with **trenching** (excluding cable protection) are undertaken as described within the subtidal sand feature then Natural England agree that the impacts are likely to be temporary and are unlikely to significantly hinder the conservation objectives for the site. It should be noted that this does not address the potential impacts to Section 41 priority intertidal habitats (which are outside of the MCZ boundary) that would result from trenching activities.

The same conclusion for **HDD** can only be reached if the project can ensure that exit pits will be completely backfilled with the excavated material, the surface material should remain the same as the rest of the feature, and there will be no secondary impacts from depositing and removing sediment.

In order to rule out the potential for significant impacts to MCZ features it needs to be demonstrated that the HDD pits can be reinstated using the excavated material. Natural England believes that with the current proposals there is potential for side cast material to be lost. Therefore we would encourage the Project to consider the storage of the material elsewhere and/or introducing a seasonal restriction. This should be captured in the outline Cable Specification and Installation Plan (OCSIP), and the full details can be worked through prior to its sign off, and should be captured in the DCO/DML as appropriate.

Natural England request clarification on any contingency measures should chalk be found closer to the surface than predicted. Again, this should be captured in the OCSIP.

Overall, it is recognised that risks remain and therefore 'If for whatever reason during the pre-construction/construction phase the above cannot be met, and/or the impacts are greater than predicted then work would be halted until a revised MCZ assessment is completed by the MMO and there may then be a requirement to agree a MEEB package'.

Cable protection

We note and welcome that the percentage of the cable route potentially requiring protection has been reduced from 10% to 7% based on updated calculations made by the project. This revised figure equates to a total of 2,940m^2 over 6km of cable. We also note that this is the maximum design scenario over the 35 year lifetime of the project, but should additional cable protection be required after the construction period, a separate marine licence will be applied for and impacts will be assessed at that time.

The assessment of impacts during the operational phase remains confused, as area and volume are used interchangeably (see 5.1.3.7). Natural England's understanding is that if consented with its current wording the DCO/DML would permit the project to deposit up to 25% of the volume of cable protection deposited during construction and only in areas where it has been previously placed during construction. If the Project requires a greater volume of protection in new areas then this would require an additional marine licence. Any additional request should not be more than the 2,940m^2 and volume (not currently stated) originally assessed. These

parameters need to be clearly explained and fully assessed, with direct read across to the DCO/DML. Natural England also note that there is no reference to how the amount of cable protection will reduce if the number of cables installed reduces, and request clarification on this point.

Natural England welcome the Project looking at innovative ways to reduce their impact, including trialling 'sensitive cable protection' initiatives. However, it should be noted that there is currently no evidence to demonstrate its efficacy and we therefore do not consider it a mitigation measure. We also question whether the approach of matching the size and type of the sediment will provide effective protection to the cable(s) in all locations. We would suggest that given the unknowns of this measure it may be appropriate to trial it outside of designated sites until it's efficacy can be determined.

Decommissioning

As stated in previous responses, Natural England consider cable protection to be a lasting impact and therefore removal of cable protection at the time of decommissioning is not a proven form of mitigation.

Significance of cable protection

Whilst 2940m^2 of cable protection represents a small proportion of the feature, and overall area of the MCZ, it is also considered a persistent impact to the site. In addition, the potential impacts on form and function of the site need to be considered, not just the direct loss of area. For example, if it is deployed in a single location the impacts may be different than if there are scattered pockets of cable protection.

Therefore, given the significance of the impacts to the site are not clearly defined, a risk to the site and the project remains and we advise that as a precautionary measure the project should undertake a Stage 2 assessment and MEEB should be given consideration. Should BEIS (or the MMO for future licences) then consider it necessary after their own assessment, the project will not encounter additional delays.

This advice is being provided as part of Natural England's Discretionary Advice Service, and is in accordance with the Quotation and Agreement made with Ørsted on 10th October 2019 (DAS 5267).

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet
Marine Development Adviser
Yorkshire and North Lincolnshire Team
E-mail: katherine.nisbet@naturalengland.org.uk
Telephone: [redacted]

☒ The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role

as statutory consultee to the competent authority after an application has been submitted. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours,

Cc commercialservices@naturalengland.org.uk

Annex 6

Date: 11 February 2020
Our ref: DAS/5267

Karma Leyland
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral, 8 City Walk
Leeds LS11 9AT

BY EMAIL ONLY

Dear Karma,

HOW03 – DRAFT Ornithological Mitigation proposals

Hornsea Project Three provided Natural England with the DRAFT Revised Ornithological Mitigation Scenario on 24th January 2020, and we have the following comments to make.

Summary of NE position

Natural England agree that the amendments in the project design envelope (i.e. lower tip height and reduction in turbine numbers) will result in a proportional reduction in the collision estimates. However, we cannot agree on what the absolute level of reduction will be as we believe the issues with the underlying baseline data have not been resolved. In addition, based on the revised figures presented in this document we would still conclude that in-combination an Adverse Effect on Site Integrity (AEOSI) could not be ruled out.

Detailed comments

- Section 1.6 – Can the project confirm that the figures for lower rotor tip height at MSL and LAT are correct, as it would make sense for the air gap to be bigger at LAT compared to MSL.
- Table 2.2 – It would be helpful to present total collisions (i.e. not apportioned to Flamborough and Filey Coast (FFC) SPA) as this introduces another parameter making the comparison between predictions less straightforward/clear.
- Table 3.1 – We note that the turbine parameters in this table are not the same as those provided in REP7-031 for a mitigation for a 40m rotor height at MSL. Can the project clarify why this has changed (e.g. change in turbine specification including rotation speed)?
- Table 3.3 – Natural England advise use of the new PVA Tool to run these models.
- Section 4.1 - Natural England agree that the proportional reduction in collision risk estimates using the updated mitigation scenario would be within the range presented here.
- Section 5.4 - With reference to the following text:

  "The Applicant therefore continues to maintain its conclusion that these collision rates are of insufficient magnitude to lead to an AEOI of the kittiwake feature of the FFC SPA. It should be noted that the in-

*combination collision rate for the Applicant's interpretation of Natural England's position (which is considered to be unnecessarily precautionary, **X submission**) is lower than or comparable to that approved by the Secretary of State for East Anglia THREE and Hornsea Project Two."*

It should be noted that the figures that were consented for East Anglia Three and Hornsea Project Two represent the Secretary of States position and did not necessarily reflect Natural England's conclusions on these projects.

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If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet
Marine Development Adviser
Yorkshire and North Lincolnshire Team
E-mail: katherine.nisbet@naturalengland.org.uk
Telephone: [redacted]

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Cc commercialservices@naturalengland.org.uk

Annex 7

Date: 11 February 2020
Our ref: DAS/5267

Karma Leyland
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral, 8 City Walk
Leeds LS11 9AT

BY EMAIL ONLY

Dear Karma,

HOW03 – Sandwave Disposal Principles

1) Context

Natural England advise that within designated sites all Sandwave levelling material/sediment is deposited on grain size that is similar enough for the features of the site to recover to the same faunal community as pre-dredging.

Within the Secretary of States' letter to Norfolk Vanguard, a condition was proposed that required that the sediment deposited would have a 95% similarity to the sediment composition of the disposal location. The figure of 95% similarity was proposed in order to be consistent with aggregates extraction whereby the grain size post dredging should be within 95% (PSA) similarity to enable recovery.

Natural England recognises that the areas proposed for Sandwave levelling and deposition in an offshore windfarm application take place over larger areas than a typical aggregates licence area and that therefore meeting this requirement may be complex and associated conditions may be difficult or impractical to enforce. Natural England are therefore open to alternative means of meeting the overall objective, providing clear criteria or principles can be established.

2) Summary

Within our detailed comments Natural England seeks further clarification on how each of the principles will ensure the Sandwave material will be deposited in similar particle sized areas. Until further clarification is provided we are unable to support the following: -

1) That the principles for identification of sandwave clearance disposal sites are appropriate for the SAC; and

2) And that these should be included in the Outline Cable Specification and Installation Plan (OCSIP)

Please note that this response focuses solely on the draft wording of the principles to address the comments we provided above during examination. Any further comments on the indicative disposal locations and Sandwave levelling are provided in a separate response to this.

3) Detailed comments – based on section 1.3 of the Sandwave Disposal Principles

To ensure compatibility between the two sites the following process is recommended:

- *Determine the location of the Sand features from the existing geophysical survey data (i.e. thickness and/or base of sand unit);*

NE Comments: We are not sure what information this is expected to provide. Will this simply identify the location of sandwaves or do you anticipate using this to identify potential locations to deposit sand.

- *For each zone and/or protected site characterise the global properties of the sands from the available particle size distribution data;*

NE Comments: What is the available data? Will you take samples – where and at what spacing? How will this work in practice across large areas? Global properties of the sand is a term we do not understand whereas PSA is standard. Whilst the top layer of receiving sand will need to be considered; the average particle size of all the sand extracted and not just the top layer should be considered.

- *This should be conducted in parallel with the seabed lithology classification from the available geophysical interpretation;*

NE Comments: We are unclear what this means. Does it mean using the available particle size and geophys information, and interpreting the particle size across a wider area? (If this is the case what happens if the material is not homogenous through the Sandwave?) OR, does it mean using sub-bottom profiling to ensure you know the particle size of the sediment at depth as well as at the surface? (If the site very homogenous or dynamic, can this be demonstrated to be less of an issue?)

- *Using the geotechnical and geophysical data within close proximity to the proposed disposal locations ensure that that the composition from both the sandwaves and disposal area are similar.*

NE Comments: Do you already have PSA data for disposal sites or is this something you would need to obtain? We assume that the same process is used as with the sandwave area i.e. use available PSA data and extrapolate based on geophysical information. As the disposal sites are usually large areas some understanding of how homogenous they are is required. However, this seems a repeat of some of the other tests and comments i.e. to use geophysical survey information to see if the sand 'looks' the same at both sites. This has some merit, but would require ground-truthing using the PSA discussed above.

4) Additional Advice

Please note that if you classify sediment type through sub bottom profiling and identify the sediment and rock layers you would have to combine this with physical samples i.e. grabs and sidescan to ground truth the data and get an idea of spatial distribution. It is not clear from the principles if this point is recognised and incorporated.

This advice is being provided as part of Natural England's Discretionary Advice Service, and is in accordance with the Quotation and Agreement made with Ørsted on 10th October 2019 (DAS 5267).

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet
Marine Development Adviser
Yorkshire and North Lincolnshire Team
E-mail: katherine.nisbet@naturalengland.org.uk
Telephone: [redacted]

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Yours,
Chris McMullon
Principle Adviser

Cc commercialservices@naturalengland.org.uk

Annex 8

Date: 12 February 2020
Our ref: DAS/5267

Karma Leyland
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral, 8 City Walk
Leeds. LS11 9AT

BY EMAIL ONLY

Dear Karma,

HOW03 – Post-Examination benthic surveys – Export Cable Protection Assessment for MPAs

Please note, these comments are Natural England's interim advice and may be subject to change on review of the full suite of documents submitted to BEIS on 14th February 2020. There may also be some overlap with comments already provided on the updated MCZ assessment (sent 10th February) and Sandwave Disposal Principles (sent 11th February).

Post-Examination benthic surveys

The following interim response to the Cable Engineering Site Specific Survey document is given without prejudice to any formal advice we may provide once we have reviewed the full Environmental Baseline Document survey.

Natural England agree that based on the information presented in this document the volume of sandwave clearance has been reduced and this will reduce impacts to the Annex 1 sandbank feature and sub-features of The Wash and North Norfolk Coast (WNNC) SAC from these activities only.

Detailed comments

- The conservation objectives of the site include a requirement to maintain the presence and distribution of subtidal sandbank communities/sub features. Every effort should be made to further minimise the impacts by disposing of sediment in the most suitable locations.
- Natural England does not consider that the evidence presented is sufficient to exclude the presence of gravel, till, sub cropping and outcropping chalk within the cable corridor through the SAC. Consequently we remain concerned that this may influence the ability to bury cables and therefore the requirement for cable protection within the SACs.
- The characterisation of the nearshore area appears to be based on the extrapolation of a single data point (grab sample) from out with the area. Natural England would consider this insufficient to have confidence that the entirety of the nearshore is sand.

- The section on North Norfolk Sandbanks and Saturn Reef (NNSSR) SAC focusses on the re-routed area, which is predominantly outside of the SAC (only 4km within). Given there may be Habitats of Principle Nature Conservation concern located within the cable corridor outwith the designated site , we advise that the locations these features are identified and that cabling and/or disposing of sediment is avoided in those locations.
- Table 2.2 - it is unclear why there is a difference between clearance and disposal figures and why there would be a temporary habitat loss.
- Table 2.3 - there is no consideration of cumulative impacts from other activities. Also, Natural England does not consider that sufficient information has been presented to demonstrate that there would be sufficient similarity between the sediment in the disposal locations identified and dredged material to establish the likelihood of recovery. Consequently we could not support the disposal of sediment in these locations. (Please also see Natural England's comments on the Sediment Disposal Principles.)
- In order for the impact of sandwave levelling and disposal in a dynamic system to be considered temporary, Natural England would anticipate recovery in around 12 months. We would like to understand how recoverability has been taken into account in this paper.

Export Cable Protection Assessment for MPAs

Natural England are encouraged that the project was able to re-examine the available data and revise the estimates for cable protection down from 10% of the export cable to 6% for WNNC and NNSSR SACs and 7% for Cromer Shoal MCZ.

However, while we acknowledge that this is a reduction in impact we do not agree that this will not result in AEOI or hinder the conservation objectives of the MCZ. This is due to the amount of protection; the longevity of the impact and that sites are already in unfavourable condition. Additionally, for NNSSR the heat maps provided appear to show that protection is likely to be in large sections and may impact Annex 1 reef features. We do, however, consider that the additional information provided supports a more detailed assessment and quantification of these impacts.

We would also request clarification on how the project would scale down the amount of cable protection depending on the number of cables actually installed. The Maximum Design Scenario considered in the Environmental Statement and RIAA is for up to six cables but it would be useful to understand how reduction in cables would result in an equivalent reduction in protection required

This advice is being provided as part of Natural England's Discretionary Advice Service, and is in accordance with the Quotation and Agreement made with Ørsted on 10th October 2019 (DAS 5267).

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet
Marine Development Adviser
Yorkshire and North Lincolnshire Team
E-mail: katherine.nisbet@naturalengland.org.uk

Telephone: [redacted]

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Cc commercialservices@naturalengland.org.uk

Annex 9

Date: 12 February 2020
Our ref: DAS/5267

Karma Leyland
Ørsted Hornsea Project Three
5 Howick Place,
London
SW1P 1WG

Natural England,
Lateral, 8
City Walk Leeds
LS11 9AT

BY EMAIL ONLY

Dear Karma,

HOW03 – Sandbank and Ornithological compensation options

Within this letter we are providing written summary of the comments we have made verbally on Ørsted's proposed approach to identifying compensatory measures. It should be noted that we expect to provide additional comments during the consultation period, upon review of the full scope of the Project's submission to BEIS/SoS.

Summary of our engagement

Natural England staff participated in a workshop with Hornsea Three on 12th December 2019 to discuss compensatory measures. Ørsted briefly outlined proposals for ornithological (kittiwake) compensatory measures but the main focus of these discussions was around an extended list of compensation options for sandbank features of both the Wash and North Norfolk Coast (W&NNC) SAC and North Norfolk Sandbank & Saturn Reef (NNSSR) SAC.

The Project subsequently provided a Sandbank Compensation Options document on 3rd January 2020 (updated version sent 24th January 2020), and a draft Ornithology compensation options document on 6th January 2020 followed by a draft kittiwake strategy document on 22nd January 2020.

We have also attended a follow up call with Ørsted and the RSPB on 28th January 2020 to discuss the proposed Ornithology Compensation Strategy, and have provided feedback verbally during weekly catch up calls with the project team.

Natural England's Advice on Orsted's proposed approach to identifying compensatory measures

In an email the Natural England sent to Ørsted on 8th November we provided links to guidance from Defra and the EEC on Article 6(4) of the Habitats directive.

Defra Guidance
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69622/pb13840-habitats-iropi-guide-20121211.pdf

EEC Guidance
https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf

As outlined by Defra guidance :

> *The Habitats Directive seeks to create a coherent ecological network of protected sites. Therefore if harm to one site is to be allowed (because there are no alternatives and IROPI can be shown) the Directive requires that all necessary compensatory measures are taken to ensure the overall coherence of the network of European sites as a whole is protected.*
>
> *Such measures must be decided on a case by case basis and aim to offset the negative effects caused by the plan or project.*

Both documents set out criteria upon which compensatory measures should be designed. These include, amongst other things:

- Targeted compensation (i.e. measures should be appropriate to the appropriate to the type of impact predicted and should be focused on objectives and targets clearly addressing the Natura 2000 elements affected.)
- Effectiveness/Technical feasibility
- Extent of compensation
- Location of compensation
- Timing of compensation
- Long term implementation

Natural England acknowledge the challenges in identifying compensatory measures that meet all of the criteria and would always recommend that all options to avoid, reduce and/or mitigate the impacts are fully explored prior to any considerations of potential compensation. We note and welcome the efforts Ørsted have made to both reduce and better define their impacts in conjunction with their consideration of the SoS's request for further information.

Given the challenges, we would anticipate that proposals of potential compensatory measures are likely to meet some aspects of the criteria better than others. Whilst Natural England may offer our views on the appropriateness and likely effectiveness of compensatory measures, we are mindful that the ultimate decision as to how to weight each of criteria rests with the Secretary of State (SoS). In consideration of this and the current stage of the Hornsea Three application, our advice would be to provide the SoS/BEIS with as much information as possible to support any future decision making.

We commend the Project for presenting a range of initial options for both sandbank and ornithological compensation and welcome the discussions that we have had on this 'extended list'. We note however, that the project is now seeking to narrow this list to focus on two compensation options for sandbanks (marine litter and mussel restoration) and one option for kittiwake (mammalian predator removal at small island colonies). Whilst we acknowledge that some of the 'extended list' options would be technically difficult and/or require support of

regulators and other stakeholders to implement, we are of the opinion that they should not be ruled out as in principle measures at this stage, particularly if they are more likely to achieve the principles/requirements of compensation as set out in the Defra and EEC guidance.

Consequently we recommend that Ørsted present a wider set of options in response to the SoS's request and that these are evaluated against the criteria set out in the guidance documents. This provides BEIS and the SoS the opportunity under its role as the competent authority to make a determination on the feasibility and strengths and weaknesses of the range of options to deliver an appropriate level of compensation.

Clarification of Natural England's Advice

It should be noted that during the workshop discussions Natural England did not agree that options should not be explored further as stated in sections of both the sandbanks and ornithology compensation options documents. See Annex 1 for specific comments. It should also be noted that the comments provided in Annex 1 relate to Hornsea Three specifically and are offered without prejudice to our advice on the assessment of the project under Article 6(3) and any future discussions in relation to Article 6(4) of the Habitats Regulations of this and/or any other project.

This advice is being provided as part of Natural England's Discretionary Advice Service, and is in accordance with the Quotation and Agreement made with Ørsted on 10th October 2019 (DAS 5267).

If you have any questions relating to this letter please contact me using the details below.

Yours sincerely,

Katherine Nisbet
Marine Development Adviser
Yorkshire and North Lincolnshire Team
E-mail: katherine.nisbet@naturalengland.org.uk
Telephone: [redacted]

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Cc commercialservices@naturalengland.org.uk

Annex 1 – Detailed comments on Sandbanks and Ornithology compensation documents

Ornithology – Measures screened in

1.1.1.7 - For compensation Option 6i and 6ii (prey availability - sandeel fisheries management) the Project states that Natural England agreed that this should not be explored further. While we acknowledge the challenges in the delivery of such measures, and the need for involvement/co-operation from a range of regulators and stakeholders, we do not agree that it should not be explored further given that prey availability is a key driver of kittiwake population declines.

Sandbanks – Measures Screened out

Section 1.1.1.4 – The key concern of Natural England regarding Compensation Option 1i and 1ii was regarding the potential impacts to other features within designated sites e.g. The Wash and North Norfolk Sandbanks SAC.

Section 1.1.1.6 – Natural England questions whether Option 2iii (Coastal pollution reduction and prevention, including invasive species management, associated with habitat restoration / improvement) could be considered an appropriate compensatory measure for the NNSSR SAC, given particularly that it is not commensurate with the impacts it is addressing and that coastal pollution reduction is subject to other regulatory mechanisms (MSFD etc).

Section 1.1.1.8 – Whilst we recognise there are inherent challenges with Option 5 (reduction of other pressures excluding fishing) we also believe that from an ecological perspective this could provide a more appropriate compensatory measure for these particular impacts.

Sandbanks – Measures Screened in

- Compensation Option 2i Habitat restoration / improvement (debris / litter)
  The removal of debris/artificial structures from anthropogenic structures/activities within the site (e.g. scour protection) was supported by Natural England as this would have a beneficial impact to the sandbank feature. Whilst undoubtedly a good thing to do, it was not clear if the removal marine litter could constitute a viable compensation option, given that the impacts of litter on the overall form and function sandbank features are not well understood and would be difficult to quantify.

- Compensation Option 2iv Habitat restoration / improvement (blue mussel bed restoration)
  Whilst this option could be of overall benefit to the designated site (W&NNC), we would question whether it would be an appropriate compensatory measure for impacts to the sandbank feature.

- Compensation Option 6ii Incentives / disincentives for certain activities (working with fisheries to identify less damaging fishing techniques). Whilst we recognise the benefits this could have to the site and wider ecosystem, we note the challenges in implementing this. For example, the feasibility of this option would rely on ensuring that it is sufficiently regulated to ensure delivery, particularly in offshore locations. Some consideration would need to be given to this.

- Compensation Options 7i, ii, and iii. Reserve creation / provision of a new site and conservation measures (new site, extension, feature improvement). Natural England consider that whilst these options, if secured, might help ensure the coherence of the Natura 2000 Network and its representative coverage of habitats and species, they do raise wider legal and policy questions and that further dialogue with the appropriate Government Departments would be necessary.