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Subject: Norfolk Vanguard Application Submission by Ørsted
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Dear ExA

We are pleased to enclose a submission by Ørsted Hornsea Project Three (UK) Ltd into the Norfolk Vanguard examination for Deadline 7, Thursday 2nd May 2019.

Please acknowledge safe receipt of these documents.

If we can be of any assistance in this regard, please do not hesitate to contact me.

Best regards,
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Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three Offshore Wind Farm

Orsted Hornsea Project Three (UK) Ltd Submission for Norfolk Vanguard Offshore Wind Farm ("NV") Deadline 7: Response to Natural England comments at ISH 4 regarding Hornsea Three

Date: 2 May 2019

Hornsea 3
Offshore Wind Farm

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1. Introduction

- 1.1 This submission by Orsted Hornsea Project Three (UK) Limited ("**Ørsted**") responds to comments by Natural England ("**NE**") at Issue Specific Hearing 4 (*Environmental Matters*) ("**ISH 4**") as summarised in NE's post-hearing written summary [**REP6-032**; *NV Examination Library*] (the "**NE ISH4 submission**") and which raise ornithological matters pertaining to Hornsea Project Three offshore wind farm ("**Hornsea Three**"). Specifically, this submission addresses comments made by NE under the topic heading "*Cumulative and in-combination effects*" in paragraphs 2.38 – 2.45 of the NE ISH4 submission.
- 1.2 For the avoidance of doubt, as set out in Ørsted's Relevant Representation on the NV application [**RR-194**; *NV Examination Library*], in principle, Ørsted supports NV as it will provide an important contribution towards meeting the UK government's very challenging renewable energy and carbon emission reduction targets and enable the UK to continue its growth in the offshore wind sector. This submission should not therefore be construed as any comment on the relative merits of NV project.
- 1.3 In the interests of brevity, this submission refers in brief to issues addressed comprehensively in the course of the Hornsea Three Examination (EN010080). The detailed information and submissions which support Ørsted's position can be found in the documents set out in section 4 (Key References) at the end of this submission. The most pertinent of which providing a summary of Ørsted's position at the close of the Hornsea Three examination being 'Offshore Ecology Matters Closing Legal Submission on behalf of the Applicant' REP10-038.
- 1.4 All of these documents are already in the public domain on the Planning Inspectorates' ("**PINS**") website. Unless otherwise identified as such (i.e. *NV Examination Library*), document references in this submission refer to the PINS' Examination Library for Hornsea Three, which can be viewed at: <https://infrastructure.planninginspectorate.gov.uk/projects/eastern/hornsea-project-three-offshore-wind-farm/>.

2. Hornsea Three Ornithology Baseline

- 2.1 Paragraph 2.38 of the NE ISH 4 submission sets out NE's position that the Hornsea Three offshore ornithology baseline surveys are (in its view) "*incomplete and insufficient to adequately characterise the baseline, primarily because there are 4 months of missing data and therefore only one set of winter data. As a result of this it is not possible to rule out AEoI*".
- 2.2 It is important to note that this is NE's position, which is not accepted by Ørsted and has been comprehensively rebutted by Ørsted through submissions during the Hornsea Three Examination. Ørsted is confident that the ornithological baseline for Hornsea Three is robust and that the assessments of ornithological impact are highly precautionary. Consequently, there is sufficient certainty to undertake an appropriate assessment and conclude no adverse effect on integrity ("**AEoI**") (discussed further in Hornsea Three REP10-038 'Offshore Ecology Matters Closing Legal Submission on behalf of the Applicant').
- 2.3 The issue NE cites with respect to the ornithological baseline must be considered objectively, in proper context, with regard to the totality of the evidence available to the Secretary of State.

- 2.4 The ornithological baseline for Hornsea Three comprises a site-specific digital aerial survey ("DAS") campaign comprising 20 consecutive months of surveys along with a wealth of boat-based survey data gathered from across the former Hornsea Zone from March 2010. The latter has been used in various ways to supplement, understand and contextualise the site-specific DAS data¹. In general terms, it is not unusual for data from a variety of sources and platforms to be used for impact assessment. Nor is it unusual to take into account the extent of pre-existing data available to supplement and limit the need for new data acquisition when designing any site-specific survey campaign including its duration.
- 2.5 With regard to the DAS, as NE note the months surveyed in only one season fall during the winter. The months surveyed over two seasons (April – November inclusive) include the majority of the breeding season for key species of concern, which are more important in ornithological impact assessment terms than the months surveyed once (December – March inclusive)². Nevertheless, any uncertainty which may be said to derive from the 4 month gap and its implications for impact assessments has been comprehensively explored by Ørsted.
- 2.6 Additionally and importantly, the former Hornsea Zone holds a wealth of historic information including but not limited to monthly boat-based surveys of seabirds across the former Hornsea Zone (plus a 10 km buffer) commencing in March 2010 and completed in February 2013, encompassing three breeding, migratory and winter periods. Together, these surveys amount to amongst the most well surveyed areas for offshore wind farm development in the UK. There is good survey data from a previous zonal survey programme which included data for the Hornsea Three area and provides useful baseline information which can complement the site-specific DAS. For example, the previous surveys within the zone confirm densities and the variability in the density of key species during the December – March period are low or lower, compared to other times of year³.
- 2.7 It is Ørsted's view that it has presented information required to ensure robust environmental assessments. However, without prejudice, Ørsted has also submitted evidence which demonstrates Hornsea Three is far from unique in having gaps in survey data: a number of other consented offshore wind farms have similarly collected less than 24 months of survey data including gaps of 4 or more consecutive months⁴. Data gaps are a common issue for offshore wind development given the challenges of surveying in the marine environment. Such gaps do not mean baseline data is insufficient and has not previously precluded robust assessments and consideration of the cumulative/ in-combination position.
- 2.8 A suite of ornithological clarification notes including sensitivity testing and analysis has been provided by Ørsted during the Hornsea Three Examination⁵. The consistent pattern of evidence adds confidence in the conclusions of the Hornsea Three Report to Inform Appropriate Assessment ("RIAA")⁶. This evidence demonstrates that the assumptions and analysis in, and in turn the conclusions of, the RIAA for Hornsea Three are highly, and in some, cases overly precautionary.

¹ See for example **APP-110** (*Data Hierarchy Report, ES Volume 5, Annex 5.4*).

² See REP1-141.

³ See REP1-141.

⁴ See Table 1.3 in **REP1-141**.

⁵ See for example **REP141** (Baseline Characterisation Sensitivity Testing), which addresses the adequacy of the ornithological baseline and considers the likelihood of inter-annual variability for the 4 months with one year of aerial survey data.

⁶ See **APP-051 – APP-054** and **AS-004**.

- 2.9 Overall, considering the totality of the data and evidence available, there is no greater uncertainty in the Hornsea Three baseline and assessments than may be expected to arise in the context of any proposed offshore wind farm. Areas of residual uncertainty have been identified transparently. These have been accounted for by Ørsted through a combination of sensitivity testing and/or suitably precautionary assumptions which have been applied to the impact assessment and it is open to other parties using the assessment for cumulative/ in-combination assessments to proceed similarly.
- 2.10 In conclusion, Ørsted is satisfied it has provided precise and definitive information to allow the Secretary of State to conclude no AEol as a result of Hornsea Three alone or in combination. That conclusion can be reached beyond reasonable scientific doubt based on a comprehensive survey and precautionary analysis. As such, it is simply not correct for NE to suggest any cumulative / in-combination scenario which includes Hornsea Three would be subject to "*a high degree of scientific doubt*". In this context, reference should also be made to the Closing Legal Submission⁷ on behalf of Ørsted, which addresses the issues raised by NE through the lens of the legal framework for Habitats Regulations Assessment and concludes the baseline issues raised by NE do not provide a sound basis for concluding reasonable scientific doubt.

3. Approach to In-combination / Cumulative Assessment

- 3.1 Paragraphs 2.40 and 2.41 of the NE ISH4 summary suggest that NV base their in-combination/cumulative assessment on "*East Anglia Three cumulative totals, and then adding the figures for both NV and Thanet Extension*". It is then suggested that Hornsea Three is addressed in a separate assessment.
- 3.2 There is no basis to (uniquely) depart from the normal approach in the context of the NV examination.
- 3.3 As set out above, the ornithological baseline for Hornsea Three is considered robust and on a precautionary assessment there is no indication of AEol in respect of any European site designated for ornithological interest. There is sufficient certainty to allow a suitable cumulative / in-combination assessment in the normal way. That is to say, as Hornsea Three was submitted ahead of NV and remains an extant application, it must be considered as part of the cumulative baseline as a "Tier 1" project⁸.
- 3.4 Unless and until the Hornsea Three application is determined by the Secretary of State, it must be treated as part of the cumulative / in-combination baseline in the context of NV and consideration must be given to the cumulative / in-combination position assuming that Hornsea Three is granted development consent. There is no legal, policy or evidential basis for taking the approach advocated by NE.

⁷ See REP10-038.

⁸ PINS Advice Note Seventeen: Cumulative effects assessment.

- 3.5 A degree of uncertainty is inherent to any environmental assessment process as it necessarily involves prediction and modelling in an effort to assess what is likely to happen in the real world. In a prior assessment, there is never, or rarely, absolute certainty, which established case law accepts is "*almost impossible to attain*"⁹. That approach has applied to each and every offshore wind farm consented to date. Hornsea Three is no different.
- 3.6 It is also incorrect for NE to suggest (paragraph 2.44 of the NE ISH4 summary) that multiple applications under examination at the same time sets a new "precedent". In any event, consideration of cumulative / in-combination impacts via the "building block approach" is always a challenge. The biggest challenge derives from inherent over-estimation of the pre-existing cumulative baseline impact deriving from the fact that the impacts assumed in cumulative and in-combination assessments on account of the use of the assessed impact (at application stage) as opposed to the consented or as-built turbine scenarios where impacts are typically less (i.e. consented envelopes being greater than as built scenarios, leading to 'headroom'). This issue has been addressed by Ørsted¹⁰ but, although NE agrees as a matter of principle that cumulative/ in-combination assessments are generally an over-statement of impact, NE does not account for it: NE does not agree with the method adopted by applicants to correct for this inherent over-estimation (based on MacArthur Green (2017)) but then does not set out how it advises it should be done. If this issue is not addressed, new projects may be refused on account of an over-stated baseline position and thus a false premise that some cumulative/ in-combination "threshold" has been reached or exceeded.

⁹ C-127/02, *Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landbouw, Natuurbeheer en Visserij* at para 107.

¹⁰ See **REP1-148** and **REP6-020**, which clarified the approach taken in APP-051 and APP-065.

4. Key References

(Note: Ørsted does not intend to submit each of these supporting documents (all of which are in the public domain and published on the Planning Inspectorate website) into the Norfolk Vanguard examination as they are not considered pertinent to the determination of Norfolk Vanguard application (unless separately drawn on by the Applicant, Vattenfall).

Document Title	Hornsea Three Examination Library Reference
Application	
Report to Inform the Appropriate Assessment	APP-051
RIAA – Annex 1 – HRA Screening Report	APP-052
RIAA – Annex 2 – Additional SPA Screening	APP-053
RIAA – Annex 3 – Phenology, Connectivity and Apportioning	APP-054
ES Chapter 5 Offshore Ornithology	APP-065
Baseline Characterisation Report (ES Volume 5)	APP-107
Analysis of Displacement Impacts (ES Volume 5)	APP-108
Collision Risk Modelling (ES Volume 5)	APP-109
Data Hierarchy Report (ES Volume 5)	APP-110
Additional Submissions	
HRA Screening Matrices	AS-004
Procedural Decisions	
Rule 17 – 19 March 2019 – Request for further information to Ørsted (questions F3.1 – F3.3)	PD-020
Deadline 1	
Applicants Response to the Examining Authority's Written Questions (Appendix 49)	REP1-005
Applicant Responses to the Examining Authority's First Written Questions	REP1-122
Applicant's Comments on Relevant Representations	REP1-131
Population Viability Analysis (Appendix 9)	REP1-135
Alternative Approach to sourcing cumulative and in-combination collision risk estimates (Appendix 7)	REP1-139
Baseline Characterisation Sensitivity Testing (Appendix 8)	REP1-141
Paper by Cleasby I.R. et al. (RSPB Research Report no. 63.) (Appendix 42)	REP1-144
Analysis of precaution in cumulative and in-combination assessments – as-built scenarios (Appendix 4)	REP1-148
Paper by Skov H. et al. (ORJIP Bird Collision and Avoidance Study. Final report – April 2018) (Appendix 41)	REP1-149
Paper by Trinder M. (Crown Estate 2017) (Appendix 43)	REP1-150
Age class data (Appendix 3)	REP1-169
Habitats Regulations Assessment Screening and integrity matrices (Appendix 1)	REP1-187
Collision risk monitoring: Updates to species-specific-parameters - clarification note (Appendix 10)	REP1-188
Collision risk monitoring: herring gull - clarification note (Appendix 12)	REP1-189
Deadline 2	
Comments on Written Representations and Responses	REP2-004
Comments on Responses to the Examining Authority's Written Questions	REP2-005
Seabird Flight Height Trial Report (Appendix 5)	REP2-017
Estimating Seabird Flight Height Using LiDAR (Appendix 6)	REP2-018
RSPB Seabird Tracking Study at the Flamborough and Filey Coast (Appendix 7)	REP2-019

Deadline 3	
Written summary of Applicant's oral case put at Issue Specific Hearing 2	REP3-004
Figures to the Applicant's Response to Examining Authority's Question Q1.2.46 (REP1-122) (Appendix 13)	REP3-022
Age Class Data (Appendix 17)	REP3-026
Deadline 4	
Response to the Examining Authority's Further Written Questions	REP4-012
Bowgen and Cook, 2018 (Appendix 14)	REP4-035
Summary of positions in relation to collision mortality for the SPA populations of gannet and kittiwake (Appendix 28)	REP4-049
Kittiwake Hotspots - Detailed response to the Examining Authority's Q2.2.20 (Kittiwake Hotspots)(Appendix 30)	REP4-051
Detailed response to the Examining Authority's Q2.2.30 and Q2.2.39 (Appendix 73)	REP4-092
DAS coverage - Detailed response to the Examining Authority's Q2.2.3 (Appendix 77)	REP4-096
Deadline 5	
Comments on Interested Parties' Responses to the Examining Authority's Second Written Questions submitted at Deadline 4	REP5-008
Second Issue Specific Hearing clarifications in relation to offshore ornithology (Appendix 4)	REP5-012
Confirmation of migratory seabirds considered in migratory collision risk modelling (Appendix 5)	REP5-013
Apportioning Immature Auks to Colonies (Appendix 6)	REP5-014
Deadline 6	
Written summary of Applicant's oral case at ISH5 (29th January 2019)	REP6-010
Offshore ornithology Hearing Clarifications -cumulative and in combination assessment methods and age class data (Appendix 6)	REP6-020
Position of the Applicant in relation to collision risk modelling (Appendix 28)	REP6-042
Deadline 7	
Written summary of Applicant's oral case put at Issue Specific Hearing 7	REP7-009
Position Statement on Ornithology Mitigation Options (Appendix 12)	REP7-030
Collision Risk Estimates for Mitigation Scenarios (Appendix 13)	REP7-031
Ornithological Data Request and Tabulation of Collision Risk Modelling Parameters (Appendix 15)	REP7-032
Deadline 8	
Deadline 8 Submission - Applicant's comments on Written Representations and Responses submitted by Interested Parties at Deadline 7	REP8-007
Deadline 8 Submission - Appendix 1 to Deadline 8 submission - Applicant's Comments on Natural England's response to the Rule 17 (REP7-064)	REP8-008
Deadline 9	
Applicant Responses to the Examining Authority's Further Information - Rule 17	REP9-013
Applicant's position in relation to displacement impacts (Appendix 16)	REP9-044
Response to Examining Authority's FQ3.1 Rule 17 Collision Risk Modelling (Appendix 19)	REP9-047
Deadline 10	
Applicant's response to Natural England's Deadline 9 submission (Ornithology) (Appendix 10)	REP10-035
Offshore Ecology Matters Closing Legal Submission on behalf of the Applicant	REP10-038