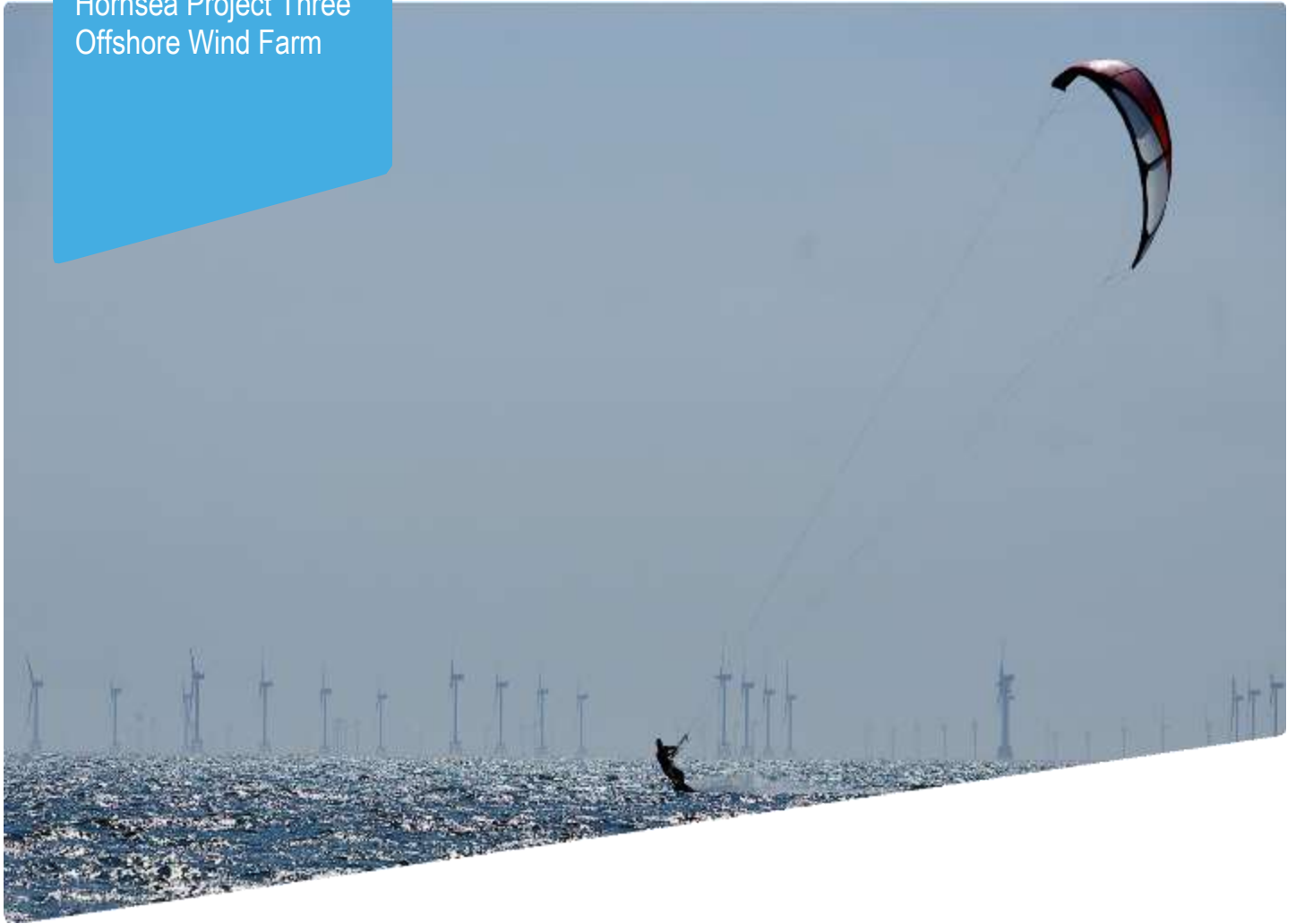


Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three Offshore Wind Farm

Appendix 12 to Deadline 2 Submission – Memorandum of Understanding between the Hornsea Project Two and Natural England

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2018.

Hornsea Offshore Wind Farm

Project Two

Memorandum of Understanding between the Applicant and Natural England

Appendix Q to the Response submitted for Deadline VII

Application Reference: EN010053

10 December 2015

smartwind.co.uk

Memorandum of Understanding between the Applicant and Natural England in relation to Habitat Regulation Assessment and Environmental Impact Assessment for the Project

The purpose of the Memorandum of Understanding is to set out final:

- i. agreed positions, and
- ii. statements of fact where there may be differences between the Applicant and Natural England.

It serves as an update and summary of more detailed submissions made throughout the examination.

Habitat Regulations Assessment

1.1 The Applicant advised in Appendix J of its response to Deadline III (see section 2.9) that it had been agreed with Natural England in relation to the below species:

- **Gannet** – for collision and displacement impacts, there is no potential adverse effect on the integrity of the Flamborough Head and Bempton Cliffs (FHBC) SPA or Flamborough and Filey Coast (FFC) pSPA from the Project alone, or in-combination with other plans and projects;
- **Guillemot** – for displacement impacts, there is no potential adverse effect on the integrity of the FHBC SPA or FFC pSPA from the Project alone, or in-combination with other plans or projects;
- **Razorbill** – for displacement impacts, there is no potential adverse effect on the integrity of the FHBC SPA or FFC pSPA from the Project alone, or in-combination with other plans or projects;
- **Puffin** – for displacement impacts, there is no potential adverse effect on the integrity of the FHBC SPA or FFC pSPA from the Project alone, or in-combination with other plans or projects.

1.2 Subsequently, the Applicant confirmed in its response to Deadline VI and submission of 4 December 2015 (see section 4 of the response document to Deadline VI and sections 1.3 to 1.6 of the submission document of 4 December 2015) that Natural England have advised there is no potential for an adverse effect on the integrity of the **kittiwake** feature of the FHBC SPA or FFC pSPA from the Project alone, subject to a commitment by the Applicant to mitigate collision effects on kittiwake through a reduction in the Project's design envelope, specifically:

- The removal of the 5MW wind turbine generator (WTG) option (the smallest capacity is now a 6MW WTG); and
- Increasing the minimum blade tip height from 26m relative to lowest astronomical tide (LAT) to 29.97m relative to LAT.

1.3 Subsequent to the Applicant's response to Deadline VI, the Applicant confirmed in its submission of 4 December 2015 (the "December Submission") that the Applicant and Natural England had continued discussions in relation to the potential effect of the Project on the kittiwake feature of the Flamborough Head and Bempton Cliffs SPA and the Flamborough and Filey Coast pSPA in-combination with other plans and projects. As a result of these discussions, the Applicant proposed a further refinement to the Project's envelope, which represents a further increase to the minimum blade tip height relative to LAT. Specifically, the Applicant would now propose to increase the minimum blade tip height from 26m relative to LAT to 34.97m above LAT. This represents an additional 5m increase to that detailed at Deadline VI and a total increase of 8.97m from the initial parameter specified in Requirement 2(1)(d) of the draft DCO submitted with the Application. In addition and by consequence, the Applicant would further propose to reduce the maximum rotor diameter from 250m to 241.03m, ensuring that the maximum blade tip height specified in the draft DCO (276m relative to LAT – see Requirement 2(1)(b) of Part 3 of the draft DCO) is not exceeded. Importantly for Natural England, this allowed a full 5m band of data to be included in the option 1 model. Therefore, information on kittiwake flight heights for the model was derived from flight height bands beginning at 27.5m – 32.5m upwards. The final numbers for kittiwake using Natural England's assumptions are;

- Option 1: 14.2 collisions per annum (range 7.7 – 24.4)

- Option 2: 48.1 collisions per annum (range 26.1 – 82.8);

The final number for kittiwake using the Applicant's assumptions is:

- Option 4: 0.8 collisions per annum (range 0.4 – 1.4)

- 1.4 The Applicant confirmed in its submission of 4 December 2015 that it would incorporate these proposed refinements to the Project's design envelope within Version 8 of the draft DCO (to be submitted at Deadline VII). The full details of the proposed changes to Version 7 of the draft DCO were set out in Table 1 of Appendix A of the Applicant's submission of 4 December 2015.
- 1.5 Natural England considers that the level of in-combination mortality under consideration here is such that an adverse effect on integrity of the FHBC SPA and the FFC pSPA cannot be ruled out (the Applicant currently estimates Natural England's in-combination position, in light of the additional mitigation, to be approximately 314 collisions per annum). However, on the basis of this further mitigation, Natural England have confirmed to the Applicant their view that the effect of the additional predicted mortality from the Project alone (14.2 based on Natural England's calculation), while not *de minimis*, is so small as to not materially alter the significance of the overall in-combination mortality figure or the likelihood of an adverse effect on the integrity of the SPA or pSPA arising from such an in-combination level of mortality.
- 1.6 In view of the above, Table 1 below summarises Natural England's advice to the Secretary of State in relation to the Habitats Regulation Assessment of the Project. To confirm, based on the above, Natural England have concluded (allowing for the underlying uncertainty in the assessment) that the Project will not cause an adverse effect on the integrity of any European Site. Only the species raised by Natural England as being of potential concern during the Examination are included in Table 1.

Table 1: Summary of Natural England's position in relation to HRA conclusions

Natural England's Advice			
	Project Alone	Project in-combination	Comment
Gannet	No adverse effect on integrity	No adverse effect on integrity	N/A
Guillemot	No adverse effect on integrity	No adverse effect on integrity	N/A
Razorbill	No adverse effect on integrity	No adverse effect on integrity	N/A
Puffin	No adverse effect on integrity	No adverse effect on integrity	N/A
Kittiwake	No adverse effect on integrity	No adverse effect on integrity	Conclusion reached on the basis of the Applicant's proposed mitigation detailed at section 1.3 above. Whilst Natural England consider that they cannot rule out an adverse effect as a result of plans and projects in combination, on the basis of the further Project mitigation, Natural England consider that the effect of the additional predicted mortality from the Project alone (14.2 based on Natural England's calculation) is so small it will not materially alter the overall in-combination mortality figure or the likelihood of an adverse effect on the integrity of the SPA or pSPA arising from such

Natural England's Advice			
	Project Alone	Project in-combination	Comment
			an in-combination level of mortality.

- 2.1 There have been a number of important considerations underlying discussions between the Applicant and Natural England in relation to the HRA conclusions for kittiwake detailed in Table 1 above. These considerations are set out in Table 2 below for sake of completeness, with each party's respective submissions on the matters signposted for the Ex. A's ease of reference.
- 2.2 For the avoidance of doubt, however, Natural England's conclusions in Table 1 have been reached notwithstanding any disagreement between the Applicant and Natural England in relation to the assessment methodology and/or outcomes.

Table 2: Summary of assumptions and positions advocated by Natural England and the Applicant underpinning the assessment of collision risk to the FHBC SPA and FFC pSPA kittiwake feature.

Consideration	Natural England's Position	Applicant's Position
Population Trend	Natural England believe that the population of kittiwake at the FHBC SPA and FFC pSPA has declined and may still be declining, or is at best stable. They estimate the magnitude of this decline from values quoted on the citation of the FHBC SPA to be in the order of 50%. Natural England's evidence for this decline is set out in their written submissions (see Appendix 2 of Natural England's submission to Deadline III and Section B of its submission to Deadline IV). A condition assessment of the underpinning SSSI states that the site is in unfavourable-declining condition ¹ .	The Applicant has disputed that there is evidence of a long-term decline in the Bempton Cliffs component of the SPA/pSPA kittiwake colony and has also disputed suggestions the Filey component of the pSPA has also shown declines. The Applicant has set out their consideration of the issue in its submission at Deadline IV (see Appendix EE). If the highlight uncertain data from 1987 are excluded, the data of the breeding colonies at Bempton Cliffs and Filey less clearly indicate a supposed decline and, rather, follow the pattern suggested by MacArthur Green (2015) (see Appendix M of the Applicant's response to Deadline IIA for further detail).
Conservation Objective	The high-level conservation objectives for the FHBC SPA are: <i>"Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the</i>	The Applicant noted in its submission at Deadline VI (see Appendix E) that Natural England have not provided any visibility on the timeline for setting the conservation objectives for the pSPA, the

¹

<https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1002289&ReportTitle=FLAMBOROUGHHEAD>

Consideration	Natural England's Position	Applicant's Position
	<p><i>aims of the Wild Birds Directive...</i>².</p> <p>Natural England included draft conservation objectives for the pSPA at Appendix 2 of their submission to Deadline VI, which mirrored those for the FHBC SPA.</p>	<p>stage which that process has reached within Natural England, or the factors being considered in setting that objective (including presumably a consideration of the prospect of achieving any objective set and the proposed methodology for doing so).</p>
Assessment of Impacts	<p>As a consequence of the Applicant's proposed further mitigation (detailed at section 1.3 above), Natural England have predicted a collision rate per annum of 14.2 kittiwake for the Project alone, and 314 kittiwake for the Project in-combination with other plans and projects.</p> <p>As noted above, Natural England have confirmed their view that:</p> <ul style="list-style-type: none"> the additional predicted mortality from the Project alone (14.2 based on Natural England's calculation) is considered not to be an AEoSI (see Submission at Deadline V paragraphs 3.63 -3.66 for description of this conclusion for the initial mitigation scenario); and the effect is so small, it will not materially alter the overall in-combination mortality figure or the likelihood of an adverse effect on the integrity of the SPA or pSPA arising from such an in-combination level of mortality. 	<p>As a consequence of the Applicant's proposed further mitigation (detailed at section 1.3 above, the Applicant has predicted a collision rate per annum of 0.8 kittiwake for the Project alone, and 108 kittiwake for the Project in-combination with other plans and projects.</p> <p>The Applicant would refer to its submission at Deadline VI (see Appendix E) or its previous submissions (Appendix P at Deadline IIA and Appendices DD and EE at Deadline IV), which sought to clarify the differences between the Applicant and Natural England's respective predicted collision estimates.</p> <p>In any case, however, the Applicant notes Natural England have concluded (based on their figures) that there is no potential for an adverse effect on the integrity of the kittiwake feature of the FHBC SPA or FFC pSPA from the Project alone, and the projects contribution to the in-combination assessment will not alter the significance of the overall in-combination mortality figure or the likelihood of an adverse effect on the integrity of the SPA or pSPA</p>

² <http://publications.naturalengland.org.uk/file/6140665175998464>

Consideration	Natural England's Position	Applicant's Position
Differences in methods used to carry out assessment of the significance of impacts.	Natural England's assessment has utilised the results of metrics from a density independent PVA model. The metrics have focussed on the two counterfactual metrics, change in growth rate and change in final population size. More detail can be found in their Deadline VII response to the ExA's Rule 17 letter issued at deadline VI.	The Applicant maintained throughout the Examination of the Project that it's predicted impacts (alone and in-combination) will not lead to an adverse effect on the integrity of either the FHBC SPA or FFC pSPA. This conclusion was reached on the basis of the outputs of PVA modelling and that a density dependant PVA model is appropriate (see Appendix M of the Applicant's response to Deadline IIA)

Environmental Impact Assessment

- 3.1 The Applicant provided detail of their EIA assessment of offshore ornithological receptors within Appendix CC of its response to Deadline IV. Natural England in turn provided their conclusions with respect to the EIA assessment at Section A of its response to Deadline VI.
- 3.2 The Applicant advised in Appendix M of its response to Deadline VI (see section 3.2) that it had been agreed with Natural England in relation to the below species:
- **Kittiwake** – for collision impacts, there is no significant effect in EIA terms from the Project alone or cumulatively;
 - **Guillemot** – for displacement impacts, there is no significant effect in EIA terms from the Project alone or cumulatively;
 - **Razorbill** – for displacement impacts, there is no significant effect in EIA terms from the Project alone or cumulatively;
 - **Puffin** – for displacement impacts, there is no significant effect in EIA terms from the Project alone or cumulatively;
 - **Great Black-backed Gull** – for collision impacts, there is no significant effect in EIA terms from the Project alone or cumulatively;
 - **Lesser Black-backed Gull** – for collision impacts, there is no significant effect in EIA terms from the Project alone or cumulatively; and
 - **Gannet** - for collision and displacement impacts, there is no significant effect in EIA terms from the Project alone.
- 3.3 In reference to the updated CRM numbers submitted by the Applicant at Appendix B on the 4th December 2015, the Applicant can confirm that the numbers attributed to Natural England are figures calculated by the Applicant. The agreements reached on EIA terms as set out above were made prior to the commitment by the Applicant to further mitigate collision effects (as set out in Paragraph 1.2 above). The inclusion of the mitigation commitment and subsequent revision of EIA collision estimates will not alter these agreements.
- 3.4 **Applicant Position Gannet Cumulatively.** With regards to the cumulative assessment of gannet, within its submission at Deadline IV (Appendix CC) the Applicant predicted 2,570 annual gannet collisions from the Project cumulatively with other projects (18 annual collisions from the Project alone). This figure represents an equivalent f value of 0.14. These values are considerably below the f value considered by the Applicant as sustainable for this population ($f = 0.5$). The Applicant also considers that the PVA of the UK gannet population produced under the SOSS initiative (WWT Consulting 2012), which considered the likely effects of built and planned offshore wind farms in the UK (and elsewhere), also indicates that the predicted cumulative impact will not have a significant effect.

- 3.5 **Natural England Position Gannet Cumulatively.** Within their submission at Deadline VI, Natural England considers that a significant effect on the North Sea Population of gannets cannot be excluded based on their calculation of 3,021 annual cumulative collisions when compared against the outputs of WWT (2012). Following the Applicants 'December Submission' revised collision risk figures based on the additional mitigation were available to Natural England. The revised collision risk modelling calculates the cumulative total to be 2976 annual collisions and the projects contribution to be 27 annual collisions. While a significant effect on the North Sea Population of gannets still cannot be excluded, Natural England advises that the Project's contribution to the cumulative total is so small that it does not contribute to the effect in a meaningful way.
- 3.6 The Applicant and Natural England has set out in Table 3 below the Applicant's and Natural England's respective positions regarding the cumulative EIA for Gannet for the Ex. A's ease of reference.

Table 3: Summary of the Applicant's and Natural England's positions regarding the cumulative EIA for Gannet

Consideration	Natural England's Position	Applicant's Position
Assessment of Impacts	<p>As a consequence of the Applicant's proposed further mitigation (detailed at section 1.3 above), it is predicted on Natural England's assumptions that there will be a collision rate per annum of 27 gannet for the Project alone, and 2,976 cumulatively for the Project with other plans and projects.</p> <p>Natural England consider that the effect of the additional predicted mortality from the Project alone (27 based on Natural England's calculation) is so small that it will not materially alter the overall cumulative mortality figure and any assessment of significance in EIA terms. Natural England have solely based their conclusions on Gannet in EIA terms within their Deadline VI submission, the SOSS PVA (WWT, 2012).</p>	<p>As a consequence of the Applicant's proposed further mitigation (detailed at section 1.3 above), the Applicant has predicted a collision rate per annum of 18 Gannet for the Project alone, and 2,570 Gannet for the Project cumulatively with other plans and projects.</p> <p>The Applicant would refer to its submission at Deadline IV (see Appendix CC) which based its conclusions on both Population Biological Removal and PVA.</p> <p>With regards to PBR, the equivalent f value of cumulative mortality represents 0.14 considerably below the f value of 0.5.</p> <p>The Applicant also argues, that following the commitment to revise the Project's design envelope, that 18 annual gannet collisions from the Project alone represents an impact that will not materially alter the overall cumulative mortality figure and any assessment of significance in EIA terms.</p>

Consideration	Natural England's Position	Applicant's Position
Differences in methods used to carry out assessment of the significance of impacts	Natural England have always maintained that they will use a PVA model where one is available (see written reps 6.5.79 and 6.5.81). For the assessment of Gannet at the EIA scale Natural England has defined their conclusions on the use of the SoSS PVA consistent with approaches at Dogger Bank Creyke Beck A&B and Dogger Bank Teesside A&B.	The Applicant has referenced both PBR and the SOSS PVA report within its conclusions in order to provide their view of the best currently available overview of the options in assessing gannet collision risk in an EIA context (see Appendix CC of the Applicant's response to Deadline IV).

Signed:



Sophie Hartfield
Smart Wind Limited on behalf of
Optimus Wind Limited and Breesea Limited



James Bussell
Natural England

Date: 10/12/2015