

Hornsea Offshore Wind Farm

Project Two

The Applicant's Response to the Wildlife Trust's Written Representation

Appendix G to the Response submitted for Deadline II

Application Reference: EN010053

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Appendix G - The Applicant's Response to TWT's Written Representation

1. With regard to the concerns raised by TWT with respect to the delineation of the North Sea Management Unit (MU) for harbour porpoise and the potential for existence of sub-populations in the North Sea, the Applicant notes that the reference populations in the marine mammal assessment within the Project's ES were based upon the most recent guidance from the Statutory Nature Conservation Bodies (SNCBs). The Applicant notes that Natural England agrees that the appropriate MUs were used as reference populations for the Project alone and in the cumulative impact assessment (CIA) (see paragraph 7.2.6 and 7.2.17 of Appendix XX of the Applicant's response to Deadline I).
2. With regard to TWT's request for mitigation to be included for behavioural effects in the marine mammal mitigation protocol (MMMP), the Applicant maintains the position that mitigation for behavioural effects is not necessary due to predictions of recovery of the population following cessation of piling. Notwithstanding this, the Applicant has, proposed additional wording (Condition 10(2)(e)(vii)) within version 3 of the draft DMLs (Appendix A of the Applicant's response to Deadline I) such that the use of noise reduction technologies will be considered when drafting the MMMP. The Applicant notes that the inclusion of a commitment to consider the use of noise reduction technologies prior to construction as part of the MMMP is agreed within the SoCG between the Applicant and Natural England (see paragraph 7.2.25 of Appendix XX of the Applicant's response to Deadline I).
3. In their Written Representation, TWT highlights the high densities of harbour porpoise in the study area and the uncertainty of the population consequences of disturbance. This is an issue of disagreement between TWT and the Applicant (see Table 10.1 of Appendix OO of the Applicant's response to Deadline I). The Applicant maintains the position that the assessment has adequately dealt with uncertainty by adding layers of precaution at each stage of the assessment process (as noted in the Applicant's response to EOMM11 in the First Response). In the SoCGs between the Applicant and Natural England (paragraph 7.2.8 of Appendix XX of the Applicant's response to Deadline I) and the Applicant and TWT and LWT (paragraph 6.2.6 of Appendix OO of the Applicant's response to Deadline I), it was agreed that a precautionary approach has been applied to the noise modelling in order to account for some of the uncertainties, and it was agreed that further precaution has been applied throughout the impact assessment.
4. TWT in their written representation refer specifically to the potential for displacement from an area of high resource availability. The Applicant notes that the assumption that all animals disturbed by subsea noise will be displaced is precautionary since there is increasing evidence in the scientific literature to show that only a proportion of animals within the behavioural threshold will be displaced (e.g., Brandt *et al.*, 2011). Paragraph 4.6.77 of Volume 2, Chapter 4: Marine Mammals of the ES (Doc ref No. 7.2.4) highlights this by showing that if a proportional response occurred (following a published dose-response relationship: Finneran *et al.*, 2005; Thompson *et al.*, 2013), the number of animals affected would be considerably less (~60%.) compared with the assumption that all animals are displaced (see Figure 4.22 in Volume 2, Chapter 4 of the ES). In addition, as stated in paragraph 4.6.128, Volume 2, Chapter 4 of the ES, it is likely that a resource-rich area, such as the Hornsea

Zone, would be a key driver for animals returning quickly to the area between disturbance events. The conclusions of the impact assessment were based on the worst case scenarios and building in all the layers of precaution, such that there is confidence in the assessment that the impacts will be no greater than, and most likely considerably less than those presented. The Applicant notes that this matter is agreed between the Applicant and Natural England (see paragraph 7.2.14 of Appendix XX of the Applicant's response to Deadline I).

5. With regard to the comments raised by TWT with respect to the referencing of the interim DEPONS report (Appendix AA of the Applicant's Response to Deadline I), the Applicant draws attention to the context in which the information provided by the DEPONS model was applied to the impact assessment in Volume 2 and Chapter 4 of the ES. The preliminary results of the model were provided to build a picture of the potential disturbance effects of pile-driving in the North Sea on harbour porpoise and not to wholly inform the impact assessment. Discussion of this document is heavily caveated throughout Volume 2 and Chapter 4 of the ES, saying that "*The model is still in the development state and therefore no firm conclusions can be drawn at this stage*". Irrespective of the limitations of the preliminary results, the results from DEPONS, interpreted together with results from other published scientific work, are useful in building knowledge and understanding within this area that subsequently supports the conclusion that no long-term effects were likely to occur as a result of pile-driving. Furthermore, it is worth noting that Natural England are applying the use of the *interim* PCoD model to their strategic cumulative assessment (see paragraphs 6.6.3 and 6.6.4 of Natural England's written response), which itself is subject to many caveats in terms of the input parameters and interpretation of results. Although both models are preliminary, in the absence of other data, they may provide some useful insights into long-term population level effects, provided the limitations of the model are clearly understood and outputs interpreted accordingly.
6. TWT, in their written representation, make specific reference to the use of data in the DEPONS as derived from the DanTysk offshore wind farm, which used noise reduction mitigation. The Applicant would like to highlight to the Ex.A page 21 of the DEPONS report (van Beest *et al.*, 2015) which states: "*Assuming no noise mitigation measures are applied (e.g. seal scarers, bubble curtains, porpoise pingers) a transmission loss of 17 log r, and an additional 6 dB is added to convert from peak level to peak level an estimated source level of 255 dB is obtained. This impact value is higher than the maximum impact value used in the DanTysk construction site (249 dB), which is realistic as noise mitigation measures were applied during pile-driving events in DanTysk construction*". The DEPONS model therefore adjusted the input parameters to account for the fact that noise mitigation technologies had been applied at DanTysk. As noted by the Applicant in paragraph 4.6.62 of Volume 2 and Chapter 4 of the ES, further work is yet to be done testing the sensitivity of the model to input parameters and updating the model with additional empirical data, but it is understood that this sensitivity analysis will be available in January 2016.
7. With regard to the request by TWT to be a named consultee for the MMMP, the Applicant would emphasise that it has adopted a consistent approach across the drafting of the DCO to ensure that the focus of consultation for all pre-commencement plans is with the relevant statutory stakeholders and regulators particular to each area subject to the relevant plans. The Applicant considers that this is the most appropriate means of ensuring the necessary level of

control particular to each plan, whilst ensuring that each plan's approval process can still progress in an efficient and coordinated manner. By contrast, the Applicant considers that were this process to be opened up to non-statutory bodies, such efficiency and coordination would be undermined and the process would likely become unwieldy and may result in unacceptable delays to the Project's construction timetable.

8. The Applicant notes TWT's comments regarding consideration of alternatives with respect to satisfying the EPS licencing process. The Applicant highlights that consideration will be given to all three tests in the EPS once the project design specification is further refined and should an EPS be required.
9. With regard to the concerns raised by TWT with respect to the projects screened into the Cumulative Impact Assessment, the Applicant notes that the CIA included a screening process to determine which projects to include and which to omit. The Applicant maintains the position that the Regional Study Area should be defined on the basis of those projects that are most likely to interact to produce a cumulative effect regardless of the delineation of the reference population. The extent of the regional study area and projects scoped into the CIA were agreed between the Applicant and NE in the SoCG (see paragraph 7.2.6 and 7.2.17 of Appendix XX of the Applicant's response to Deadline I). It was agreed between the Applicant and NE that due to the importance of the regional study area for harbour porpoise, further information on the proportion of the study area affected by each of the projects in the CIA would be provided. The areas and proportions were presented in Appendix 8 of the SoCG with Natural England.
10. The Applicant notes TWT's comments regarding the harbour porpoise proposed Special Areas of Conservation (pSACs). It was agreed in both the SoCG between the Applicant and NE and the SoCG between the Applicant and, TWT and LWT, that the Applicant is committed to maintaining a watching brief and acknowledges that consideration of the designation of pSACs may be required as part of the Habitats Regulation Assessment (HRA).
11. The Applicant notes TWT's written representation on ornithological matters and refers TWT to the responses provided in response to the RSPB's written representation in Part 1 of the Applicant's response to Deadline II.

References

- Brandt, M.J., Diederichs, A., Betke, K. and Nehls, G., (2011). *Responses of harbour porpoises to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea*. Marine Ecology Progress Series. 421, pp.205 – 216
- Finneran, J. J., Carder, D. A., Schlundt, C. E. and Ridgway, S. H. (2005) *Temporary threshold shift (TTS) in bottlenose dolphins (Tursiops truncatus) exposed to mid-frequency tones*. Journal of the Acoustical Society of America, 118, 2696-2705
- Thompson, P.M., Hastie, G., Nedwell, J., Barham, R., Brooker, A., Brookes, K., Cordes, L., Bailey, H., and McLean, N. (2013). *Framework for assessing the impacts of pile driving noise from offshore wind farm construction on Moray Firth harbour seal populations*. Environmental Impact Assessment Review 43: 73–85
- van Beest, F.M, Nabe-Nielsen, J., Carstensen, J., Teilmann, J. & Tougaard, J. 2015: *Disturbance Effects on the Harbour Porpoise Population in the North Sea (DEPONS): Status report on model development*. Aarhus University, DCE – Danish Centre for Environment and Energy, 43 pp. Scientific Report from DCE – Danish Centre for Environment and Energy No. 140 (<http://dce2.au.dk/pub/SR140.pdf>).