

**Deadline 8 Submission
for
The Royal Society for the Protection of Birds**

13 December 2015

Planning Act 2008 (as amended)

In the matter of:

**Application by SMartWind for an Order granting Development Consent for the
Hornsea Offshore Wind Farm – Project Two**

**Planning Inspectorate Ref: EN010053
Registration Identification Ref: 10031166**



Introduction

1. The document is structured as follows:
 - Revised Counterfactual of Population Size for Gannet and Kittiwake
 - Response to the Applicant's Deadline 7 Appendix O
 - The RSPB's Response to the First Rule 17 Letter - please note to avoid unnecessary repetition we have responded to questions about the second modification to the turbine details and have not answered in relation to the first proposed (and now superseded) modifications.
 - The RSPB's Response to the Second Rule 17 Letter – as above we have responded to questions about the second modification and not answered in relation to the first proposed (and now superseded) modifications.
 - Recommended Changes to the draft Development Consent Order
 - Overall Conclusions
2. The RSPB's comments on the Report on the Implications for European Sites (RIES) is attached separately.

Revised Counterfactual of Population Size for Gannet and Kittiwake

Final positions

3. Counterfactual of Population Size (CPS) is the percentage difference between median population sizes with and without the development, after 25 years (the lifetime of the project). It represents the decrease in population.
4. Counterfactual of Population Growth Rate (CPGR) is the change in median population growth rate. NE are recommending that assessment is based on this, in comparison with current population growth rate. If the current rate exceeds that modelled rate, then there would not be an adverse effect on site integrity. However crucially this does not examine the population change over the lifetime of the development, nor considers whether the growth rate could change in the future. For these reasons CPS remains the RSPB's preferred metric.

Gannet Mortality

5. The RSPB's concern over the possible impacts to gannets is in part due to the pSPA being the only gannetry (breeding colony) in England and in 2015 it supported 12,494 occupied nests (HRA Report Part 2 (ref 12.6), paragraph H.22), concentrated in an approximately 5 km stretch of cliff¹. Within this area is the RSPB's Bempton Cliffs Reserve. This pSPA population accounts for approximately 3.3% of the North Atlantic biogeographic population.

Key contextual points:

6. This Bempton Cliffs colony has been increasing since the 1980s, more steeply since 2004, with a growth rate of 10.5% per annum between 1986 and 2012, and 12.8% between 2004 and 2012.

¹ There were also approximately 2,500 non-breeders on potential nest sites.

Other UK colonies, with the exception of St. Kilda which has remained constant, have also grown but at a slower rate.

7. A recent paper (Cleasby *et al.*, 2015) where flight was measured, rather than estimated, demonstrated that collision mortality for gannet could be considerably higher than previous predictions. These predictions were for the Forth and Tay wind farm developments, but the results are analogous with Hornsea Project 2, and so predicted collision mortality for this development could also be considerably higher. Furthermore, the in combination assessment does not include additional mortality from Forth and Tay wind farms as predicted by Cleasby *et al* (2015), and indeed other wind farms where predictions could also be an underestimate, and therefore the in combination figures are also likely to be low.
8. The RSPB's notes the Applicant and Natural England's comments on Cleasby et al 2015 but *respectively* disagrees. As set out previously our concerns with boat based surveys remain and whilst recognising that the sample size used in Cleasby was small we support the paper's conclusions. The issue with sample size is important and the paper's authors are currently collecting more data in recognition of this. However the paper still points out a major discrepancy between flight heights measured by boat-based observers and those obtained using a scientifically robust and validated method. Essentially the sample size argument can be reduced to this scenario: if work was need to be carried out on a house, who would best be trusted with providing measurements of the house dimensions; an accredited builder with a verified accurate tape measure or multiple builders with only estimates for the dimensions? As pointed out in our earlier submissions, we of course appreciate that the observers carrying out the flight height surveys for Hornsea Project 2, have had training under the ESAS scheme, in a variety of aspects of survey methodology, but crucially not the estimation of flight height. The Applicant has been unable to provide any details of training in flight height estimation given to these observers. The RSPB therefore continues to hold the view that the flight heights presented in a peer-reviewed paper, published in one of the world's leading ecological journals, measured using scientifically robust and validated methods, are likely to be more accurate than those estimated by observers with no training in height estimation. In absence of more accurate height measurements, the most parsimonious approach is the use of flight height distributions using pooled data, as detailed in Johnston *et al.*, (2014)
9. Regardless of these issues with the differential merit of measurement versus estimation, the measurement methodology used by Cleasby *et al.*, has the further advantage of eliminating a major bias of boat based survey; attraction or displacement of birds by the boat. As discussed in our previous submissions gannet and gulls, (including kittiwake), are actively attracted to boats, and so birds flying around boats during survey are likely to be doing so at a lower altitude, thereby compounding the estimation error.
10. Both the Applicant and Natural England are critical of the collision risk assessment carried out by Cleasby *et al.*, (2015), but that assessment is not the key part of that paper, rather it was used as an illustrative example. The key point of relevance to Hornsea Project 2 is that boat based estimates of flight altitude are likely to be significant underestimates and subsequent collision mortalities will therefore also be underestimates.

11. The PVA carried out by MacArthur Green for the Applicant has indicated that for the recent increases in the Bempton Cliffs population, there would have needed to be high net immigration into colony, most likely from the Bass Rock gannetry. This gannetry would be the main focus for the increased mortality from Forth and Tay wind farms, as predicted by Cleasby *et al.*, (2015), and therefore it is likely that this net migration would be reduced, if not stopped altogether.
12. Finally, the high population growth associated with the UK population is likely to be man-made, driven by the discards from fishing vessels. Legislation is making such discards illegal, and this is likely to slow, or even curtail the population growth.
13. Table 1 shows the gannet mortality predicted as a consequence of Hornsea Project 2, attributed to the pSPA, using the different means of calculation preferred by the Applicant, Natural England and the RSPB, and showing the upper confidence limits derived from density.

Table 1. Number of gannet collisions attributed to pSPA

	Alone		In combination
	Median	Upper	
SMartWind	4	8	204
Natural England	5	12	179
RSPB	10	24	252

Table 2. Counterfactuals of Population Size and Growth rate, RSPB preferred metric highlighted.

	Alone				In combination			
	Density independent		Density dependent		Density independent		Density dependent	
	CPS	CPGR	CPS	CPGR	CPS	CPGR	CPS	CPGR
SMartWind	0.4	0.02	0.3	0.01	20.0	0.94	15.1	0.68
Natural England	0.5	0.02	0.4	0.02	17.7	0.82	13.4	0.59
RSPB	1.1	0.05	0.8	0.03	24.0	1.16	18.3	0.84

Kittiwake Mortality

14. The SPA (and pSPA) is the only English SPA supporting black-legged kittiwake in numbers of international importance. Between 2008 and 2011 the SPA, including the proposed extension, supported an average of 44,520 pairs of black-legged kittiwakes, which represents 2% of the North Atlantic biogeographic population, but is also a substantial decline on historical population levels. At the time of designation of the SPA, the population estimate was 83,370 pairs. This recent colony trend is represents a population decline of 4.1% per annum, 1987-2008. As such, the SPA is in unfavourable condition.
15. These colony declines are also reflected nationally, there has been an English population decline of 51% and Scottish 63%, between 1987 and 2008.
16. As set out in our last submission kittiwake was added to the Red List of the Birds of Conservation Concern December 2015.

Table 3. Number of kittiwake collisions attributed to pSPA

	Alone	In combination
SMartWind	1	108
Natural England	14	314
RSPB	52	356

Table 4. Counterfactuals of Population Size and Growth rate, RSPB preferred metric highlighted.

	Alone				In combination			
	Density independent		Density dependent		Density independent		Density dependent	
	CPS	CPGR	CPS	CPGR	CPS	CPGR	CPS	CPGR
SMartWind	0.0	0.00	0.0	0.00	2.8	0.12	1.0	0.03
Natural England	0.4	0.02	0.1	0.00	8.0	0.35	3.0	0.10
RSPB	1.4	0.06	0.5	0.02	9.1	0.40	3.4	0.11

The impacts on auk species

17. For ease of reference set out below are the population counterfactuals from our Deadline 5 response in relation to the auk species:

Guillemot

Table 5. The population counterfactuals as a result of guillemot mortalities predicted as a result of Hornsea Project 2. CPS is the Counterfactual of Population Size, CPGR is the Counterfactual of Population Growth Rate. CPS is the RSPB's preferred metric

	Alone		In-combination	
	CPS	CPGR	CPS	CPGR
SMartWind	0.8	0.04	8.1	0.36
Natural England	8.1	0.37	33.8	1.78

Razorbill

Table 6. The population counterfactuals as a result of razorbill mortalities predicted as a result of Hornsea Project 2. CPS is the Counterfactual of Population Size, CPGR is the Counterfactual of Population Growth Rate. CPS is the RSPB's preferred metric

	Alone		In-combination	
	CPS	CPGR	CPS	CPGR
SMartWind	4.2	0.19	4.9	0.22
Natural England	10.9	0.50	34.2	1.83

Puffin

Table 7. The population counterfactuals as a result of puffin mortalities predicted as a result of Hornsea Project 2. CPS is the Counterfactual of Population Size, CPGR is the Counterfactual of Population Growth Rate. CPS is the RSPB's preferred metric

	Alone		In-combination	
	CPS	CPGR	CPS	CPGR
SMartWind	1.2	0.05	10.3	0.44
Natural England	14.7	0.65	48.2	2.69

The RSPB's response to the Applicant's Deadline 7 Appendix O

18. The RSPB has a number of brief comments to make in relation to this document. For ease of reference we adopt the same structure as the Applicant's Appendix O.
19. It is clear that there are a number of issues that the RSPB and the Applicant do not and will not agree on. Consequently at this late stage we do not repeat them here. In this context, unless the RSPB expressly **agrees** with the Applicant's statement the absence of a comment by the RSPB should be interpreted as a clear disagreement and restatement of our position as set out previously and as summarised within the Report on the Implications for European Sites (RIES)(subject to our comments on the RIES set out in a separate doc).
20. The RSPB notes the Applicant's contention that:
- "the Applicant considers the RSPB have had ample time and information to consider the proposed mitigation and its implications for the offshore ornithology assessment."
21. Whilst the RSPB was grateful for receiving some information on Friday 4th December giving us some more time, we disagree that we have had *ample time* and sufficient information. For us to consider the proposed mitigation (the reduction in turbine rotor diameter and the increase in turbine hub height with attendant elevation of the lower swept area) the RSPB required the following information:
- Full predicted collision mortality for all model options. The outputs for Kittiwake using Option 2 were only presented at deadline 7, and were not broken down into seasonal values;
 - The PCH value used for calculations of Option 1 for the revised turbine layout. Only the results of the calculation were presented;
 - Flight height data used for the calculation of Option 4. Again only the results of the calculations were presented. The RSPB have continually asked for these data; and
 - The RSPB preferred avoidance rate for use for gannet during the breeding season.
22. Without the information listed above the assessment that the Applicant has provided is nothing more than a limited Collision Risk Model and therefore insufficient to enable the possible environmental impacts upon bird populations to be properly understood and evaluated.

Offshore

23. In addition the RSPB has the following specific comments in relation to certain paragraphs:
24. Para 1.4: The PCH data presented for East Anglia Three preliminary environmental information is derived from a completed survey and therefore will not become out of date. The Applicant had previously argued that these data were unavailable rather than “out of date”.
25. Para 1.5: in relation to the Applicant dispute that aerial surveys are automatically more accurate than boat-based surveys, and its question over the RSPB providing information to support our position on this, we wish it noted that digital aerial surveys have a number of advantages over boat based height estimation, and are therefore likely to be more accurate. Flight height estimates derived from digital aerial survey are typically presented with an estimate of the error surrounding them whereas boat based estimation have an unquantified error associated with them. Aerial digital methods also have the advantage that the images collected can be stored and subsequently re-analysed providing assurance that flight height estimates can be independently verified. A final advantage is that the risk of disturbance to birds during aerial surveys is greatly reduced, therefore minimising the problems of attraction and displacement associated with boat based surveys.
26. Para 1.8: As highlighted by Dr. Band in the CRM guidance, there are numerous sources of variability and uncertainty in collision risk modelling and these have been investigated in detail by Masden (2015). In it’s Appendix J to Deadline 1 the Applicant did give some consideration to uncertainty with respect to flight activity, flight height and avoidance rate. However variability in flight height was only presented for Band Model Options 2 and 3, neither of which were presented for the final HRA assessment and variability in avoidance rate was only expressed through presentation of a range of values, rather than using calculating confidence interval from the standard deviations presented in Cook *et al.*, (2014), as specifically recommended by the SNCBs (JNCC *et al.*, 2014). Furthermore, these sources of variability were presented in isolation, rather than combined, as has been made possible using the Masden (2015) update. No account has been given to the numerous other sources of variability and uncertainty as listed by Dr. Band in the guidance. Finally, most of the information presented in Appendix J has been rendered obsolete by the recent revisions to turbine specifications.
27. Para 1.9: As stated above, and contrary to the Applicant’s statement, the Applicant did not present standard deviations around avoidance rates in Appendix J of Deadline 1, rather it presented the outputs from a range of avoidance rates. Standard deviations are a statistical description of a specific quality of data distributions, and were presented for Avoidance Rates in the BTO avoidance rate review. Their use form part of the subsequent SNCB guidance. This approach was not adopted by the Applicant.
28. Para 1.10: It is the RSPB’s understanding that Masden (2015) was provided to the Applicant, and it has also been publically available for some time and has been highlighted by Natural England in para 4.5 of its Deadline 7 Submission, as one of the advances in assessment methodologies developed since the Hornsea Project One application. The work was overseen by a steering group, consisting of representatives from the industry and government, and has been widely

discussed. It can be considered extremely unlikely that the Applicant has not been aware of it, and possessed a copy of it, for some time.

29. Para 1.12: The RSPB wishes to point out that the Applicant has not presented the RSPB's preferred Option of the Band CRM, Option 2, for kittiwake and its preferred avoidance rate for gannet in the breeding season in the submissions relating to the revised turbine specifications, (Appendix B to December the 4th Submission, and Appendix Q to Response to Deadline 7).
30. Para 1.14 & 1.15: in relation to the extent of breeding season the RSPB notes the Applicant's comments, but believes that as the assessment focuses on the breeding kittiwake at the pSPA, the timing of breeding considered should reflect that of these birds.
31. It is also worth noting that the Applicant originally, in its assessment of breeding season impacts set out in its Hornsea Project Two Environmental Statement, defined the breeding season for kittiwake as May to July (ES, Chapter 5, Ornithological Technical Report Part 1, para 6.1.263, p82). Although this was in contrast with what Natural England considered to be the breeding season namely March to August (as set out in NE's RR, paragraph 55), there is considerable overlap between the seasons, especially bearing in mind that failed breeders may be joining non-breeders any time during the months that successful breeders are still based at the colony. The RSPB wishes it noted that most adult kittiwakes are back at the colony by March, with the first birds returning in February, so February is both breeding and non-breeding season, depending on individuals and that most chicks have fledged by mid to late July.
32. Para 1.19 – The RSPB disagrees with the Applicant's interpretation. Our position is as set out previously, most recently in our Deadline 7 submission.

Intertidal

33. Para 1.24: The RSPB can confirm that all of the counts supplied in its Deadline 6 response come from the northern WeBS sector, which holds Project 2's proposed landfall site.

Monitoring

34. Para 1.33: The RSPB notes the Applicant's statement that the intertidal monitoring provisions can be found in paras 8.2.14 to 8.2.17 of the revised Outline Ecological Management Plan submitted at Appendix X for Deadline 5. The RSPB had checked this document thoroughly as part of our response at Deadline 6 and can confirm that there are no ornithological monitoring provisions within the paragraphs identified by the Applicant. The RSPB would expect there to be a clear requirement to undertake ornithological monitoring, at the very least in the form of a pre-construction baseline survey and post-construction monitoring of population levels. The fact that this is not stipulated within the DCO, the CoCP or the EMP means that the Applicant will not be held to do this. The RSPB considers that the prospect of substantial construction works being undertaken across the Humber Estuary SPA without any ornithological monitoring is totally unacceptable.

The RSPB's response to the First Rule 17 Letter

35. The RSPB wishes to comment on a number of the questions set by the Examining Authority.

1. Please provide confirmation or otherwise that the removal of the 5MW Wind Turbine Generator (WTG) option will reduce the maximum number of offshore wind turbines from 360 to 300?

36. The RSPB notes the Applicant's confirmation that the maximum number of turbines is reduced to 300.

4. The Applicant is requested to submit any updates for the Development Consent Order (DCO) to reflect the removal of the 5MW WTG option and an increase in hub height of 3.5m.

37. The RSPB has already commented upon a number of provisions relating to various aspects of the draft DCO. Provided that changes are limited to the textual ones required for the removal of the 5MW option, with the reduction to a maximum number of 300 turbines, along with the increase in hub height of 3.5m the RSPB would have no objections.

38. Similarly, for the further increase in hub height by a further 5m to 107.5m, the RSPB would have no objection to the changes in the DCO, provided that they are limited to this textual change.

39. However, in either case, should changes go beyond that to the extent that they could be considered to alter the nature of the scheme which has been considered at Examination then the RSPB would formally object to those further changes.

10. Will Natural England (NE) please provide clarification of the reasons for the differences in their assessment of project impacts, in combination, on kittiwakes, between Hornsea Project 1 and Hornsea Project 2?

40. The RSPB welcomes the information presented in Section C - Natural England's Response To The Examining Authority's Written Questions Issued On 26th November 2015, and in particular notes paragraphs 4.16 to 4.27. These detail the work commissioned by Natural England, with JNCC and SNH, in response to the RSPB position on Hornsea Project 1 and the four Forth and Tay wind farm developments. This work has not been made public, and has not been seen by the RSPB, but it is clear from the Natural England response that this independent review was supportive of the RSPB position on PBR and PVA. Particularly with regard to:

- The unsuitability of PBR for assessment;
- The focus on density independent PVA models for assessment;
- The use of counterfactual metrics as the correct output for PVA; and
- The fact that all thresholds are essentially arbitrary.

11. The views are sought of NE and the Applicant on the submission by the Wildlife Trusts (TWT) for Deadline 5 in relation to marine mammals and the potential Southern North Sea draft Special Area for Conservation (dSAC) for harbour porpoise; in particular TWT suggestions that:

- the Applicant's addendum to its Habitat Regulation Assessment (HRA), in relation to consideration of the dSAC is not able to conclude 'no adverse impact on integrity';

41. The RSPB has considered TWT's Deadline 5 response and the Applicant's response to it in Appendix B of their Deadline 6 submission. We support the views expressed by TWT.
- **it is fundamentally incorrect to assess the effect on site integrity by predicting whether the impact will affect the whole North Sea population;**
42. The RSPB agrees with TWT on this issue. There is a clear distinction between the population within a Natura 2000 site (in this case the dSAC) and the wider biogeographic population (in this case the North Sea). The RSPB notes the TWT observation
- “it is known that the North Sea does not have a homogenous distribution of harbour porpoise, due to different areas providing better foraging opportunities than others. Indeed the Hornsea zone is a significant hotspot for the species”.
43. Such hotspots provide a clear rationale for the selection of the boundaries of Natura 2000 sites as they represent particularly important sites for those species. Impacts on those sites are likely to be disproportionately harmful to the species, and it is therefore essential that the impact is assessed by reference to the proportion of the population within the Natura 2000 site and not by comparison to the overall population. The RSPB notes with approval TWT's quote from section 4.6.3 of the European Commission's Managing Natura 2000². We note a further provision in this section:
- “In a dynamic ecological context, it [integrity of the site] can also be considered as having the sense of resilience and ability to evolve in ways that are favourable to conservation.”
44. The RSPB notes TWT's concerns about the potential impacts over time:
- “The piling, although a total duration of 1.32 years, would take place over a period of 5 years and it has been accepted by the applicant that harbour porpoise levels would not be expected to return to baseline until cessation of all piling. Harbour porpoise have a life span of 12-15 years; if a significant number of individuals were displaced for the duration of the piling, effectively this prime foraging habitat would be removed from the species' range and several seasons of reproduction may be impacted”.
45. We consider that the concerns expressed by TWT above directly compromise the resilience of the site and its ability to evolve in ways favourable to conservation. We note that the Applicant points out that there are periods of non-piling during the construction phase, but we do not consider that it can be assumed that animals which have been driven from the area by piling activity will automatically return. This impact is also only properly understood on a site, rather than population, based approach to assessment.
46. The role of the HRA is to evaluate the likely impact on the population within that Natura 2000 site, whereas the role of the EIA is to evaluate the likely impact on the North Sea population. It is essential that these two different impacts are kept strictly separate. The fact that there are no definitive site boundaries (a point raised by the Applicant in response to

² http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

TWT) makes assessment harder than it would otherwise be but, as TWT have highlighted, there are hotspots of harbour porpoise usage in the vicinity of the Hornsea Project 2 scheme and details of this hotspot could be used as a proxy for both the site boundaries and its designated population levels.

- **there is enough doubt and uncertainty as to the population consequences of disturbance at either a site or population level; and**

47. The RSPB defers to TWT on this point.

- **that a high level of impact would result from the scenario of pile driving with no guaranteed mitigation of reduction of noise at source.**

48. The RSPB supports TWT's view on this issue. If the DCO does not require the Applicant to mitigate the impacts then it cannot be assumed, on a precautionary basis, that the Applicant will mitigate the impacts. The RSPB fully supports TWT's view that

“If unmitigated pile driving were removed as an option within the DCO, we believe it is more likely that ‘no adverse effect on integrity’ could be concluded for the dSAC.”

49. This is consistent with the RSPB's view, expressed throughout the Examination that the only way to guarantee that an action is taken during the construction, operation and decommissioning of the scheme is for it to be specifically required by the DCO.

The RSPB's response to the Second Rule 17 Letter

50. The RSPB notes that the Applicant has provided answers to these questions in its Deadline 7 response. Where relevant we comment upon these points.

51. The RSPB consider that our ability to properly contribute to the Examination has been prejudiced by the introduction of this late information, and it is only the Applicant's early submission of responses to the second Rule 17 letter that allows any comments upon the new information submitted.

52. Consequently we respectfully ask the ExA to allow the RSPB to submit a further, detailed response once it has had time to properly consider the information submitted and received the additional information required to enable a detailed response, or alternatively for the ExA to disregard the new information and the proposed changes.

2. Will Natural England (NE) please identify a level of kittiwake mortality in-combination which it could accept would not have an adverse effect on the integrity of the Flamborough and Filey Coast pSPA and the Flamborough Head and Bempton Cliffs SPA?

53. The RSPB notes that this request is for Natural England.

54. However we wish to add that we are profoundly concerned because it will not have the opportunity to comment upon NE's response to this question.

55. The answer to this question cuts to the heart of the in-combination impacts for kittiwake at the Flamborough and Filey Coast pSPA and the Flamborough Head and Bempton Cliffs SPA. Natural England's position, when coupled with Collision Risk Models (CRM) for the revised scheme, may indicate to the ExA that there is no longer a risk of an adverse effect on integrity of these sites when considered in-combination with other schemes. The RSPB is therefore extremely concerned that there will be no opportunity to scrutinise the figures and comment on Natural England's conclusions on this point.

3. Please can the Applicant clarify whether there are any other implications of the changes put forward by the Applicant on 4 December 2015? Your response should, as a minimum, include reference to the area of the seabed needed for the reduced number of turbines and the operations proposed by E.ON E&P Ltd, and to navigation routes.

56. Without sight of the information it is not possible for us to comment.

4. Please can the Applicant provide details of the underpinning assessment of the potential implications for offshore ornithology of the changes proposed on 4 December 2015.

57. The RSPB has endeavoured to consider the proposed changes to the scheme. However, we have only been provided with key turbine parameters as a result of an email exchange with the Applicant on 4 December. This makes it extremely difficult to scrutinise the implications of the change or comment upon it.

58. The RSPB notes the Applicant's Deadline 7 response points to pages 14-17 of Appendix R. However, we can identify nothing in this Appendix, or in the remainder of the Applicant's response to this question which can fairly be categorised as "details of the underpinning assessment" as requested by the ExA. We note that the Applicant has not provided information in relation to the original modification, instead cross-referencing to the answer here.

59. The RSPB considers that the Applicant has not provided sufficient information for either of the proposed changes and that consequently the ExA cannot accept the contention that the changes to the scheme do not constitute an impact.

Recommended Changes to the draft Development Consent Order

60. For the convenience of the ExA the RSPB has gathered its suggested changes to the DCO into this short document.

61. The changes have been updated to reflect version 8 of the draft DCO.

62. The RSPB's suggested changes to existing provisions are in track changes.

Schedule A – Authorised Project

Requirement 6, Ecological Management Plan

63. The RSPB recommends the following change:

“(2) The ecological management plan must include an implementation timetable and a monitoring plan and must be carried out as approved.”

Requirement 7, Code of Construction Practice

64. Under (2) we recommend the following additional provision:

“(x) details of the environmental monitoring required;”

Restricting ducting to the first phase of intertidal works

65. To reflect the concerns expressed by the RSPB that the DCO does not currently include a provision restricting ducting to the first phase of any multi-phase work on the intertidal, the RSPB recommends the following addition:

“Requirement 27, Duct laying in the intertidal area

In the event of a phased installation of the electrical circuits through the intertidal zone all ducting work must be completed during the first phase.”

66. Alternatively this text could be inserted as a requirement in DML A2 and B2, Condition 18.

DMLs A1 and B1 – Generation Assets

Condition 14 – Construction monitoring

67. The RSPB recommends the following addition under (2):

“(c) any ornithological monitoring required by the ornithological monitoring plan submitted in accordance with Condition 8(2)(k).”

DMLs A2 and B2 – Transmission Assets

Condition 8 – Pre-construction plans and documentation

68. The RSPB recommends the following addition to the construction method statement under (2)(b):

“(vii) detailed construction methods and timings for the intertidal works.”

Condition 13 – Pre-construction monitoring and surveys

69. The RSPB recommends the following addition under (2):

“(e) an ornithological baseline survey of the intertidal area.”

Condition 14 – Construction monitoring

70. The RSPB recommends the following addition under (2):

“(c) recording the distances from construction activity at which all SPA qualifying species in the intertidal area feed and roost.”

Condition 15 – Post-construction

71. The RSPB recommends the following addition under (2):

“(f) a programme of ornithological surveys of the intertidal area for a period of five years.”

Condition 18 – Restrictions in intertidal area and Humber Estuary Special Area of Conservations

72. The RSPB recommends the following changes:

Delete:

~~“(3) The undertaker must not construct or install those licensable activities comprised in Work No. 4A or Work No. 5A in the intertidal area during the overwintering period unless otherwise agreed in writing with the MMO, in consultation with Natural England.”~~

Insert:

“(3) Access onto the intertidal area, for the sole purpose of removing construction equipment, will be permitted for no more than 7 consecutive days, commencing on 1 October.”

73. The RSPB recommends the following amendment:

~~“(4) The undertaker must not construct or install those licensable activities comprised in Work Nos. 4A and 5A in the intertidal area within 500 metres seaward of the seawall during the period of time commencing two hours before a high tide predicted to be greater than 6.5 metres Chart Datum and ending two hours after a high tide predicted to be greater than 6.5 metres Chart Datum between 1 April and 31 May (inclusive) and 1 August to 30 September (inclusive), unless provided for in the construction and monitoring programme submitted and approved under Condition 8(2)(a) or the construction method statement submitted and approved under Condition 8(2)(b) or~~ unless otherwise agreed in writing by the MMO, in consultation with Natural England.”

Overall Conclusions

74. As mentioned above the metric we have the greatest confidence in the Counterfactual of Population Size after 25 years, as derived from density independent PVA modelling. This is the predicted percentage difference in the population size after the lifetime of the development due to mortality attributable to that development, alone and in combination with other developments. The figures for this percentage decrease of the pSPA population for Hornsea Project 2 alone and in combination, along with our conclusions for the auk species:

Table 8 Counterfactual of Population Size impacts of the Hornsea Project 2 wind farm over 25 years

	Hornsea Project 2 Alone	In Combination
Gannet	1.1%	24.0%
Kittiwake	1.4%	9.1%
Guillemot	8.1%	33.8%
Razorbill	10.9%	34.2%
Puffin	14.7%	48.2%

75. The following section sets out the RSPB's final position on possible impacts to all bird species.

Offshore impacts

Displacement

76. Although the RSPB set out its final position on guillemot, puffin and razorbill in our Deadline 7 Submission, we repeat them here to give a composite statement on the likely impacts of the revised scheme submitted on Friday 4 December, since the assessment underpinning this position on auk species are unchanged by the Applicant's revised turbine specifications, as these will only have an influence on predictions related to collision. In addition the recent reassessment of the status of the international puffin and razorbill populations by the International Union for the Conservation of Nature (IUCN) on 29th October 2015 should be noted.

Guillemot and Razorbill

77. The RSPB notes again that the UK has a significant proportion of the biogeographical and global population of both guillemot and razorbill, and as such has a responsibility to protect this population.

78. There are very little survey data for calculating displacement rates of auks, but what exists includes potential displacement rates of 70%. Therefore it is entirely plausible that displacement could occur at higher rates than this, so the RSPB views this as a reasonable value.

79. The Applicant's PVA modelling predicts potential decreases in guillemot population size of 8.1% with the Project alone and of 33.8% in combination and for razorbill 10.9% with the Project alone and 34.2% in combination, are considerable. As such, the RSPB is unable to rule out the possibility of an adverse effect on these SPA species and therefore **Maintains its objection on the grounds of potential impact on the guillemot and razorbill pSPA population through the project alone and in combination with other projects.**

Puffin

80. The RSPB note that it is highly probable that the pSPA population has decreased since 2000. The IUCN Red List criteria for puffin has recently been changed due to further concerns about their status and the species has been added to the UK Birds of Conservation Concern's Red List. As such, the protection of this iconic species is of paramount importance.
81. The Applicant's PVA modelling predicts a decrease in puffin population size of 14.7% with the Project alone and of 48.2% in combination. In the context of the global and national population decline, such large reductions in population size are unacceptable. As such, the RSPB is unable to rule out the possibility of an adverse effect on this SPA species and therefore **Maintains its objection on the grounds of potential impact on the puffin pSPA population through the project alone and in combination with other projects.**
82. The RSPB welcomes the mitigation suggested by the Applicant by way of changes to the turbine specifications however, based on the information currently available, the RSPB maintains its objection on the grounds of potential impact on the kittiwake SPA and pSPA population through the project alone and in combination with other projects.
83. Again the RSPB welcomes the mitigation suggested by the Applicant by way of changes to the turbine specifications however, based on the information currently available, the RSPB maintains its objection on the grounds of potential impact on the gannet pSPA population through the project alone and in combination with other projects.

EIA species assessment

84. As previously stated the RSPB disagrees with the Applicant's use of PBR for those species included as part of the EIA assessment since this method is wholly unsuitable and as such we do not accept the Applicant's conclusions.
85. This position, although not adopted by Natural England, is reinforced by their reporting of work commissioned by them in response to the RSPB critique of PBR. This includes the following recommendation (paragraph 4.27 of Natural England's written submission for Deadline 7):

“avoid using PBR outputs given the lack of empirical support for the thresholds derived from the method and lack of transparency in how to relate PBR values to conservation objectives to maintain or restore a population”

86. The RSPB note the use of PVA, as opposed to PBR, by Natural England in their EIA assessment of gannet for in-combination impacts. They refer to the gannet PVA previously carried out under the SOSS programme. While this work is valuable, it did not provide the counterfactual outputs preferred by the RSPB and confirmed as the most robust metric by the independent review commissioned by JNCC and Natural England, which though unpublished is described by Natural England in its written submissions for Deadline 7. Under the revised turbine specifications detailed by the Applicant in paragraph 3.5 of Appendix Q submission for Deadline 7, the revised collision risk modelling predicts an in-combination annual mortality of 2,976 gannet compared with 3,021 based on the previous turbine specifications. Given the uncertainty around these estimates and the conclusions described by Natural England of the independent review of the RSPB critique of assessment methods for Hornsea Project 1 and the Forth and Tay wind farms

(paragraph 4.27 of the NE written submission for Deadline 7: “*thresholds applied to metrics are arbitrary*”) it is impossible to see a material difference between these values to justify a change in position, and the RSPB maintains its position, in agreement with Natural England’s original position, that a significant effect on the North Sea population of gannet cannot be excluded for the project in-combination

87. Therefore in the absence of any robust assessment for kittiwake, great black-backed gull, lesser black-backed gull, guillemot, razorbill, and in the context of the scale of impact predicted for gannet, the RSPB maintains its objection to Hornsea Project Two on EIA terms for these species.

Overall Conclusions offshore

88. Throughout our submissions the RSPB has set out its concerns over the reliability of the collision risk modelling and displacement assessment undertaken by the Applicant. The RSPB considers that the mortality from this scheme is likely to lead to a deterioration in individual SPA species’ populations, such that adverse effects on the integrity of those features cannot be ruled out.

89. In addition to the consideration of the Flamborough SPA/pSPA species on their own, regard must be had to the additional reason for the pSPA namely the breeding seabird assemblage, to which all of the individual species under consideration contribute. It is important to recognise therefore that any assessment of effects on individual species must then be followed by consideration of all the effects together, such that any resulting impact on the breeding seabird assemblage can then be assessed. This should occur even before other plans and projects that may contribute to the effects on the SPA and its species are considered. The combined effect of these individual species’ impacts means it is not possible to rule out an adverse effect on the integrity of the SPA seabird assemblage feature.

90. In summary, the RSPB notes that for reasons given above, the assessment of the collision risk to gannet, kittiwakes, greater and lesser black backed gulls (both migratory, breeding and non-breeding birds), is inadequate until a more rigorous assessment of population scale impacts is carried out. Therefore, the RSPB maintains its objection on the grounds of possible effects of Hornsea Project 2 on the following EIA species: gannet, kittiwake outside the breeding season, lesser black-backed gull and great black-backed gull.

91. In addition it is the RSPB’s view that the Secretary of State should take the likely impacts on the wider populations into account when deciding whether to consent this scheme as required by regulations 9 and 9A of the Conservation of Habitat and Species Regulations (the second sentence of Article 4(4) of the Birds Directive³). This consideration should include all the EIA and migratory species.

Intertidal impacts

92. The RSPB remains concerned about the following outstanding issues:

- Although the RSPB welcomes the textual amendment to a 6.5m Chart Datum tide height, the RSPB remains profoundly concerned that the addition of a rider pointing to subsequent documents has the ability to fundamentally undermine the effectiveness of this provision. Consequently the RSPB does not accept that in its current form this provision is capable of

³ The RSPB raised this point at para 3.11 of its Written Representation.

avoiding harm to the intertidal area. We do not understand the importance that the Applicant attaches to this new provision, which was introduced at the same time as the tide height text was amended.

It should be noted that the RSPB has accepted a reduction in the distance restriction from 1km to a 500m, which we highlight as evidence of our efforts to find an effective solution.

- The RSPB does not consider that the text permitting working in the intertidal area during the overwintering period is workable. The provision has not been subjected to any environmental assessment as part of the preparatory work for this scheme and therefore cannot go ahead without a fresh assessment being undertaken. Consequently the RSPB does not consider that the condition is capable of securing the objective that the Applicant seeks.

93. In addition, the RSPB considers that the absence of effective monitoring provisions means that it will not be possible for the Applicant to identify harm as it occurs, meaning that it risks the harm being sustained.

94. Consequently, despite our best endeavours, we are unable to agree with the Applicant's contention that the construction works will not have an adverse effect upon the Humber Estuary SPA and the ornithological features of the Humber Estuary Ramsar site.

Alternative solutions

95. As set out in the offshore and intertidal sections above, the RSPB does not consider that it is possible for the ExA or the Secretary of State to conclude that the Hornsea Project 2 scheme will avoid an adverse effect on European sites. Consequently, as set out in our Written Representation, and restated in our Final Submission on Alternative Solutions submitted for Deadline 7, the RSPB considers whether there are alternative, less damaging, schemes which are capable of delivering the 1.8 GW of renewable electricity that the Hornsea Project 2 scheme is intended to supply.

96. The RSPB advances the following views on the alternative solutions available:

- The renewable energy schemes that have been consented are sufficient to meet the Government's target of 10 GW by 2020 (these schemes are already funded and/or under construction) and up to another 10 GW by 2030 (sufficient schemes have already been consented to take up the funding that the Government intends to make available, subject to price constraints);
- The Applicant has provided no information to suggest that there are no alternative solutions to Hornsea Project 2;
- The Navitus Bay decision has demonstrated that the requirements of the Renewable Energy Directive do not preclude considerations of environmental harm; and
- Where there is a conflict between the requirements of the Renewable Energy Directive and the Birds and Habitats Directives the Government should prefer schemes which are best able to balance these conflicting demands and avoid adverse effects on biodiversity, including European sites.

97. Recent constraints on Government funding for renewables, especially offshore wind, mean that there are a substantial number of consented but currently unfunded alternative solutions that

are environmentally less damaging to Hornsea Project 2, and that in our view the Habitats Directive requires should be preferred to Hornsea Project 2.

98. Clearly, the alternative solutions test in regulation 62, Conservation of Habitat and Species Regulations (Article 6(4) Habitats Directive) only applies if it is not possible to conclude no adverse effects on the integrity of the Natura 2000 sites. However, as set out above, we contend that there is still a general responsibility on Government to avoid damage and deterioration affecting those same bird species and which should be taken into account when making a decision on this scheme. This arises from regulations 9 and 9A Conservation of Habitat and Species Regulations (the second sentence of Article 4(4) of the Birds Directive “Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.”).