



**Written Representation  
for the  
Royal Society for the Protection of Birds**

**OVERVIEW**

**Comments on selected Deadline 5 and Deadline 5a submissions**

**Submitted for Deadline 6**

**27 July 2022**

**Planning Act 2008 (as amended)**

**In the matter of:**

**Application by Hornsea Project Four Limited for an Order  
Granting Development Consent for the Hornsea Project Four Offshore Wind  
Farm**

**Planning Inspectorate Ref: EN010098**

**RSPB Registration Identification Ref: 20029909**

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## 1. Introduction

### Scope of submission

- 1.1. This submission sets out the RSPB's comments based on the documents submitted by the Applicant and Natural England at Deadlines 5 and 5a relating to:
  - Offshore ornithology matters;
  - Compensation measures.
- 1.2. The RSPB's detailed response on these matters is set out in the following documents accompanying this submission:
  - Annex A: Offshore ornithology matters;
  - Annex B: Compensation proposals.
- 1.3. This document provides an overview and summary of those detailed comments.

## 2. Offshore Ornithology – summary of RSPB position

- 2.1. Below, the RSPB summarises its comments in respect of offshore ornithology matters set out in Annex A to this submission. It is based on comments on the documents submitted by the Applicant and Natural England at Deadlines 5 and 5a.
- 2.2. The RSPB has reviewed the updated MRSea approach and modelling (REP5a-010 and REP5a-024) and agree that the baseline data are now fit for purpose. However, we agree with Natural England (AS-048 dated 19 July 2022) that there are inconsistencies in the Revised Ornithology baseline (REP5a-010) and the data used for collision risk modelling (REP5a-012). As such we have only been able to come to conclusions on adverse impacts arising from the project alone for the guillemot and razorbill populations of the Flamborough and Filey Coast SPA.

### Project alone – RSPB AEOI conclusions

- 2.3. For the species where it has been possible to reach a conclusion on adverse effect on the integrity of the FFC SPA from the project alone, the RSPB's conclusions are:
  - **Guillemot:** cannot rule out adverse effect on site integrity due to the impact of displacement mortality.
- 2.4. Because of problems with how the assessment has been presented it is impossible to reach conclusions as to adverse impacts on the following features of the Flamborough and Filey Coast SPA for the project alone:
  - **Kittiwake:** the impact of collision mortality on the kittiwake population;
  - **Gannet:** the impact of combined collision and displacement mortality on the gannet population;
  - **Seabird assemblage:** the impact of combined collision and displacement mortality on the seabird assemblage.

### Project in combination with other plans and projects – RSPB AEOI conclusions

- 2.5. The RSPB's conclusions for each feature of the FFC SPA from Hornsea Four in-combination with other projects are:
  - **Kittiwake:** adverse effect on site integrity exists due to the impact of collision mortality on the kittiwake population;
  - **Gannet:** adverse effect on site integrity exists due to the impact of combined collision and displacement mortality on the gannet population;
  - **Guillemot:** adverse effect on site integrity exists due to the impact of displacement mortality on the guillemot population;
  - **Razorbill:** cannot rule out adverse effect on site integrity due to the impact of displacement mortality on the razorbill population;

- **Seabird assemblage:** adverse effect on site integrity exists due to the impact of combined collision and displacement mortality on the seabird assemblage.
- 2.6. We disagree with the Applicant on the level of uncertainty inherent in the assessment and the subsequent need for precaution. We have highlighted this in several areas, including the use of a range of rates for displacement assessment and the use of counterfactual metrics.

### Highly Pathogenic Avian Influenza

- 2.7. We have highlighted the importance of the recent outbreak of Highly Pathogenic Avian Influenza on the seabird populations of the East Coast of the UK. This has strong implications for the assessment of offshore wind farms, particularly in the context of the robustness of the population to additional mortality and whether the population can continue to be considered in favourable conservation status

### Counterfactual metrics

- 2.8. We have reiterated our position on the use of counterfactual metrics for PVA, that both the Counterfactual of Population Size (CPS) and the Counterfactual of Population Growth Rate (CPGR). As the Applicant disagrees with our position on this, which is also reflected in guidance from Natural England, and reviews by the British Trust for Ornithology and the UK Centre for Ecology and Hydrology, we have presented our own calculations of CPS for the relevant predicted mortalities.

### Displacement mortality

- 2.9. Following review of the Applicant's arguments, for our calculations we have described what we consider to be plausible and probable values for displacement and mortality rates and present them alongside the Applicant's preferred values.
- 2.10. The RSPB has presented calculations of displacement mortalities and CPS values derived from the Applicant's tables. These figures show that for **guillemot**, the additional mortality predicted to arise through displacement will result in the Flamborough and Filey Coast SPA population being a probable **13.9 -20.6%** lower after the lifetime of Hornsea Project Four wind farm than it would be without the development, and **24.0-41.7%** lower in-combination with other developments, although plausibly it could be as much as 53.1% lower through the project alone, and 79.4% in combination.
- 2.11. For **razorbill**, the additional mortality predicted to arise through displacement will result in the Flamborough and Filey Coast SPA population being a probable **2.5-6.4%** lower after the lifetime of Hornsea Project Four wind farm than it would be without the development, and **11.1-21.9%** lower in-combination with other developments, although plausibly it could be as much as 21.4% lower through the project alone, and 53.4% in combination.
- 2.12. The magnitude of these figures, in comparison to those suggested by the Applicant, has implications for any resulting compensation requirements, and whether the currently proposed measures are capable of meeting this scale of impact (see section 3 of Annex B for further discussion on this matter).

### 3. Compensation – summary of RSPB position

#### Introduction

3.1. This section summarises the RSPB’s comments on the Applicant’s current compensation proposals, based on a review of documents submitted by the Applicant at Deadlines 5 and 5a of the Examination. We have sought to distil our current position on those proposals to assist the Examining Authority. We have structured our comments as follows:

- Strategic compensation
- How we have assessed the compensation measure proposals
- Magnitude of compensation required
- Summary of RSPB view of the state of play with the Applicant’s species’ compensation proposals
  - Guillemot and razorbill compensation
  - Kittiwake compensation
  - Gannet compensation

3.2. More detailed assessments of these matters are set out in Annex B to this submission.

#### Strategic compensation

3.3. In its various compensation roadmaps and related documents submitted at Deadline 5, the Applicant has set out its revised approach to the matter of strategic compensation. This includes amendments to the compensation scheme set out in substantive revisions to Schedule 16 (Compensation to protect the coherence of the National Site Network). The overall approach is set out in REP5-086 (Orsted’s approach to strategic ecological compensation, Revision 01).

3.4. The RSPB welcomes the national level discussions on strategic compensation. However, it is evident that there is no system of strategic compensation currently in place, or which will be in place when the Secretary of State has to make a decision on the Hornsea Four DCO (by February 2023). Therefore, the Secretary of State will not be able to rely on strategic compensation as an alternative to the Applicant’s project level compensation.

3.5. The Offshore Wind Industry Council’s Derogation Sub-group/Pathways To Growth pilot studies described are embryonic, with no detail available to assess them. The limited information that is available confirms the RSPB’s view that no weight should be placed on the Applicant’s strategic compensation proposals, including their application to adaptive management measures.

3.6. This is most evident in connection with the repurposing of offshore structures e.g. for artificial nesting. As we set out in more detail in section 7 in Annex B, it is evident that the regulators (BEIS and OPRED) have significant concerns regarding the repurposing of offshore infrastructure which has resulted in them requesting a pause in the proposed pilot study work.

3.7. The Defra Marine Recovery Fund and/or centralised coordination of developer funded action could help facilitate strategic measures for nature recovery in the future. However,

the Marine Recovery Fund itself does not yet exist, nor are there any solid details on when and how it will be set up and managed.

- 3.8. Therefore, it is the RSPB’s view that “strategic compensation” is not yet at a sufficient stage of development and implementation whereby the Secretary of State can rely on it as an alternative to the provision of Hornsea Four project level compensation measures. Therefore, it cannot be relied on as a compensation measure with a reasonable guarantee of success of protecting the coherence of the UK National Site Network for the impacted species.

### How we have assessed the compensation measure proposals

- 3.9. For each compensation proposal, we have assessed the current proposals against the criteria for compensation set out in our main Written Representation and subsequent submissions, and accorded them each a Red, Amber, Green rating.
- 3.10. The RSPB’s Red, Amber, Green (RAG) rating is assessed as follows:
- **RED:** Criteria not met and substantive issues relating to viability and feasibility of the measure are unresolved. Substantial evidence gaps remain. Unless complex issues resolved before consent, RSPB advice is that the Secretary of State cannot conclude that the coherence of the National Site Network for the affected species will be protected.
  - **AMBER:** Criteria not fully met: significant issues relating to viability and feasibility of the measure are unresolved. Significant evidence gaps remain. Unless these issues are resolved before consent, the RSPB advice is that the Secretary of State is at risk of agreeing to a compensation measure that will not protect the coherence of the National Site Network for the affected species.
  - **GREEN:** Criteria met. No substantive or significant issues relating to viability and feasibility of the measure remain. Any remaining issues are relatively minor and could be dealt with through requirements under the DCO.
- 3.11. Abbreviated versions of this assessment are presented for those species’ compensation measures with relatively minor updates at Deadlines 5 and 5a: kittiwake and gannet.
- 3.12. Where possible, we have then set out what additional information, on the feasibility and viability of the compensation measure, we consider the Secretary of State requires before they are able to decide on whether to consent the DCO. This includes whether or not, having received that further information, we think it would be advisable for the Secretary of State to re-open consultation on the compensation proposals with Interested Parties before determining the DCO.

### Magnitude of compensation required

- 3.13. Agreement has yet to be reached on:
- The scale of predicted impact on each of the four seabird species, and the extent of the uncertainty around the prediction, from the Flamborough and Filey Coast SPA that would need to be compensated for;

- How that scale of impact is converted into appropriate and robust compensation objectives for compensation measures. For example, for guillemot and razorbill this would need to be based on (i) improving breeding populations outside the UK (predator eradication) and (ii) improving survival of non-breeding birds from unknown populations (bycatch reduction). See section 2 in RSPB REP4-057 (calculation methods) and section 3 in REP5-120 (compensation connectivity) for more detailed comments on these matters.
  - How that affects the magnitude of benefit that each compensation measure needs to generate in order to protect the coherence of the UK National Site Networks of the impacted species.
- 3.14. Currently, the RSPB does not consider the Applicant's description of what scale of compensation is required is appropriate and therefore there is no agreement on this critical issue.

### Summary of the RSPB's view of the state of play with the Applicant's species' compensation proposals

- 3.15. This section collates the summaries from each of the sections on species' compensation measures.
- 3.16. Collectively, the Hornsea Project Four compensation proposals continue to have significant uncertainties attached to them, even at this late stage of the examination process. We consider this results from a general failure to:
- Identify specific locations and associated specific mechanisms in sufficient detail for each compensation measure;
  - Set out robust evidence to justify the choice of location and mechanism, notwithstanding claims to the contrary. For the reasons set out elsewhere, the RSPB considers the proposed measures fall short in significant ways that bring each measure into serious doubt based on the information made available in both the application documentation and submissions to the examination;
  - Set out in detail how significant legal and regulatory barriers associated with each measure will be overcome, instead asserting confidence these barriers will be in the future once DCO consent has been granted.
- 3.17. We consider these all undermine the ability to assess and determine whether a specific compensation measure can meet the ecological, technical and legal requirements, to enable the Secretary of State to have confidence that it will have a reasonable guarantee of success, and thereby protect the overall coherence of the relevant species' National Site Network. For some proposals, the issues are so fundamental as to question whether the measure should be considered as a possible compensation measure.
- 3.18. Due to the significant uncertainties that remain, we have recommended where we consider it would be necessary for the Secretary of State to consider requesting further, detailed information from the Applicant and to then consult with Interested Parties on that information before deciding whether to consent the DCO. At this stage we consider this is necessary for the compensation proposals for each species (kittiwake, guillemot and



razorbill) with the exception of gannet where we consider there is no credible or feasible compensation proposal in front of the examination.

- 3.19. We consider it regrettable that these issues have not been resolved through a combination of fuller application documentation and submission of more substantive information during the examination. Depending on the Secretary of State’s response, this could lead to delay in reaching a decision on the DCO.

*Guillemot and razorbill compensation measures*

- 3.20. Tables 1 and 2 below summarise the RSPB’s overall rating of the Hornsea Four compensation measures for guillemot and razorbill, together with recommended actions to resolve the substantive issues that remain.

Predator eradication measures

**Table 1: the RSPB’s overall rating of the Hornsea Four predator eradication compensation measure for Guillemot and Razorbill and recommended actions**

<b>RSPB’s OVERALL RATING OF COMPENSATION MEASURE FOR GUILLEMOT AND RAZORBILL</b>		
<b>- Predator eradication</b>		
<p>Key issues to resolve revolve around the inadequate evidence base underpinning the Applicant’s proposals. Below we set out the actions required to address these prior to the Secretary of State carrying out further consultation with interested parties.</p> <ul style="list-style-type: none"> <li>- Lack of coherent strategy for identifying islands/island groups for predator eradication and associated detailed documents;</li> <li>- Inadequate evidence to demonstrate benefit to breeding guillemot and razorbill of proposed eradication strategy;</li> <li>- Lack of evidence of connectivity of guillemots and razorbills from Channel Islands to respective UK National Site Networks.</li> </ul>		
<b>RSPB observation/ Issue</b>	<b>Action required by the Applicant</b>	<b>What would this provide?</b>
Lack of coherent strategy for identifying islands/island groups for predator eradication and associated detailed technical documents	<p>Prior to determination of DCO by Secretary of State, submit full versions of the following documents for review by Interested Parties:</p> <ul style="list-style-type: none"> <li>- Project selection, including coherent strategy and rationale for scoping islands/island groups in and out</li> <li>- Feasibility Study</li> <li>- Implementation Plan (Project Plan, Operational Plan, Monitoring &amp; Evaluation Plan)</li> <li>- Biosecurity and Emergency Response Plan.</li> </ul>	<p>Full information for review by Interested Parties to assess:</p> <ul style="list-style-type: none"> <li>- feasibility of predator eradication proposals</li> <li>- benefit to guillemot and razorbill</li> </ul>
Inadequate evidence to demonstrate benefit to breeding guillemot and razorbill of proposed eradication strategy	<p>Prior to determination of DCO by Secretary of State, submit full versions of the following for review by Interested Parties:</p>	<ul style="list-style-type: none"> <li>- evidence that guillemots and razorbills reared in Channel Islands will recruit to respective UK National Site Networks at required scale to protect</li> </ul>

**RSPB's OVERALL RATING OF COMPENSATION MEASURE FOR GUILLEMOT AND RAZORBILL**

**- Predator eradication**

	<ul style="list-style-type: none"> <li>- Provision of full breeding bird and INNS survey and monitoring results;</li> <li>- Detailed rationale and evidence, based on chosen eradication strategy and selected locations, to demonstrate benefit to breeding guillemot and razorbill through increases in productivity and survival over and above existing levels experienced at the selected locations.</li> </ul>	<p>coherence of those networks</p> <p>Advice from Interested Parties will ensure Secretary of State can take a fully informed and rational decision in respect of whether the compensation measure will protect the coherence of the UK National Site Network for guillemot and razorbill.</p>
Lack of evidence of connectivity of guillemots and razorbills from Channel Islands to respective UK National Site Networks	<p>Prior to determination of DCO by Secretary of State, submit full version of the following for review by Interested Parties:</p> <ul style="list-style-type: none"> <li>- Provision of additional evidence to demonstrate level of connectivity between guillemots and razorbills reared in Channel Islands and those recruited into respective UK National Site Networks</li> </ul>	

[Bycatch reduction measures](#)

**Table 2: the RSPB's overall rating of the Hornsea Four bycatch reduction compensation measure for Guillemot and Razorbill and recommended actions**

**RSPB's OVERALL RATING OF COMPENSATION MEASURE FOR GUILLEMOT AND RAZORBILL**

**- Bycatch reduction**

Key issues to resolve revolve around the inadequate evidence base underpinning the Applicant's proposals. Below we set out the actions required to address these prior to the Secretary of State carrying out further consultation with interested parties.

- Expert (peer) review;
- Absence of scientifically robust statistical analysis (bycatch rates)
- Lack of detail on variables;
- Dataset not comprehensive;
- Missing data collection details;
- Insufficient modelling of variables;
- Pseudoreplication/ Error distribution.

<b>RSPB observation/ Issue</b>	<b>Action required by the Applicant</b>	<b>What would this provide?</b>
Expert (peer) review	<ul style="list-style-type: none"> <li>- Provide detail on the fisheries, ornithologist and statistical experts that conducted the data and statistical analysis including their</li> </ul>	<ul style="list-style-type: none"> <li>- Confidence that the results of the trial have been verified by an independent third-party</li> </ul>

**RSPB's OVERALL RATING OF COMPENSATION MEASURE FOR GUILLEMOT AND RAZORBILL**

**- Bycatch reduction**

	<p>credentials and who is paying them.</p> <ul style="list-style-type: none"> <li>- The RSPB requests that the Applicant authorise a confidential review by an independent expert in seabird bycatch data analysis.</li> <li>- The RSPB would like to offer the Applicant the opportunity to share their data confidentially with the RSPB's bycatch experts including Yann Rouxel, Bycatch Project Manager, developer of the LEB, and Steffen Opiel, Senior Scientist and experienced analyst of seabird bycatch data. Alternatively, the RSPB can recommend experts from leading independent scientific organisations (Zoological Society of London, University of Washington or the British Trust for Ornithology).</li> </ul>	<p>bycatch expert and a robust peer review.</p> <ul style="list-style-type: none"> <li>- Confirmation and evidence that the results of the bycatch reduction trials to date are as effective as the Applicant states, so that Interested Parties and the Secretary of State can determine the level of confidence that can be placed in the results.</li> </ul>
Absence of scientifically robust statistical analysis (bycatch rates).	<ul style="list-style-type: none"> <li>- Calculate and share the bycatch rates for all birds and specific species (this can be done without sharing the underlying data).</li> <li>- Describe data analysis conducted in the methods such that it is repeatable</li> </ul>	<ul style="list-style-type: none"> <li>- Bycatch rates would allow the Applicant to say how many birds they could save through bycatch reduction measures.</li> <li>- Provide a repeatable analytical method- a basic foundation of sound science.</li> </ul>
Lack of detail on variables	<p>Provide detail, for the range of experimental LEB and control nets, on:</p> <ul style="list-style-type: none"> <li>- Fishing effort</li> <li>- Sample size</li> <li>- Gillnet type</li> <li>- Location and times</li> </ul>	<ul style="list-style-type: none"> <li>- An ability to understand the basis for any analysis and subsequent claims around efficacy.</li> </ul>
Dataset not comprehensive	<ul style="list-style-type: none"> <li>- Conduct multi- year trials</li> </ul>	<ul style="list-style-type: none"> <li>- Best-practice, wider diverse sample size, more confidence.</li> </ul>
Missing data collection details	<p>Provide detail on the below factors influencing data collection:</p> <ul style="list-style-type: none"> <li>- location of cameras on boats.</li> <li>- proportion of bycatch events that were identifiable (ability to identify species from an image of a bird carcass in a net).</li> <li>- proportion of bycatch self-reported by fishermen versus from cameras.</li> <li>- method to verify self-reported bycatch (e.g with camera footage).</li> <li>- Confirmation that the control nets were identical to the experimental nets</li> </ul>	<ul style="list-style-type: none"> <li>- These are again elements of the experiment which will have an influence on the results – it is important to present these such that the robustness of the results can be scrutinised and assessed.</li> <li>- Ability to evaluate over what area and time horizon the results can be extrapolated. If mitigation works only at certain</li> </ul>

<b>RSPB's OVERALL RATING OF COMPENSATION MEASURE FOR GUILLEMOT AND RAZORBILL</b>		
<b>- Bycatch reduction</b>		
	- Bycatch reduction results for the other species they caught	times of the year the annual mortality reduction would be lower than when you assume that the reduction is constant across all seasons.
Insufficient modelling of variables	- Conduct statistical models to account for variables (including fishing effort), and present findings.	- Reassurance that the described effect is real and supported by valid data and analysis.
Pseudoreplication/ Error distribution	- Data need to be analysed with a Poisson distribution (numerical response), or some other approach must be taken to overcome the pseudoreplication issue for binary data. - If the trials are strictly paired then a simple paired t-test would be sufficient to assess the differences.	- Magnitude of the bycatch reduction (in absolute and not just relative terms) to evaluate whether the scale of mortality reduction can indeed compensate for the scale of windfarm-induced mortality.

*Kittiwake compensation measures*

3.21. Table 3 below summarises the RSPB's overall rating of the Hornsea Four compensation measures for kittiwake, together with recommended actions to resolve the substantive issues that remain.

**Table 3: the RSPB's overall rating of the Hornsea Four artificial nesting structure compensation measure for Kittiwake and recommended actions**

<b>RSPB's OVERALL RATING OF COMPENSATION MEASURES FOR KITTIWAKE</b>
<b>- Artificial nesting structures (offshore and onshore)</b>
<p><b>Summary</b></p> <p>Detailed concerns set out in previous submissions remain:</p> <ul style="list-style-type: none"> <li>- Lack of agreement on magnitude of impact to be compensated for (see section 2, Annex A)</li> <li>- Lack of agreement on the methodology to convert those impacts to compensation objectives;</li> <li>- whether nesting habitat is a limiting factor for breeding kittiwakes in the southern North Sea and whether any new structure will be used by additional breeding adults as opposed to existing adults choosing to redistribute;</li> <li>- whether and over what timescale any new colony will achieve the target population and also recruit breeding adults to the UK National Site Network for kittiwakes, including FFC SPA;</li> <li>- lack of a meta-population analysis to clarify the dynamics between any proposed artificial nesting structure and SPA/other colony populations: elucidating the feasibility of establishing the proposed colonies and the consequences of such colony establishment on the populations of other colonies, in particular FFC SPA;</li> <li>- the lead-in time for the proposed compensation in relation to the point at which impact will occur and the lifetime of the compensation measure in relation to damage.</li> </ul> <p>Review of the most recent materials confirms <b>fundamental issues remain relating to the securing of (i) a location and (ii) a regulatory pathway agreed with the relevant regulators to allow the repurposing of an offshore oil or gas structure for compensation purposes.</b></p>

**RSPB's OVERALL RATING OF COMPENSATION MEASURES FOR KITTIWAKE**

**- Artificial nesting structures (offshore and onshore)**

Further information is required on the Applicant's proposals, with particular reference to:

- A secured location for the proposed Artificial Nesting Structure
- If this is a repurposed offshore structure, details of agreement with the relevant regulatory authorities on the regulatory pathway that will secure that structure for the lifetime of the compensation measure.
- If it is an alternative ANS, details of the relevant agreements that secure the location and any regulatory requirements.
- Details of the design of the relevant ANS, compensation objectives, implementation, monitoring, reporting and adaptive management strategies.

Due to the uncertainty on these critical matters in respect of a repurposed offshore ANS, there is currently significant doubt as to whether the Applicant will be able to bring forward an artificial nesting structure, where that structure will be, what form it will take and whether any other barriers remain in respect of securing the compensation measure.

*Gannet compensation measures*

- 3.22. Table 4 below summarises the RSPB's overall rating of the Hornsea Four compensation measures for gannet.

**Table 4: the RSPB's overall rating of the Hornsea Four compensation measures for Gannet**

**RSPB's OVERALL RATING OF COMPENSATION MEASURES FOR GANNET**

- **Bycatch reduction**
- **Artificial nesting structures (offshore and onshore)**

**Summary**

**Fundamental problems exist with each proposed compensation measure such that neither can be considered a credible or feasible compensation measure for gannet at this time.**

**Bycatch reduction:** there are fundamental details missing from the Applicant's proposals. None of the potential bycatch reduction techniques suggested by the Applicant for gannet have been tested or proven in a potential target longline fishery. The RSPB considers it imperative that any proposed measures require at-sea trials, in a target fishery, to confirm if they work and to what extent, with results made accessible for peer review.

**Artificial nesting structures:** no evidence of a Northern Gannet colony establishing and sustaining itself on a long-term basis on an artificial structure. The concept of artificial nesting structures is a wholly unproven compensation measure for Northern Gannets.