Hornsea Project Four

Written Summary of the Applicant's Oral Case at Issue Specific Hearing 6

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1 Introduction

1.1.1.1 Issue Specific Hearing 6 (ISH6) on marine and coastal ornithology for Hornsea Four took place on 28 April 2022 at 10:00 am and was held virtually, with attendees attending via Microsoft Teams.

1.1.1.2 The ISH6 broadly followed the agenda published by the Examining Authority (the ExA) on 19 April 2022 (the Agenda). The ExA, the Applicant, and the stakeholders discussed the Agenda items which focused on examining the more recently submitted evidence about the Habitats Regulations Assessment, including matters relating to derogation and compensation.

Table 1: Summary of the Issue Specific Hearing 6

Item	ExA Question/Context for discussion	Applicant's Response
Agenda Item 1 Welcome, introductions, arrangements for the Hearing		
1		The Applicant's representatives introduced themselves as follows: - Gary McGovern, Partner for Pinsent Masons LLP - Dr Julian Carolan, Consents Project Manager, Ørsted - Sean Sweeney, Associate Director and Head of Ornithology, APEM - Matthew Boa, Senior Ornithologist, APEM - Celestia Godbehere, Strategic Compensation Lead, Ørsted - Rachel Sinclair, Marine Mammal Specialist, SMRU Consulting - Phil New, Senior Environmental Consultant, GoBe Consulting - Glen Gillespie, Technical Director, GoBe Consulting - Fraser Carter, Senior Ornithologist, GoBe Consulting - Dr Sarah Randall, Derogation Lead, Ørsted
Agenda Item 2 Implications of matters discussed at ISH4 and ISH5 for the Habitats Regulations Assessment		
2.1	The ExA referred to the discussion at Issue Specific Hearing 4 and potential underwater noise impacts to marine mammals with a focus on SPL peaks rather than SPL cumulative.	Mr McGovern advised that the Applicant did not believe there were any implications for the Habitats Regulations Assessment ("HRA") from the discussion and the Applicant was able to conclude no adverse effects on integrity from Hornsea Four alone and in-combination. Mr McGovern confirmed the key mechanisms, secured in the DCO to ensure sufficient and appropriate mitigation is deployed, are the Outline Marine Mammal Mitigation Protocol (Outline "MMMP") (see condition 13(1)(g) of Part 2 of Schedules 11 and 12) and the Outline Southern North Sea Special Area of Conservation Site Integrity Plan ("SIP") (see condition 13(1)(j) of Part 2 of Schedules 11 and 12).
2.2	The ExA asked the Applicant to outline its position on whether further detail is needed at this stage for mitigation at source measures.	Mr McGovern confirmed that the Applicant's position remains that mitigation at source is a feasible option and the Applicant has demonstrated that it could be deployed for Hornsea Four. It not however, appropriate or necessary to further define or require at-source mitigation at this stage as the MMMP and SIP provide all the necessary controls. Mr McGovern noted that defining or requiring mitigation at source is not something which other offshore windfarm projects have committed to pre-consent.
2.2	The ExA asked the Applicant what level of confidence the Secretary of State ("SoS") could have in the SIP for Hornsea	Mr McGovern confirmed that the Applicant's submission is that the SoS can have a high degree of confidence in the SIP. Securing a SIP in the DCO is a well-tried and tested route which all other recent offshore windfarms have deployed, making it a widely understood mechanism to control impacts.

	Project Four when considered alongside other SIPs to prevent in-combination effects on harbour porpoise.	Mr McGovern noted that the ExA would have seen the MMO's Deadline 3 submission on this subject [REP3-052, MMO response to Examiner's Question 1.16], which the Applicant believes is helpful and outlines the MMO's approach to ensuring it is aware of all projects that may have an effect on the Special Area of Conservation ("SAC"). The MMO concludes in its deadline 3 submission that a SIP is a robust mechanism of control. The ExA asked the Applicant if it had reviewed the approach to the use of the SIP in its report to inform the appropriate assessment ("RIAA") and the HRAs for the East Anglia ONE North Offshore Windfarm and East Anglia TWO Offshore Windfarm (the "East Anglia Projects"). Mr McGovern advised that the Applicant had not carried out a line-for-line comparison but believed the content of the HRA for the East Anglia Projects and the RIAA for Hornsea Four were broadly comparable in their approach to the MMMP and SIP. The Applicant subsequently notes that action points 11 and 12 arising from Issue Specific Hearing 4 have some relevance to this discussion. Please see the Applicant's response to these points at G4.4 Written Summary of the Applicant's Oral Case at Issue Specific Hearing 4 See post-hearing note in response to 6.1 and 6.2.
2.2	The ExA noted that Natural England ("NE") and the Marine Management Organisation ("MMO") were promoting monitoring of marine mammals in their relevant representations. The ExA had subsequently asked whether the proposed monitoring was required in order to ensure adequate control over any impacts. Since then, the MMO and NE have confirmed that monitoring would inform the SIP and is therefore needed. The ExA invited comments from the Applicant.	Mr McGovern advised that the Applicant disagrees with NE and the MMO and offered to make further written submissions on the point. Please see Applicant's further submissions on this point in response to action point 2 below. The ExA asked if any thought had been given by the Applicant to the impact on the SIP if the assumptions for bottlenose dolphins did not match the results of the monitoring. Mr McGovern stated that the Applicant did not believe it would have a material effect but that the Applicant would like to confirm at Deadline 4. Please see Applicant's further submissions on this point in response to action point 3 below.
2.3	The ExA asked the Applicant to briefly summarise the work currently being undertaken to update the baseline sensitivity report following comments from NE and any implications for the HRA.	Mr McGovern advised that there is a report being compiled which will be submitted at Deadline 4 and which the Applicant hopes will address NE's concerns (**G4.13 Comparative Gannet Assessment**). The Applicant's expectation is that the report will confirm and validate the work already carried out (i.e. no impacts on receptors).

2.4	The ExA asked the Applicant to confirm that all relevant European protected sites had been assessed and that no others were at risk of likely significant effects.	Mr McGovern, for the Applicant, confirmed this was so.
2.5	The ExA noted that the Applicant had provided updates in Issue Specific Hearing 5 on the re-run of the MRSea model. The ExA asked the Applicant for its view on any implications of re-running the model on the HRA.	Mr Sweeney for the Applicant verbally presented the results of the application of MRSea v2 for gannet in the context of the Report to Inform Appropriate Assessment (APP-167) (RIAA). Mr Sweeney confirmed that the updated modelled data led to a reduction in mortality levels for gannet of 0.05 breeding adults apportioned to FFC SPA when combining the impacts from collision risk and displacement (using rates of 60% for displacement and 1% for mortality) or 0.13 breeding adults when applying a higher displacement rate of 80%. When applying either of these revisions to the outcome of the findings in the RIAA this would lead to a reduction in between 0.5% - 1% overall, which is of no material difference and has no effect on the conclusions of no adverse effect on integrity in relation to Hornsea Four alone or in-combination for the gannet feature of the FFC SPA. A note confirming these values in the form of a worked example for gannet will be submitted to the examination at Deadline 4 (**G4.13 Comparative Gannet Assessment**).
2.6	The ExA asked the Applicant to outline the implications for the HRA of outstanding discussions on regional breeding season populations	Mr Sweeney confirmed the regional breeding season populations were not relevant to the outcomes of the HRA process. Mr Sweeney explained the regional breeding season populations are used for EIA purposes and a different approach is used for HRA given the need to apportion birds to receptor colonies.
2.7	The ExA asked the Applicant if the implications for the HRA of the definitions of seasons for kittiwake and gannet were the same as for the EIA, as discussed in Issue Specific Hearing 5.	Mr Sweeney confirmed the evidence and Applicant's position, as discussed at Issue Specific Hearing 5 in an EIA context, remains applicable to the HRA and the Applicant's season definition for Kittiwake is supported by evidence including by site specific survey data as well as precedent (Hornsea Three). Mr Sweeney commented on RSPB's comments that birds present in the array area in August are likely to be from the FFC SPA. He reiterated that the Applicant remains confident in the evidence it has presented to support the seasons relied upon for its assessment.
2.8	The ExA asked the Applicant whether it believed that if RSPB's recommendation were used for gannet avoidance rates, it would have implications for the output of the HRA	Mr Sweeney for the Applicant reiterated his comments from Issue Specific Hearing 5, noting that the SNCB guidance supports the avoidance rate used by the Applicant and that using a 98.9% avoidance rate is suitably precautionary. Mr Sweeney confirmed that using a lower avoidance rate as suggested by the RSPB could potentially result in higher collision risk mortalities but overall in his

		professional opinion it is unlikely to result in material differences to the conclusions as there would also be a reduction in seabird densities inputted into the model.
2.9	The ExA asked the Applicant whether the exclusion of auks in flight for the displacement mortality assessment would have a fundamental effect on the HRA.	Mr Sweeney for the Applicant confirmed that the addition of auks in flight would not result in any material changes to the HRA outcomes.
2.10	The ExA noted that there had been a workshop between the Applicant and NE to address certain double counting issues and asked whether this would have an implication on the HRA and asked the Applicant for an update.	Mr Sweeney advised that there is a recognition within the industry that these matters are being discussed and guidance is pending. It is expected that the implication for all HRAs for offshore wind farms in relation to FFC SPA (considering both collision and displacement impacts) would be a significant reduction in mortality rates.
2.11	The ExA asked the Applicant whether its use of certain confidence intervals in the collision risk assessment had material implications for the HRA	Mr Sweeney confirmed that, as stated in Issue Specific Hearing 5, the Applicant is confident in the use of flight height distribution data from Johnston et al (2014) at EIA and HRA level and therefore does not consider the use of 95% confidence intervals should be applied. On that basis there should be no material change to the assessment outcomes.
2.12	The ExA noted that it was discussed at Issue Specific Hearing 5 that the Applicant could include both counterfactual population size and counterfactual population growth rate in its EIA but could use the counterfactual population growth rate for the purpose of analysis. The ExA asked if the same approach could be adopted for the HRA.	Mr Boa reiterated his comments from Issue Specific Hearing 5 that the Applicant considers that only the population growth rate should be used and this applies to both the EIA and HRA. The ExA asked whether it would have any implications for the HRA if the Applicant did include both the growth rate and the population size. Mr Boa advised that although both figures could be presented, due to the issue of benchmarking the counterfactual population size, and the effect it would have on the population [i.e. the exponential growth owing to the omission of density dependence], and the fact that this is almost impossible to quantify, the Applicant would need to rely on the counterfactual population growth rate.
2.13	The ExA noted that NE disagrees with the basis on which the indirect effect on seabirds was assessed. The Applicant had advised that it plans to submit a report on this at Deadline 5. The ExA asked the Applicant for a view on the degree to which the outcome of this report would affect the output of the shadow HRA.	Mr McGovern advised that the Applicant believes there would be no material implications for the RIAA.

2.14	The ExA asked the Applicant for its views on the interpretation of the SoS' decisions in the East Anglia Projects in relation to impacts on gulls in the Flamborough and Filey Coast Special Protection Area ("FFC SPA").	Mr Sweeney advised that the Applicant did not believe there were any implications for the Applicant's RIAA with regards to seabird assemblage, given the Applicant's conclusion on impact for gulls. The ExA asked if the Applicant had taken any comfort from the HRAs for the East Anglia Projects. Mr Sweeney confirmed the Applicant had taken some comfort from the approach of the SoS and its applicability to other projects including Hornsea Four.
2.15	The ExA asked whether the Applicant had any comments on impacts on common scoter and red-throated diver in the Greater Wash SPA following the SoS' decisions in the East Anglia Projects.	Mr Sweeney confirmed that its position remains that the evidence supports a conclusion of no risk of adverse effect on integrity for common scoter or red-throated diver in the Greater Wash SPA. Mr Sweeney advised that the East Anglia Projects were not particularly relevant the assessment of Hornsea Four, as they were assessing birds connected to the Outer Thames Estuary SPA and not the Greater Wash SPA in the main. The East Anglia Projects also assessed red-throated divers with regards to potential displacement from the array area, whilst for Hornsea Four the array area is well beyond any displacement effects for this species and so assessments for Hornsea Four were in relation to the export cable corridor where it is planned to pass to the north of the Greater Wash SPA only. Mr Sweeney noted NE's responses in the latest version of its risk and issues log (Deadline 3) for common scoter and red-throated diver, and the agreement with NE noted at row B31 and B37.
Agenda Item 3 General HRA matters not previously discussed at Hearings		
3.1	The ExA noted that the responses to the ExA's First Written Questions ("FWQs") suggest disagreement between NE and RSPB on whether the impacts to kittiwake from Hornsea Three Offshore Wind Farm can be discounted from the in-combination assessment on the basis that they have been properly compensated for. The ExA asked the Applicant for its views.	Mr McGovern noted that the Applicant's position was aligned with that of NE on this matter.
3.2	The ExA asked the Applicant to expand upon its answer to FWQ HRA.1.17 in relation to the approach taken to apportioning impacts on European site interest features of the FFC SPA. The ExA was particularly interested in the Applicant's rationale for	Mr Sweeney referred to site specific data – the sample size is small for differentiating the age structure of populations and so it was considered appropriate to default to more reliable sources which is the breakdown of age structure in the Furness (2015) paper. Mr Sweeney also commented that there are certain species where immature birds may look like adult birds and an ornithologist

	using a theoretical generalised stable age structure derived from the population models and why site-specific data were not presented as was suggested by the RSPB.	could not differentiate between them by sight. This is demonstrated by kittiwakes, where they moult into adult type plumage in their second year, whilst they typically do not breed for the first time until at least three years old. So rather than rely on small sample size of data which would be expected to contain birds which look like adults but haven't yet reached breeding maturity, the Applicant has relied upon the increased set of data pooled from wider data sources to inform the age structure with more confidence. The ExA asked the Applicant to comment on NE's responses to FWQ HRA.1.17 in relation to the paper by Buckingham *et al.* (2022). Mr Sweeney confirmed that Buckingham *et al.* (2022) is a useful report from tagging auk species to learn more about their general dispersal behaviour. However, in this particular case it relies more heavily on a number of colonies around Scotland which contributed tagged birds and only smaller no of tags retrieved in data set which are from colonies off the coast of southern Scotland and the north east coast of England that are more applicable to Hornsea Four. The Applicant finds it a useful paper in general terms, but the datasets do not provide evidence that auks do not disperse or migrate through Hornsea Four array area from colonies contributing to the report. This is apparent, as the core colony distributions only rely on 50% density contours, so if reviewed against the entire dataset there would be many records further afield and likely to include the Hornsea Four array area, as suggested from other data in the distributions where auks were tracked into the southern North Sea and off Cornish coastline. Although the figures within the paper only represent the core colony distributions and have therefore been clipped, it is clear from Figure 3 that auks from Whinnyfold and East Caithness colonies move down through areas including Hornsea Four. One further point is that there is no differentiation between male and female tagged auks in the Buckingham *et al.* (2022) paper, which means no account is taken of the biological differences between females that tend to leave the nest earlier in the post-breeding dispersal period in comparison to males, who depart later with their chicks. As chicks are flightless the males move slower with less distance over time, whereas female do not have such constraints on their movements post-breeding – this is an inherent bias which is unaccounted for in this paper, as all data are bulked together. Had the datasets been split up to account for this, we could have seen different results. Overall, it is a useful paper and the Applicant welcomes this type of research being undertaken, but it is not considered to be a reliable source for assessment purposes for this project.

3.3	The ExA noted that on agenda item 3.3 (why razorbill from the Farne Islands were not screened into the HRA), the Applicant had responded to NE's relevant representation on this subject at Deadline 2 and clarified that the Applicant's analysis predicts mortality at significantly less than one bird even when using upper limits. The ExA noted that it needed to make further enquiries of NE but asked if the Applicant had anything to add.	Mr Sweeney referred to the latest version of risk and issues log from NE submitted at Deadline 3 (row B68) where NE stated that based on the predicted impacts of less than 1 bird in the non-breeding season under NE's worst case scenario, NE considers that an adverse effect on integrity could be ruled out for razorbill as an unnamed component of the Farne Islands SPA from Hornsea Four alone and in-combination. The Applicant notes NE has requested an updated version of the document G2.11, Razorbill Assessment Alone and In-combination Farne Island SPA submitted at Deadline 2 alongside the revised displacement assessment for auks. The Applicant awaits feedback from Natural England regarding MRSea v2, however, the Applicant is confident there is no material difference to the assessment outcomes (at EIA and HRA) and therefore no update is required.
Agenda Item 4 Matters not previously discussed at Hearings relating to derogation and compensation		
4.1	The ExA noted that there had been suggestions from interested parties that the provision of artificial offshore nesting for kittiwake might lead to relocation from natural structures to artificial structures. The ExA asked the Applicant to comment on this and related matters.	Fraser Carter, on behalf of the Applicant, explained that in an offshore context, which is preferred by the Applicant, a process of detailed location identification had been carried out by the Applicant in consultation with NE and RSPB. Until the Applicant had commissioned surveys it was not known that kittiwake were nesting in large numbers offshore, generally in sub-optimal habitat and exposed to high levels of disturbance on operational oil rigs. Mr Carter noted that, within the Applicant's search area, over one third of these rigs were due to be decommissioned and would release approximately 333 apparently occupied nests ("AONs"), which was likely to be an underestimate. The Applicant's proposal to provide an artificial nest structure would alleviate lack of nesting habitat, likely increase productivity (based on evidence of offshore breeding kittiwake) and provide a significant number of juvenile kittiwake into the biogeographic population. Mr Carter confirmed from a recent study (Christensen-Dalsgaard *et al.*, 2019) of Norwegian oil rig nesting kittiwakes that productivity at offshore rigs was higher than all natural colonies onshore (which were included within the study) and also higher than a number of urban structures also supporting kittiwake. Mr Carter confirmed this study had been submitted into Examination. Mr Carter clarified that the Applicant proposed to provide an alternative nesting space which may include those birds which will be evicted from oil rigs when decommissioned, with the additional benefit of a purpose built structure with a design optimised for the needs of the relevant bird species. Mr Carter confirmed the Applicant has put forward two options, the first being a repurposed structure in the offshore environment, and the second/alternative being to provide a new structure.

		In the onshore environment, Mr Carter confirmed evidence supporting the view that there is a large number of birds breeding in sub-optimal habitat (such as on urban roofs and light fittings) which suggests a lack of suitable natural nesting habitat. On that basis, delivering an onshore artificial nesting structure would provide purpose-built kittiwake nesting space which will be located in a suitable ecological area to promote increases in productivity. As presented within Section 2.3.3 of the Applicant's Ecological Evidence report (**APP-189**), it is likely that colonising birds for a new structure would be driven by immigration of recruits (i.e., new breeders) in search of new nesting locations. The provision of an artificial nesting location would therefore provide optimal habitat for these birds to colonise to elevate the lack of natural nesting availability. Once birds have established a nesting site (providing conditions are good) they are unlikely to relocate (see Section 2.3.3 of APP-189) and therefore it is unlikely that placing an artificial nesting site in close proximity to another colony would diminish the population of established breeders. If breeding adult birds from natural nesting locations were to relocate to an artificial nesting structure, this would be as a result of the artificial structure being more attractive to the birds. It is anticipated that increases in productivity as a result of the new nesting structure would result in more kittiwakes being produced into the biogeographic population which would then be available for recruitment into existing colonies.
4.2	The ExA noted that the Applicant's submissions indicate that the occurrence of rat colonies and depleted habitats in the same location is a good indication that rat eradication would have a beneficial effect and asked the Applicant to confirm that was correct.	Mr Carter confirmed this was correct. The information provided in support of this measure confirms the proposed locations support brown or black rat populations and hold small numbers of guillemot and razorbill or historically contained populations of those species. The ExA asked how confident it can be that the availability of habitat is a limiting factor for guillemot and razorbill in the southern coast of England the Channel Islands. Mr Carter confirmed that breeding areas of guillemot and razorbill are typically situated where the birds are safer from mammalian predators. This means that on the UK mainland, they are confined to sheer cliffs or in among boulders at the bases of cliffs where access is difficult even from the sea. As is the case for kittiwake, cliff habitat is limited along the southern coast of England and therefore only a very small number of guillemot and razorbill breed at colonies along the southern coast of England. Islands in the south are also limited in comparison to the north of the UK (as shown below by small proportion of English SPAs in SPA suite).

		On islands, cliffs and the tops of large stacks are preferred but where such habitat is absent, such as within the Channel Islands, they breed among rocks or even on flat open ground. This makes both species particularly vulnerable to predation from mammalian predators. The Applicant has undertaken site visits and island implementation studies to numerous locations within the Channel Islands including Herm, Sark and Alderney and as noted all locations considered have brown or black rat present and currently or historically support both species. Mr Carter noted only two of the 34 SPAs for guillemot (in bold) are in England, both of which in the North-East of the country. Mr Carter confirmed the Applicant has confidence that the habitat in the areas under consideration is likely to be limited by the presence of invasive mammalian predators and that the removal of such species would result in the increase in guillemot and razorbill populations. Whilst there are some other limiting factors the example of Lundy has demonstrated an increase in nesting habitat and populations of these species which were above those at other nearby colonies, demonstrating the benefits of removing invasive mammalian predators.
4.3	The ExA raised concerns from RSPB on the efficacy of offshore nesting provision for gannet as a potential compensation measure and asked the Applicant to comment on this.	Mr Carter confirmed the Applicant is still progressing an offshore nesting structure for gannet, as a joint structure with that for kittiwake. While evidence of northern gannet nesting on offshore structures is not currently known to exist, this is largely due to the specific nesting requirements of the species. Offshore platforms/oil rigs do not currently support the required nesting space or features required for gannets. As detailed within the **B2.7 FFC SPA: Gannet and Kittiwake Compensation Plan (APP-186)**, a detailed design process is being undertaken to provide optimal nesting habitat for the species. There is evidence of a lack of suitable nesting space within the 21 gannetry around the UK and only one of them is in England, being the FFC SPA, which is a mainland colony. The Applicant proposing this structure would alleviate the nesting limitation with a purpose built structure using an evidence led process for optimal habitat species. Mr Carter confirmed the Applicant would continue to discuss this matter with NE and RSPB.
4.4	The ExA noted that there were remaining disagreements between the Applicant and NE on the breeding age of kittiwake	Mr Carter advised that for kittiwake the Applicant has committed to the implementation of the nesting structure at least three breeding seasons prior to operation of the wind turbines. Mr Carter

	and the lead in time for predator eradication. The ExA asked the Applicant for an update on discussions with NE.	referred to NE's submission in the Hornsea Three decision making process for the kittiwake compensation plan for that project and noted that NE highlighted a 3-5 year colonisation period would be suitable (Natural England Comments on Responses to the Secretary of State Consultation 3 received on 2 November 2020)[1]. Three breeding seasons is also supported by the Coulson (2011) publication, which shows around a quarter of recruits at an English SPA colony were aged three. Mr Carter noted the preference of Applicant is to provide an offshore nesting structure, which as discussed earlier would have a higher productivity rate. In relation to predator eradication, Mr Carter confirmed the final location will be confirmed after the implementation study has been completed (an update with preliminary results will be provided at Deadline 5). The eradication will commence no later than two years prior to operation of wind turbine generator. It was further noted that the Applicant has committed to a suite of measures, which includes a by-catch reduction measures, which allows scalability and flexibility plus extra confidence that the impacts on affected species will be adequately compensated. Mr Carter advised the Applicant would continue to discuss the matter with NE.
4.5	The ExA asked the Applicant if it was fair to say that it was breaking new ground with regard to compensation measures in that the Applicant had submitted draft compensation measures to the ExA at the start of the examination whilst maintaining its position that such measures are not required except in respect of kittiwake.	Mr McGovern for the Applicant confirmed that Hornsea Project Four was the first offshore wind farm project to include "without prejudice" compensation measures at the point of application, rather than introduce them either during examination or in post-examination. The ExA asked the Applicant how it was interpreting the SoS' comments in his recent decision letters in relation to the need, where there is disagreement whether an AEOI arises, for compensatory measures to be identified, which can be secured and delivered, so that they can be examined, even on a "without prejudice" basis. Mr McGovern confirmed that the Applicant was interpreting the comments of the SoS as a clear steer that in the interest of avoiding long delays post-examination, there is encouragement to engage with the statutory nature conservation bodies and seek to identify potential compensatory measures and so far as possible to seek to agree the potential compensation measures before the close of the examination. Mr McGovern noted that the information set out in the Applicant's DCO application, in relation to HRA derogation, is comparable

[1] EN010080-003257-Natural England.pdf (planninginspectorate.gov.uk

		to or goes far beyond that provided to date in other offshore wind farm projects by this stage of the process. The ExA noted that the Applicant would be familiar with the comments of the SoS in the decision granting consent for Hornsea Three Offshore Windfarm about the ExA needing to provide the SoS with its opinion on the adequacy of the compensation measures proposed by the Applicant. Mr McGovern noted that the Applicant understood the SoS' position and believed that the information submitted by the Applicant enabled the ExA to report on and the SoS to make a fully informed decision on the adequacy of the compensation measures. Mr McGovern confirmed that the Applicant continues to work hard to provide information requested by interested parties, but the Applicant considers that the information currently before the ExA already is either comparable to or goes beyond the level of detail the SoS had for offshore windfarm projects when granting consent for those projects. The ExA asked the Applicant for an update on the feasibility study for rat eradication compensation measures referred to in REP1-061. Dr Randall confirmed that the feasibility and implementation studies were started at the start of 2022. The Applicant has hired predator eradication experts to undertake these studies within the Bailiwick of Guernsey and the islands and islets around the islands of Herm (including Herm itself), Sark and Alderney. These experts will be undertaking further work over the summer and so far they have found rats across all of the islands and some of the islets. Dr Randall confirmed the surveys were likely to be completed by the end of August but that the Applicant hoped to submit some preliminary results by Deadline 5.
4.6	The ExA noted RSPB's concern around the enforcement of compensation measures in Guernsey, being an island outside England. The ExA noted that there were provisions restricting operation until the predator eradication measures had been carried out and asked if this was correct.	Mr McGovern for the Applicant confirmed this was correct. Dr Randall noted that the islands being considered by the Applicant were largely covered by Ramsar designations (with both razorbill and guillemot listed within the Ramsar designation). As in the UK, Guernsey is obliged to protect Ramsar sites. Dr Randall noted that the Applicant had been engaging extensively with Guernsey authorities and was in the process of agreeing a Memorandum of Understanding ("MoU") with those authorities to confirm their support for the compensation measures. The Applicant expected to submit a draft of that MoU at Deadline 5.

		The ExA asked if the protection given to Ramsar sites in Guernsey was the same as the level of protection afforded to Ramsar sites in the UK. Mr McGovern stated that the protections flow from international conventions and the Applicant would therefore expect the protections to be comparable. Please see Applicant's further submissions on this point in response to action point 8 below. Mr McGovern added that the Applicant's intention was to enter the MoU to secure agreement on the principles of the compensation measures and then to secure formal agreements that would provide further security around the implementation of the measures. Mr McGovern confirmed the Applicant was working to conclude the MoU as soon as possible but the formal agreement would only be signed after the close of the examination if the compensation measures are required. The ExA asked the Applicant what its proposals were for retaining the management of the compensation measures beyond the close of the wind farm and decommissioning. Dr Randall confirmed the predator eradication and bycatch reduction measures will be implemented and maintained throughout the operational lifetime of Hornsea Four. The artificial nest structures would be implemented and maintained throughout the operational lifetime of Hornsea Four, and thereafter only decommissioned with the approval of the Secretary of State. Mr McGovern confirmed that the Applicant's understanding was that its proposals are broadly aligned with those of other similar proposed compensatory measures for offshore windfarms. **Post-hearing clarification:** The Applicant has given further consideration to this answer following the hearing and acknowledges that the proposed wording in the draft DCO does not include a presumption that the structures will remain in situ if colonised as found in other DCO's including Hornsea Project Three, however in the context of structures that will be located offshore the Applicant is subject to OSPAR, so a presumption in favour of the structure remaining in situ is not appropriate, rather the colonisation of the structure will be taken into account as a factor regarding the timing of decommissioning in agreement with the Secretary of State as stated by Dr Randall. For consistency the proposed wording requiring the agreement of the Secretary of State also applies to onshore structures.
4.7	The ExA noted that the HRA suggests that some of the compensation measures proposed by the Applicant may in and	Mr McGovern, for the Applicant, confirmed that there are a series of commitments in relation to the compensation measures and as long as those measures are followed, there would be no risk of AEoI.

	of themselves require mitigation so that they do not have an adverse effect on integrity ("AEoI"). The ExA asked if these mitigation measures were included in the Commitments Register.	The ExA asked the Applicant to confirm that it was setting out the mitigation measures at this stage but that any necessary consents for the mitigation or compensation measures would be secured post development consent being granted. Mr McGovern confirmed this was the case. The list of measures has been provided by the Applicant to provide the ExA with comfort that any future HRA of proposed compensation measures can be satisfactorily concluded. Any such measures will be secured through post consent consenting processes. The implications for the development HRA therefore being the ability for a conclusion to be reached that an AEoI from compensation measures can be avoided. The ExA noted that the content of the Commitments Register is largely based on EIA requirements. It asked if it should also address HRA requirements as those requirements do not appear to have been addressed to the same level of detail. Mr McGovern advised that the Applicant would consider this and respond at Deadline 4. Please see Applicant's further submissions on this point in response to action point 9(a) below. The ExA queried how the Competent Authority can be sure that each measure will be secured, if some or all of them are still subject to assessment for a later consent – not just HRA but also possibly EIA. The ExA also queried the position if no HRA or formal consent is needed for the implementation of the measure(s). Please see Applicant's further submissions on this point in response to action points 9 (b) and (c) below.
4.8	The ExA asked the Applicant to comment on the concerns of the RSPB that there is a high risk of reinvasion by rats of the eradicated areas.	Mr Carter for the Applicant confirmed the Applicant is confident there are tried and tested methods associated with predator eradication in the UK and internationally, and the Applicant will employ experts to deploy those methods in line with RSPB guidance. The ExA asked whether the Applicant would repeat the eradication if there was reinvasion and Mr Carter confirmed that they would. Mr Carter confirmed that this would be secured through the adaptive management process which would be required by the DCO in the event that the compensation measures are required.

Agenda 5 Overall summary of current positions on project and in-combination HRA effects

5	The ExA noted that it planned to ask for written submissions on item 5 of the agenda from other stakeholders.	Mr McGovern confirmed this approach was agreed by the Applicant.
Agenda 6 AOB		
6	The ExA noted that the action points would be published shortly after the hearing and confirmed the reserve hearing dates for 4 and 5 May 2022 were no longer needed. Details of a further set of hearings in July would be published by 20 June 2022.	The ExA noted that the Applicant had indicated at the Preliminary Meeting that it would like any hearings to be in a hybrid format if possible. The ExA asked the Applicant whether this was still the case and Mr McGovern confirmed that it was.

The ExA adjourned the hearing at 12:10.

Table 2: Action Points

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
1	Respond to each agenda item that is relevant to your remit, as raised by the Examining Authority and responded to by the Applicant during ISH6.	NE, MMO, The Wildlife Trusts, RSPB	4	
2	Clarify position and provide evidence as to why post-consent monitoring suggested by Natural England and the MMO would not inform the Site Integrity Plan process.	Applicant	4	The Applicant maintains its position that post consent marine mammal monitoring is not necessary to inform the conclusions of the RIAA or SIP processes. Natural England's comments regarding post consent monitoring are primarily with regards to concerns around assumptions made in the RIAA regarding bottlenose dolphin densities. Bottlenose dolphin is not a SNS SAC feature and therefore not covered through the SIP process. Therefore, any post consent monitoring of bottlenose dolphin for Hornsea Four would not be used to inform the SIP or any other HRA-related process. The purpose of the monitoring would therefore be to inform the general industry knowledge base for other projects only, as stated by Natural England in its Relevant Representations submission **(RR-029)**.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				The SIP process for Hornsea Four is specifically for harbour porpoise of SNS SAC in combination disturbance effects only (to address current uncertainties regarding the timing and nature of impacts from other projects whose construction phase may overlap with Hornsea Four). Natural England has stated, in its most recent Deadline 3 submissions (**Risk and Issues Log (REP3-054)**), that *"the project alone will not result in an Adverse Effect on Integrity (AEoI) on the Southern North Sea SAC (SNS SAC)"*. This conclusion suggests that Natural England is happy with the baseline densities for Harbour Porpoise on which the RIAA was based. Therefore, as the same data is used for the in-combination assessment within the RIAA, it would follow that the same data is sufficient for the in-combination assessment. This also implies that any post-consent monitoring in relation to harbour seals would not be a requirement in terms of HRA.
3	Clarify Habitat Regulations Assessment (HRA) implications should any monitoring of bottlenose dolphin demonstrate that the assumptions used were not valid.	Applicant	4	There will be no HRA implications as the Hornsea Four RIAA concludes no AEoI alone and in combination in relation to the bottlenose dolphin feature of Moray Firth SAC. There is no SIP process proposed for this species – therefore no process/ mechanism for survey data to feed into. However, the density of bottlenose dolphins in the area is understood to be low and that there is limited connectivity with the Moray Firth SAC. It is also important to note that OWF projects in much closer proximity to the Moray Firth SAC have not had/predicted significant impacts to the SAC population (Beatrice, Moray East, Moray West, Seagreen, NNG, Inch Cape etc).
4	Confirm assessment numbers and implications for the gannet interest feature of the Flamborough and Filey Coast Special Protection Area (SPA) from the MRSea_V2 model run.	Applicant	4	Please refer to Applicant's post-hearing note in response to 2.5 above.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
5	Continue dialogue with the RSPB via the Statement of Common Ground process on the definition of the use of migration-free versus full breeding season for kittiwake and gannet.	Applicant and RSPB	Ongoing	The Applicant will continue to engage with RSPB via the Statement of Common ground process. Please also refer to Applicant's post-hearing note in response to 2.7 above.
6	a) Clarification of position regarding the extent to which nesting habitat is a limiting factor for the breeding population of kittiwake in the southern North Sea, as the Examining Authority was not entirely clear about your response to its first written question HRA.1.36 in relation to this matter [REP2-082]. b) Indicate if any 'displacement' effects of birds moving from natural nesting sites to artificial compensation sites would be a problem, given that the vacated nesting sites would presumably become available to recruits. c) Response to Applicant's evidence at IHS6 that kittiwake productivity has been found to be higher at offshore nesting colonies on artificial structures.	NE	4	
7	Provide interim results from the current predator eradication study for the Bailiwick of Guernsey.	Applicant	5	The Applicant will present interim results of the predator eradication surveys at Deadline 5 in the Predator Eradication Implementation Studies Update.
8	Check and provide comment on the effect of Ramsar designations in relation to policy and legislative protection of proposed compensation sites in Guernsey.	Applicant	4	As stated at ISH 6, the islands being considered by the Applicant are largely covered by Ramsar designations. Herm, Jethou and The Humps Ramsar site consists of two small islands (Herm and Jethou), nine rocky islets (including Grande Fauconnière, Crevichon and Brehon Tower), six sandbanks (The Humps) and surrounding shallow tidal waters. All of the Humps and associated satellite islands are included within the Ramsar, with both razorbill and guillemot listed within the Ramsar designation. Alderney West Coast

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				and the Burhou Islands Ramsar site comprises the western coast of Alderney and adjacent shallow waters and islets including Les Etacs, Ortac, Hanaine Bay stack and Burhou Island and many other islands/ islets. However, the following locations shortlisted by the Applicant in relation to potential eradication are not included within Ramsar sites: Alderney - Le Puits Jervais, La Nache, Fourquie, Rousset, L'Etac de la Quoire and Coque Lihou and Sark - Grand Moie, Burons, Petite Moie, Les Autelets, L'Etac de Sark, Little Sark, La Grune and Bec du Nez. The Applicant has sought further clarity from the States of Guernsey and Alderney on its management policies for Ramsar sites and has received the following response from the Alderney Wildlife Trust: "'Alderney's Ramsar site and other sites' are protected primarily by three pieces of legislation... 1. Building Development Control (Alderney), Law 2002 - Establishes the Designated Area (greenbelt) which is largely protected from development and also the Alderney Land Use Plan, a 5 yearly policy commitment which specifies in detail the States of Alderney's commitments to the protection of important wildlife areas and which recognises the Alderney Ramsar Site as such. The BDC and subsequent LUPs have dramatically limited development, especially of housing, on the island limiting them to a relatively small pocket of town in the centre of the island with a few outlying developable enclaves. The coastal areas of the island, outside of the harbour, have been recognised by the LUP as of ecological value since 2001 and during the updating of the policy in 2017 the definitions given under this policy were hardened up on. The BDC sets out the requirement for an independent inspector to review major changes to the established LUP and the LUP sets out the scoping and EIA requirements for developments. It is our understanding that any development on sites

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				recognised primarily for their ecological importance would, if considered for development at all, would require scoping and subsequent EIA as a minimum. 2. The Protection of Wild Birds (Alderney), Ordinance 2005 - whilst wildlife conservation legislation is extremely limited on Alderney, and something the AWT and States of Alderney hopes to see changed in the near future, the Protection of Wild Birds Ordinance enabled the States of Alderney to designate Burhou, the island at the centre of the Alderney Ramsar Site a protected bird area in 1987. It also provides direct protection against the disturbance of birds and their nests which effects all areas of Alderney including the south coast stakes and adjacent cliff tops Protection of Wild Birds (Alderney) Ordinance, 2005 (Consolidated text). 3. The Renewable Energy (Alderney), Law 2007 - lays out the mechanisms which will control the development of renewable energy around the island both at sea, and more recently this was updated to include land based installations. Clause 7.2.a of the law specifies the Committee will take into special consideration any activities '...detrimental to the environment including, without limitation, the land, marine and air environment and natural habitats including the seabed,...' The Applicant also notes that the Alderney Wildlife Law 2020 is currently published in draft form. It should also be noted that the locations shortlisted for eradication are largely protected from development or recreational disturbance by their geography and other limitations (i.e., step sea stacks surrounded by fast tidal currents) making them treacherous to land boats or gain access.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				Furthermore, the Ramsar designation includes other mobile fauna such as fish species and seals for which the surrounding seas and islands/ islets provide supporting habitat (including haul out locations for seals) - therefore reinforcing the importance and subsequent protection afforded to the wider ecosystem. Besides commercial and non-commercial fishing, tourism is the main activity in the area – bird watching being a major tourist attraction. Therefore, there is a further commercial reason for local authorities to protect and preserve the area for seabird species.
9	a) Provide clarification on the Proposed Development HRA implications of the Environmental Impact Assessment (EIA) and HRA measures contained in the Compensation Commitment Register [APP-060] for each of the proposed and without-prejudice compensation measures, including the columns that are currently blank. b) Comment on how the Competent Authority can be sure that each measure will be secured, if some or all of them are still subject to assessment for a later consent – not just HRA but also possibly EIA. c) Further, what if a measure needs neither a HRA nor a formal consent? How is it still assured for the purposes of the Development Consent Order Habitats Regulations Assessment (which relies upon it)?	Applicant	4	(a) The purpose of the list of commitments provided by the Applicant at the pre-Application stage is to provide relevant stakeholders and the ExA with comfort that any future delivery of compensation measures would be without likely significant effect (in EIA terms) and that the HRA of proposed compensation measures can be satisfactorily conclude no adverse effect on integrity (AEoI). The implications for the development HRA therefore are that the ExA can be confident that a conclusion of no AEoI for the compensation measures can be reached post-consent. The implications for the development EIA therefore are that any compensation measures can be delivered without LSE (in EIA terms). The commitments will be secured post consent through consenting processes with the relevant authority as required, and hence are blank at this stage of the development process. (b) and (c) It will be the Applicant's responsibility to obtain all necessary consents to ensure the delivery of each of the compensation measures, should they be required. It is also the Applicant's risk, as the drafting it has proposed will ensure that (should a measure be required) no wind turbine generator can operate (and thus there is no risk of harm to the relevant species) until the measure has been implemented. There is therefore a legally secured practical and commercial imperative for the Applicant to obtain necessary consents for the measure(s) which will

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				necessarily include satisfying any applicable HRA (and/or EIA) requirements to obtain those consents. The Applicant has demonstrated via its HRA of the Compensation Measures document (APP-179 and APP-180) that it is confident that there will be no risk of adverse effects on integrity derived from the delivery of the compensation measures and therefore that the ExA can be confident that any future HRA of proposed compensation measures can be satisfactorily concluded. If no HRA is required, that is because the legislative regime in the UK has recognised that the activity is sufficiently low risk and / or obviously beneficial that there is no need to regulate it (this being reflected in the nature of the measures themselves e.g. provision of by-catch reduction technology to fishers). The Applicant notes that by providing a preliminary assessment of the potential for EIA and HRA impacts of the compensation measures in order to provide additional comfort to the ExA and other stakeholders during Examination, it has gone above and beyond the approach taken on previous projects. The information provided by the Applicant now is significantly in excess of that available to the Secretary of State when he took the decisions for Hornsea Three, Norfolk Boreas, Norfolk Vanguard, East Anglia One North and East Anglia Two.
10	Provide a summary of your current position regarding project alone and in-combination HRA effects, including Adverse Effect on Integity, whether a derogation case is robustly made, and if the necessary and without prejudice compensatory measures are sufficiently robust scientifically, and capable of being secured and delivered, if required.	NE, MMO, the Wildlife trusts and the RSPB	5	