



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

FIVE ESTUARIES OFFSHORE WIND FARM

Appendix C4 to the Natural England Deadline 4 Submission
Natural England's Comments on Ornithology [REP2-007, REP2-009, REP2-011, REP2-013, REP2-015, REP2-017]

For:

The construction and operation of Five Estuaries Offshore Wind Farm, located approximately 57 km from the Essex Coast in the Southern North Sea.

Planning Inspectorate Reference EN010115

03 December 2024

Natural England's Advice on Ornithology at Deadline 4

In formulating these comments, the following documents have been considered:

- [REP2-005] 5.4.1 HRA Site Integrity Matrices – Revision B (Tracked)
- [REP2-007] 5.5.3 Lesser Black-Backed Gull Compensation Evidence, Site Selection and Roadmap – Revision B (Tracked)
- [REP2-009] 5.5.4 Kittiwake - Evidence, Site Selection and Roadmap – Revision B (Tracked)
- [REP2-011] 5.5.5 Guillemot and Razorbill - Evidence, Site Selection and Roadmap – Revision B (Tracked)
- [REP2-013] 5.5.6 LBBG Implementation and Monitoring Plan – Revision B (Tracked)
- [REP2-015] 5.5.7 Kittiwake Implementation and Monitoring Plan – Revision B (Tracked)
- [REP2-017] 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plan – Revision B (Tracked)
- [REP2-028] 10.20.2 Technical Note: Offshore Decommissioning
- [AS-057] 10.18 Report on Proposed Changes
- [AS-058] 10.18.1 Figures for Report on Proposed Changes

1. Summary

Natural England has reviewed the documents listed above and below are our detailed comments. These comments should be considered alongside our updated Risk and Issues Log and Principal Areas of Disagreement Summary Statement (PADSS) in Appendix L4 to our Deadline 4 submission.

2. Detailed comments

Table 1: Natural England's Advice On: [REP2-005] 5.4.1 HRA Site Integrity Matrices – Revision B (Tracked)

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	Matrix 9: OTE SPA	<p>The evidence supporting conclusions state there will be no work in the Outer Thames Estuary Special Protection Area (OTE SPA) between 1st Nov and 31st March but does not specify if this means within the SPA only or the SPA + 2km buffer.</p> <p>More clarity in the text would provide reassurance that the seasonal restriction on work in the offshore export cable corridor (ECC) will be applied to the appropriate area.</p>	<p>As per our advice in Appendix C of Natural England's relevant representations (NE ref. C9 and C21) [PD2-005] we would support the Applicant's conclusions if no work is undertaken on the ECC within the OTE SPA + 2km buffer between 1st November and 31st March. The seasonal restriction must extend to the 2km buffer around the seaward boundary of the SPA. This is because evidence suggests red-throated diver displacement from vessel activity is highly likely within this range (Burt <i>et al.</i> 2017, Schwemmer <i>et al.</i> 2011, Fleissbach <i>et al.</i> 2019) and, for a proportion of the population may extend much further (Burger <i>et al.</i> 2019, Mendel <i>et al.</i> 2019). To protect site integrity vessel activity must not restrict habitat use by the divers within the boundary of the SPA.</p>
2	Matrix 10/11: AOE SPA/Ramsar	<p>The evidence supporting conclusions quote the estimated impacts on lesser black-backed gull (LBBG) using the Applicant's approach and not those advised by Natural England.</p>	<p>Natural England advised approach to the project alone and in-combination impacts on LBBG should be presented alongside the Applicant's preferred approach. Importantly, we consider the impact as calculated and apportioned by the Natural England advised parameters to be the appropriate one to use (see below).</p>

Table 2: Natural England’s Advice On: [REP2-007] 5.5.3 Lesser Black-Backed Gull Compensation Evidence, Site Selection and Roadmap – Revision B (Tracked).

NE Ref	Section	Key Concern and/or Update	Natural England’s Advice to Resolve Issue
1	Secs. 1.1.18 - 1.1.23	The project alone and in-combination impacts presented here are incorrect and should be those estimated using the Natural England preferred approach. These are the figures that the compensation quantum should be based upon.	<p>We reiterate that the impact on LBBG as calculated and apportioned by the Natural England advised parameters is the appropriate one (c.f. related comments on document 5.5.6 [REP2-007]).</p> <p>Natural England therefore advocate that the compensation quantum should be based on the predicted mortalities derived using its recommended approach, i.e. <u>11.09 birds per annum</u> and not 5.7 birds per annum as used by the Applicant. This is because of the Applicant’s approach to adult apportioning and use of sabbaticals in the calculation. These concerns have already been addressed in our Relevant Reps [PD2-005] and response to the Examining Authority’s Written Questions 1 [REP3-034]. Consequently, we advise that the impact on the lesser black-backed gull (LBBG) Alde Ore Estuary SPA population, as calculated and apportioned by the Natural England advised parameters, is the appropriate one.</p> <p>Natural England also note that the Applicant has calculated the compensation quantum (CQ) using the method developed by the Hornsea 4 Project (HOW4) for guillemot and gannet. We advise that the method developed and employed by the Hornsea 3 Project (HOW3) for kittiwake would be <u>more ecologically appropriate</u>. This is because the Hornsea 3 method involves additional consideration of philopatric birds (i.e. those that remain at their natal colony). It also considers that the productivity of the colony should</p>

			<p>account for the annual breeding adult mortality to reduce the reliance on immigration from the meta-population.</p> <p>However, Natural England acknowledge that the 'HOW3 method' relies on detailed demographic data not available for LBBG and so could not be fully applied in this case. With that in mind we would accept the 'HOW4 method' if the CQ calculation were amended to include an adjustment for natal philopatry. This is to account for birds migrating away from a breeding site that will not recruit back into their natal colony when they reach the breeding age. The rates on natal dispersal are given in Horswill and Robinson (2015).</p> <p>As a precautionary measure, Natural England also advocate that the compensation measure should be at a scale that has the potential to deliver enough birds to replace the losses predicted at the upper confidence interval (UCI) of the mortality estimate rather than the mean, in order to assess whether the proposed compensation could encompass those impacts. Further, compensatory measures guidance states a 1:1 ratio would only be appropriate if there was little uncertainty around the success of the measure and therefore presenting ratios up to 3:1 is appropriate.</p> <p>We highlight that in terms of developing numeric targets for assessing the success of the compensation measure e.g. in an Implementation and Monitoring Plan (IMP), Natural England regard it as generally legitimate to look at the quantum derived using the central impact (mean) value plus an appropriate ratio applied, though there may be cases where the level of uncertainty around the predicted impacts is so great that the 95%</p>
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			UCI is appropriate. Nevertheless, it is important to demonstrate that the compensation has the potential to provide compensation for the 95% UCI value with an appropriate ratio.
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Table 3: Natural England’s Advice On: [REP2-009] 5.5.4 Kittiwake – Evidence, Site Selection and Roadmap – Revision B (Tracked).

NE Ref	Section	Key Concern and/or Update	Natural England’s Advice to Resolve Issue
1	Secs. 1.2.2 and 3.6.1	The compensation quantum presented is still derived using the mean collision estimate (1.1 birds) and not the impact estimated at the upper (95%) confidence interval (2.3 birds).	<p>Natural England welcome the Applicant’s use of the Hornsea 3 project (HOW3) method to calculate the number of pairs required at the artificial nest structure (ANS) to compensate the impact of the project. This is in line with advice commissioned by The Crown Estate to inform the Round 4 strategic compensation plan for kittiwake. The HOW3 method involves additional consideration of philopatric birds (i.e. the proportion of birds that remain at their natal colony) and considers that the colony’s productivity should account for the annual breeding adult mortality to reduce the reliance on immigration from the meta-population.</p> <p>However, we advise the 95% upper confidence interval (UCI) impact estimate (2.35 birds) is used to calculate the compensation quantum (rather than the mean, 1.1 birds – see Table 6 NE Ref. 1 below) and advise that this approach should be maintained in updated calculations. This approach will help encompass the uncertainty regarding the level of impact and ensure sufficient nest spaces are allocated on the ANS should a proportion be unoccupied for any reason.</p> <p>We also highlight the uncertainties surrounding future colonisation and productivity of any colony at the ANS.</p>

			<p>Given the small impact to be compensated we agree a contribution to a single ANS location is appropriate but consider that a 3:1 compensation ratio offers a more realistic prospect of the measure delivering benefits into the UK National Site Network (NSN).</p> <p>See additional comments for doc 5.5.7 [REP2-015] below.</p>
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Table 4: Natural England’s Advice On: [REP2-011] 5.5.5 Guillemot and Razorbill – Evidence, Site Selection and Roadmap – Revision B (Tracked).

NE Ref	Section	Key Concern and/or Update	Natural England’s Advice to Resolve Issue
1	Secs. 1.2.3-1.2.5	The Applicant has applied the Hornsea 4 project method to calculate their compensation quantum contrary to our advice to use the Hornsea 3 project method in this case. The Applicant also contends that the CQ they have calculated is likely to lead to an over estimation of the number of nests required for compensation because it does not consider the likely population benefits accrued by the reduction in disturbance caused by their proposed management measure.	<p>Natural England advise the Applicant to consider the HOW4 method they have chosen to calculate the CQ does not account for natal philopatry and the likely loss of some of the matured offspring to other colonies. Therefore, just as omitting the benefits of disturbance reduction from the calculation could lead to an over estimation of the number of nests required for compensation, so too could the omission of natal philopatry underestimate it.</p> <p>Natural England advise these uncertainties need to be factored into the CQ calculation (where data are available) or taken into account by applying a ratio to the quantum to scale up the compensation appropriately. In this regard we advise the Applicant to calculate the CQs using the HOW3 method to take account of natal philopatry. We continue to advise that</p>

			<p>the compensation quantum should be scaled with respect to predicted impacts to auks at Flamborough and Filey Coast SPA (FFC SPA) under the 70% displacement and 2% mortality scenario. We highlight there is precedence for the 70%/2% approach to auk compensation elsewhere e.g. Sheringham Shoal and Dudgeon Extension Projects (SADEP). An appropriate ratio should then be applied to this CQ to test whether the measure can provide an adequate number of pairs can recruit enough birds into the population to replace losses predicted at the upper (95%) confidence interval of the impact value.</p> <p>Furthermore, Natural England advise that it is likely to be very difficult to quantify the nature and extent of the potential threat posed by anthropogenic disturbance and how this may affect nesting success. It will, therefore, be challenging to quantify the potential efficacy of the proposed measures in addressing this threat.</p>
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Table 5: Natural England’s Advice On: [REP2-013] 5.5.6 LBBG Implementation and Monitoring Plan – Revision B (Tracked).

NE Ref	Section	Key Concern and/or Update	Natural England’s Advice to Resolve Issue
1	Sec. 3.2.1	Agreement between the landowner (Cobra Mist Ltd.) and developer remain unresolved at the Orfordness site. Indeed, the letter from Nicholas Gold dated 3 rd November 2024, (ref. 20048763) indicates that the Cobra Mist Ltd. land is no longer available. The Applicant should therefore consider an alternative location, preferably within the AOE SPA, as a matter of some urgency.	Natural England would encourage the Applicant to liaise with the National Trust (NT) to explore again the previously scoped out option at Lantern Marshes. This should be in collaboration with North Falls OWF who are already in discussions with NT to use this site for a similar purpose. Natural England emphasise close collaboration with North Falls OWF will be especially valuable at this stage so that both projects can deliver their compensation using a combined approach.

			<p>Whilst the Outer Trial Bank (OTB) site option remains promising, a site within the AOE SPA has clear advantages in delivering birds direct to the impacted protected area. However, given the Norfolk Projects' predator exclusion site on Orfordness has yet to attract any birds after 2 seasons, we advise that progressing a compensation site within the AOE SPA in addition to OTB would offer a far more robust option.</p> <p>A '2 site' compensation package (shared with North Falls OWF) provides less risk than proceeding with just one site, as each site could potentially cover for any shortfall in the other. This would be particularly valuable in the early stages when any delay in occupation might accrue a mortality debt that may prove difficult for a single site to make up for in later years.</p>
2	Sec. 3.3.5	Against NE advice, the Applicant continues to advocate that the Hornsea 4 project (HOW4) method for calculating the compensation quantum and its approach to estimating collision impacts are appropriate for determining the compensation levels for the lesser black-backed gull.	C.f. response to [REP2-007] 5.5.3 Lesser Black-Backed Gull Compensation Evidence, Site Selection and Roadmap – Revision B (Tracked)
3	Sec. 5.2.2	To increase the likelihood of successful colonisation the Applicant plans to use several of the adaptive management measures from the beginning of the measure, e.g. deploying decoys birds, playing play back tape lures and creating nesting platforms within the proposed site at the AOE SPA.	Natural England welcome the adaptive measures proposed by the applicant and agree they have the potential to help minimise the accrual of mortality debt by encouraging birds to occupy and nest at the site from Year 1. In this regard we note that LBBG begin to return to their nest sites from late February (Ross-Smith <i>et al</i> , 2014) and therefore also suggest that the compensation area is made available before this time in Year 1 to allow pairs adequate time to scope the area before nesting commences (usually in April).

			<p>Importantly, additional adaptive management will be needed imposed if too few chicks are produced each season. This is something that could be achieved by improving the prospects at the existing site but also having a worthy additional site (see comment 1 above for section 3.2.1).</p>
	<p>Secs. 5.3.1 and 5.3.2</p>	<p>The Applicant plans to implement their compensation 3 full years prior to operations but in doing so risks accruing mortality debt particularly if the progress a compensation package comprising only one site.</p>	<p>Natural England advise LBBG compensation measures should be completed at least 4 full years prior to the operational phase. We highlight this was achieved by the Norfolk projects for their predator exclusion fence on Orfordness, so it is a realistic requirement.</p> <p>LBBG reach maturity in their 4th year, but age of first breeding varies between 4 and 7 years old (Ross-Smith et al. 2014). Therefore, offspring fledging from a compensation site established 3 breeding seasons before commencement of operation will not have recruited into the adult breeding population. As a result, the proposed timing of delivery will accrue some mortality debt. In addition, colonisation in Year 1 is far from guaranteed (noting that the Vanguard/Boreas/East Anglia One North/East Anglia Two compound has not been colonised after two breeding seasons). This debt will need to be recovered in future years, and the debt will compound if a suitably sized colony is not established quickly.</p> <p>This risk has not been specifically addressed by the Applicant in their adaptive management. Nevertheless, we recognise that if both sites proposed by the Applicant were progressed, they would have the potential to deliver more than the required level of compensation over the lifetime of the project (see Comment 1 above).</p>

Table 6: Natural England’s Advice On: [REP2-015] 5.5.7 Kittiwake Implementation and Monitoring Plan – Revision B (Tracked).

NE Ref	Section	Key Concern and/or Update	Natural England’s Advice to Resolve Issue
1	Secs. 4.2.1 – 4.2.3	<p>The Applicant has derived its compensation quantum (CQ) using the mean collision estimate and not the value at the upper (95%) confidence interval (UCI). The collision estimate it used is also calculated using its own method rather than Natural England’s preferred approach to the analyses. The quoted collision estimates used to calculate the compensation quantum differ across documents too and it is unclear which apply. In addition, there is a discrepancy between the stated approach to the CQ calculation for kittiwake and which methodology finally applied is unclear. For example, in this document the Applicant states the Hornsea 4 project (HOW4) method was used but in document 5.5.4 they state the Hornsea 3 project (HOW3) method.</p>	<p>Natural England do not consider a CQ calculated using the central impact value to be appropriate for kittiwake compensation at artificial nest structures (ANS’s). Natural England advise for kittiwake that the CQ is calculated using the UCI value, see comment 1 above, [REP2-009] 5.5.4 Kittiwake - Evidence, Site Selection and Roadmap – Revision B (Tracked).</p> <p>Furthermore, the mean collision estimate quoted in this document (0.82 birds) matches the value quoted in the updated RIAA but differs to that quoted in document 5.5.4, Kittiwake - Evidence, Site Selection and Roadmap – Revision B (1.1 birds) – see comments above. The difference appears to be related to which nocturnal activity factor (NAF) was applied to the CRM and is based on two NAF levels Natural England recommended at the time of submission. The collision estimate of 0.82 birds is the mean derived using the lower NAF (25%), while the 1.1 birds collision estimate is derived using the higher NAF (50%). Natural England recommend the higher NAF is used in this case. The latest Natural England advice recommends applying a 40% NAF to kittiwake data (see JNCC, Natural England, Natural Resources Wales, NatureScot. 2024).</p> <p>Regarding the approach to CQ calculation for kittiwake, we advise the HOW3 method is more ecologically appropriate (see comment 1 above, [REP2-009] 5.5.4 Kittiwake - Evidence, Site Selection and Roadmap – Revision B (Tracked)).</p>

Table 7: Natural England’s Advice On: [REP2-017] 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plan – Revision B (Tracked).

NE Ref	Section	Key Concern and/or Update	Natural England’s Advice to Resolve Issue
1	Sec. 4.3.1	Local landowner and stakeholder participation has not been agreed yet although discussions with several are underway.	Natural England welcome the ongoing discussions with local landowners and stakeholders and the progress made so far but note no agreements have been met yet. Evidence that the proposed management measures (wardening, signage, education, visitor access statements, and engagement with local stakeholders) are achievable at the proposed sites should be in place so that prescribed work can commence on time and the preferred locations.
	Sec. 5.2.1	The Applicant plans to have the compensation measures in place 4 years prior to operations. In doing so they are likely to accrue mortality debt on the impacted guillemot and razorbill populations. This is because both species do not reach adulthood until around 6 years old. Therefore, operations will commence before young ‘produced’ by the compensation will reach maturity and enter the breeding population.	In setting the delivery of compensation 4 breeding seasons prior to an impact occurring (at the operational phase) there is a risk of impacts arising in advance of the measures becoming functional (notwithstanding the risk of impacts may commence prior to operations in the construction phase). Guillemots reach breeding age maturity at 6 years old, thus it will take at least 7 breeding seasons after compensation measures are implemented for young fledged to recruit into the adult breeding population and thus provide compensation for the project’s impacts. The equivalent values for razorbill are 5 and 6 years, respectively, which we recommend is a challenging lead-in time the OWF projects. Therefore, if the Applicant wishes to retain the current implementation schedule, Natural England consider that the scale of the requirements can and should be increased to address the risk of ‘mortality debt’ accruing in the early years of the project.
2	Secs. 5.4.6 - 5.4.7	Whilst attempts will be made to monitor the auk populations and productivity throughout, the Applicant seeks not to use changes in	To assess the success of the measure, it would be preferable to use changes in population counts and productivity estimates rather than just visitor statistics or

		<p>these parameters to measure the success of the compensation project. Instead, the Applicant seeks to measure success solely through the reduction of anthropogenic disturbance.</p>	<p>disturbance rates. The purpose of compensation is to ensure sufficient chicks are produced to ensure the required number of adults survive and then recruit into the national site network. Therefore, beneficial changes to the auk populations and productivity arising from the compensation project are appropriate measures of success. These can be sought through an extended monitoring plan designed to detect and compare changes in the auk populations and productivities across sites with and without measures to reduce anthropogenic activity.</p> <p>Natural England recognise that change in anthropogenic activity to reduce disturbance will be a key objective of the project, but we are unable to agree that its sole use as a measure of the project's success is acceptable. This is because it is not yet known to what extent disturbance is an issue at the proposed sites and what degree of change in any disturbance will benefit the birds, if at all. Consequently, whilst a reduction in anthropogenic activity may occur it would need to be sufficient to benefit the birds.</p> <p>Whilst it may prove difficult, we advise that the Applicant needs to survey the auk populations and productivity, to try to assess any changes including those due to anthropogenic activity. Approaches to improve the accuracy of monitoring should be sought, if necessary. The use of drones presents one possibility and could be investigated further.</p> <p>We also acknowledge natural fluctuations in the auk populations and productivity caused by other factors such as food availability and predation may mask any benefits brought about by the compensation measures.</p>
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			Extending the monitoring program to include control sites in the region could help determine if any benefits from the compensation measures are being accrued at the study sites over the long-term.
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Table 8: Natural England’s Advice On: [REP3-026] 10.27 Digital Aerial Survey – Outer Trials Bank

NE Ref	Section	Key Concern and/or Update	Natural England’s Advice to Resolve Issue
1	3	The date of the survey did not coincide with the egg stage of the nesting cycle when most birds would have been sitting, and the number of AON could be counted accurately.	Whilst the survey results are useful, the accuracy of the nest counts does not likely represent the true number of apparently occupied nests (AON). The breeding phenology of the gulls is such that we can assume most of the birds would have been sitting on eggs earlier rather than later in June. Therefore, a DAS in late June would likely be less accurate than a survey carried out in late May or early June.

3. References

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