



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

Five Estuaries Offshore Wind Farm

Appendix P7 to the Natural England Deadline 7 Submission

**Natural England's Response to the Report on the Implications for European Sites
(RIES) [PD-027]**

For:

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

Planning Inspectorate Reference: EN010115

03 March 2025

Appendix P7 Natural England's Response to the Report on the Implications for European Sites (RIES) [PD-027]

Introduction

Natural England has reviewed the Report on the Implication for European Sites (RIES) [PD-027] for the Five Estuaries Offshore Wind Farm Project. In Table 1, we provide answers to the questions posed within the RIES. Further comments are detailed in Table 2.

General Comments

Natural England acknowledges that only submissions up to Deadline 5 on 10 January 2025 have been considered in the RIES, therefore the RIES does not take account of updated advice on various aspects since then. Where we are able to, we have signposted to our updated advice. Natural England recommends that the RIES is updated before it is included within an ExA report to the Secretary of State (SoS). As previously advised to PINS and BEIS, Natural England does not consider consultation on the RIES adequately discharges the statutory requirement to consult Natural England on Appropriate Assessments, as the RIES draws no AEol conclusions.

If it is considered that the conservation objectives for any designated site interest feature will be hindered, or there is reasonable scientific doubt regarding this, then an Adverse Effect on Integrity (AEol) cannot be excluded.

Please be advised that as a Statutory Nature Conversation Body (SNCB) our remit does not extend beyond advising on the ecological merits of proposals, thus excluding us from making comment on Imperative Reasons of Overriding Public Interest (IROPI) submissions.

Table 1: Questions within the RIES (addressed to Natural England)

RIES ID	RIES Question	Natural England Comment	RAG Status
Main HRA Report – Additional Sites			
Q2.2.3	Q2.2.3 [To NE and all IPs] Other than the sites and features listed above, the ExA is not aware of any representations from IPs identifying any additional UK European sites or qualifying features for inclusions in the Applicant’s HRA. IPs are requested to advise if they consider that additional sites or qualifying features could be affected by the Proposed Development.	We refer the Examining Authority to Table 5.1 in the Cover Letter of Natural England’s Relevant Representation [RR-081].	
Table 2.1 Issues Raised in the Examination to date by the ExA and IPs in relation to the Applicant’s screening of LSEs (alone and in-combination)			
QT2.1.3 (Table 2.1)	<p><u>Collision Risk to Marsh Harrier, AOE SPA, Minsmere to Walberswick SPA and Ramsar Site.</u></p> <p>QT2.1.3 [To NE] The Applicant argues that marsh harrier and nightjar migrate to southern Europe and sub-Saharan Africa (in a southerly direction) and therefore considers it highly unlikely that migrating marsh harrier and nightjar from the AOE and Minsmere Walberswick SPAs have connectivity with the Proposed Development’s array located to the east. On what basis does NE consider there is a risk that these species would migrate east and encounter the array?</p>	The project arrays lie to the South South-East (SSE) of Minsmere to Walberswick SPA and well within a broad southward migratory pathway. Therefore, in line with the Applicant’s own reasoning, Marsh Harrier will be at risk and should be screened into the migratory Collision Risk Modelling (CRM). The Applicant has also chosen to screen in Marsh Harrier for the overlapping Ramsar site, so it should also screen in the SPA population as they are the same population. Regarding marsh harrier from the AOE SPA, Natural England consider it prudent to assume the birds could arrive from any sector south of the SPAs latitude in spring but have more concern for the post-breeding dispersal of adults and young which can be any direction prior to the southward migration in autumn (BTO 2025, Strandberg 2008). On this evidence, and the closer proximity of the AOE SPA to the proposed arrays, Natural England advise the raptor should be screened into the assessment.	
QT2.1.4 (Table 2.1)	<p><u>Collision Risk to Nightjar, Minsmere to Walberswick SPA</u></p> <p>Please see above question.</p>	For the Minsmere-Walberswick SPA, both marsh harrier and nightjar have been screened out of the migratory Collision Risk Modelling (CRM) on the assumption no migratory/dispersal movements will be directed to and from the east. However, the SPA lies to the north of the Project Development Area (PDA) and very much along a southward migratory route to and from it. The Applicant’s reasoning also contradicts their conclusions for the Minsmere-Walberswick Ramsar site – for example, the suggestion that marsh harrier from the Ramsar site is at risk of collision but not from the	

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		<p>SPA. If this is not an error, then we advise the SPA population should be treated the same as the over-lapping Ramsar site's population in the assessment.</p> <p>Natural England also note that this SPA lies further to the North than the AOE SPA and not west of the PDA as stated by the Applicant. Therefore, by the Applicant's own reasoning, nightjar should be screened into the migratory CRM. On this basis, we recommend that nightjar should be screened into the assessment. As highlighted in our Risk and Issues Log at Deadline 6 [REP6-070] we are content to 'agree to disagree'.</p>	
<p>QT2.1.5 (Table 2.1)</p>	<p><u>Impacts to Benthic Habitats supporting SPA and SAC qualifying features (prey availability), Red Throated Diver, Outer Thames Estuary SPA.</u></p> <p>The ExA notes that [REP5-011] screens out LSE for red-throated diver of OTE SPA for prey availability. It therefore understands NE's comments to relate to the Applicant's screening of LSE but would welcome clarification if this is not the case.</p> <p>QT2.1.5 [To NE] Confirm if these matters are resolved. If not, confirm for which European sites and qualifying features you are not content and identify what further assessment you consider is required from the Applicant.</p>	<p>Natural England advises that best practice is for implications to the wider ecosystem, as a result of impacts to benthic receptors, to be assessed within the benthic EIA chapters and where appropriate HRA. Of particular concern is where there is overlap with an SPA and potential for changes in prey availability. However, we note that there is an assessment of prey availability in the Ornithology ES chapter [APP-073], and that LSE for OTE SPA red-throated diver in regard to prey availability is screened out. Therefore, for this project an assessment of impacts to supporting benthic habitat to Outer Thames SPA within the benthic ES chapter is unlikely to materially change this assessment. Accordingly, we confirm that no further action on this matter by the Applicant is required</p>	
<p>Benthic and Intertidal Ecology and Supporting Marine Processes – MLS SAC</p>			

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Q3.3.1	<p><u>AEol to MLS SAC</u> Based on [PD2-004] and [PD2-007], the ExA understands that NE's advice is that AEol to the MLS SAC cannot be excluded for the following pathways assessed in the RIAA [REP1-016] because of installation, maintenance and decommissioning of cable and associated cable protection:</p> <ul style="list-style-type: none"> • physical habitat loss or disturbance (construction (C), operation (O) and decommissioning (D)) • suspended sediment or deposition (C, O and D) • changes to physical processes (O) <p>Q3.3.1 [To NE] Confirm if the ExA's understanding is correct or, if not, clarify which other activities are of concern and which pathways it considers cannot be excluded from AEol and provide an explanation for each.</p>	<p>Natural England is largely in agreement with the ExA's understanding of the impact pathways identified, with the exception of changes to suspended sediment concentrations due to project-related activities/impacts which are considered likely to be short-term/temporary. We would also advise that the first bullet point or impact pathway (physical habitat loss/disturbance) includes 'alteration' (i.e. of designated subtidal sandbanks or supporting benthic communities and species). Similarly, we would advise that the third bullet point, or impact pathway, includes 'geomorphological' processes.</p> <p>We consider that mitigation measures could be adopted, [although, these have not been fully presented, agreed and secured] to minimise the impacts to acceptable levels for all but habitat change/loss from the placement of cable protection, for which a without prejudice derogations case and compensation measures have been provided by the Applicant.</p>	
Table 3.1 Annex I Habitats – Key Issues Raised in Examination to Date by the ExA and IPs in Relation to the Applicant's Assessment of Effects on Integrity (Alone and In-Combination)			
3.1.3	<p><u>Sediment Disturbance from Cable Trenching</u></p> <p>QT3.1.3 [To NE and the Applicant] Advise if this matter is resolved, based on the Applicant's confirmation modelling of cable trenching assumed up to 100% of material being fluidised.</p>	<p>In Table 2.1 [APP-071], the estimated total volume of sediment disturbed due to inter-array and export cable installation was based on the assumption that 50% of material is ejected from the trench whilst the remainder of the material is fluidised, but retained as sediment cover in the trench. However, in the updated MDS Technical Note [REP6-038], the Applicant states that the 50% assumption was used because in most cases during simultaneous lay and bury activities less than 100% of material in the trench is expected to be ejected into the water column. It is also stated that pre-lay trenching may be used (for cable installation), in which case the full 100% volume of material will be excavated. However, it is also stated that it is unrealistic that the maximum depth of 3.5m will be required or achieved for the pre-lay trench and will actually tend towards a typical average burial depth of 1.75m. Consequently, we advise that firstly, the Applicant should clarify whether the most realistic worst case burial depth is 1.75m or 3.5m.</p>	

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		Furthermore, given that the geotechnical properties across the array areas and offshore export cable corridor are yet to be confirmed, and it is possible that a combination of cable burial techniques may be used; we advise that the Applicant should adopt a worst-case cable burial depth and percentage of sediment disturbance in their calculations and assessments. This is in line with other recent OWF marine processes EIAs (see [APP-013] Hornsea Project Four). Therefore, this issue remains unresolved.	
3.1.4	<p><u>Boulder Clearance and UXO Clearance, and Pre-Lay Grapnel Run</u></p> <p>NE noted [REP5-097] that [REP4-034] sets out clarification on boulder clearance and pre-lay grapnel run but [REP4-061] and [REP5-096] continue to show these as not agreed.</p> <p>QT3.1.4 [To NE and the Applicant] Confirm if this matter is resolved based on information provided by the Applicant including in [REP4-034]. If the matter has not been resolved, explain why that continues to be the case.</p>	In [APP-071] the Applicant has provided an indicative total maximum seabed preparation area/volume for the proposed export cable laydown areas, including dredging, boulder removal, and UXO clearance. However, a similar estimate including pre-lay grapnel run, boulder removal, and/or UXO clearance (and other seabed preparation activities) has not been provided for sandbanks and designated areas of seabed (e.g. Table 2.8, APP-071). The updated [REP4-035 and REP-038] have only repeated the MDS for boulder clearance from the Project Description and, hence, the indicative total maximum seabed preparation area/volume for sandbanks and designated areas of seabed remains unclear.	
3.1.5	<p><u>Deposition from Dredge Disposal and Sandwave Levelling</u></p> <p>The ExA understands that NE will provide updated advice at DL6 and this matter remains under discussion.</p>	Please see Appendices B6 and E6 to Natural England's Deadline 6 Submission.	
3.1.6	<p><u>Indirect Effects to SAC</u></p> <p>NE (E32 [PD2-007]) advised that the sandbank feature of the SAC extends beyond the SAC boundary and there was potential for indirect effects from impacts to sandbank outside of the SAC. The Applicant [REP1-051] states that evidence suggests</p>	Natural England advises that supporting habitats to Annex I sandbanks and the overall sandbank system extend beyond the designated site. However, based on the Applicant's response at [REP1-051] and other responses Natural England believes that the risk of indirect impacts occurring to MLS SAC from the proposed activities is low. Therefore, no further action is required on this issue.	

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	<p>the sandbank feature does not extend beyond the SAC boundary other than to the east.</p> <p>QT3.1.6 [To NE] Noting the Applicant's response in [REP1-051], confirm if this matter is resolved. If not, provide any evidence you hold that the Proposed Development could result in indirect effects for the SAC.</p>		
3.1.7	<p><u>HVDC</u></p> <p>Relates to: NE (E19 [PD2-007]) noted that the option to adopt HVDC within the ECC was ruled out and advises the Applicant to consider further mitigation to reduce impacts.</p> <p>QT3.1.7 [To NE] Noting the Applicant's response in [REP1-051], confirm if this matter is resolved. If not, provide any evidence you hold that use of HVDC cable would further mitigate impacts.</p>	<p>Natural England advises that this issue is part of an overarching one in relation to ensuring that every effort has been made to use the mitigation hierarchy to minimise the impacts as per the Defra guidance for marine compensatory measures, even if compensation measures are being implemented (Best practice guidance for developing compensatory measures in relation to Marine Protected Areas, 2021). This is further supported by 090224 OWEIP Consultation on updated policies to inform guidance for MPA assessments, which includes a step wise approach to avoiding, reducing, and minimising impacts and the scale of compensation required.</p> <p>In relation to HVDC, Natural England acknowledges and welcomes the Applicants reasoning for concluding that there would be 'no reduction in impact from an HVDC solution'. However, it remains that the Applicant has not sought to progress a coordinated approach with North Falls and/or any of the interconnectors which could help mitigate the impacts from multiple projects. As per our previous advice (E19 in [REP1-051]) we believe that a coordinated approach should still be considered as part of the Examination and note this approach to mitigation has not been considered or addressed in the Applicant's response within [REP1-051].</p>	
3.1.8	<p><u>Operational and Maintenance Activities</u></p> <p>QT3.1.8 [To NE] Confirm what additional information about operational activities you consider is required in the Outline OOMP [APP-248]</p>	<p>Natural England advises at section 2.14 of the Outline OOMP [APP-248] it is not clear how often preventative maintenance will occur and therefore the impacts are unable to be fully assessed. In addition, there is no distinction between activities inside and outside of MLS SAC. Therefore, it is unclear what the permitted activities would be within the site over the lifetime of the project and advise on the scale and significance of the impacts in relation to</p>	

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		designated site features and implications on recovery should O&M activities occur.	
3.1.9	<p data-bbox="271 333 882 395"><u>Disruption of Sediment Transport due to Cable Protection</u></p> <p data-bbox="271 435 965 635">QT3.1.9 [To NE] Provide any evidence you hold to suggest the Applicant's conclusions on sediment transport are not realistic. Identify any alternative benchmarks to MarESA that would be appropriate for use. Submit any relevant evidence you hold from London Array monitoring.</p>	<p data-bbox="999 333 1330 363">(a) Sediment Transport</p> <p data-bbox="999 403 1984 571">Natural England advises that we do not hold the monitoring reports associated with Marine Licence condition discharge. However, we note that the BritNed cable crossing MLA docs are available on the MMO Public Register. Natural England has included extracts from our advice to the MMO on both London Array and BritNed monitoring reports.</p> <p data-bbox="999 611 1984 673"><u>London Array OWF Post-Construction Monitoring Reports (2015, 2016, and 2017)</u></p> <p data-bbox="999 713 1984 1184">The MarineSpace (2015) London Array OWF Year 1 Post-Construction Monitoring Report presented bathymetric survey data that showed a greater degree of scour had occurred at the export cables, WTG foundations, and offshore substations, than was predicted in the Environmental Statement (ES) (2005). The greatest scour observed was at the BritNed cable crossing where the 2014 seabed level was up to 9m lower than pre-construction levels and resulted in exposed and free-spanning cable. The 2014 survey showed scour pits around every WTG surveyed. The deepest depression recorded around a WTG was almost 9m deeper in 2014 than in 2010, with a diameter of 69m (the ES predicted scour holes of 5.0-7.2m depth around monopiles). The Years 2 and 3 Post-Construction Monitoring Reports (2016 and 2017, respectively) also showed levels of localised scour and cable exposure at both the cables and WTGs greater than predicted within the ES.</p> <p data-bbox="999 1224 1872 1286"><u>London Array BritNed Cable Crossing – Remedial Rock Installation (MLA/2014/00502 and MLA/2016/00129)</u></p> <p data-bbox="999 1326 1984 1463">The London Array/BritNed cable crossing is located at the eastern end of Kentish Flats subtidal sandbank, within MLS SAC. Following a review of the pre- and post-installation survey data for the London Array export cables, areas of scour were identified at the cable crossing with the BritNed cable,</p>	

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		<p>in addition to the development of exposures on the London Array export cables. At the BritNed cable crossing, the seabed level was found to be up to 9m lower than pre-construction levels, resulting in exposure and free-spanning cable. HR Wallingford (2014) assessed options for the short-term remediation of the scour pits and applicability of methods for longer-term cable protection to prevent further scour, or risk to the London Array cables. This assessment concluded that ‘Do Nothing’ was not advisable because:</p> <ul style="list-style-type: none"> • Unburied cables would be left vulnerable to environmental/third party damage. • Cable freespans would continue to grow. • Scour would grow uncontrollably. • Rock berms would collapse into the scour pits. • A new subtidal channel would form resulting in destabilisation of the subtidal sandbank. <p>HR Wallingford (in Offshore Wind Consultants, 2016) stated that if, as stated above, nothing was done to mitigate the further evolution of the scour pits in the remedial work zone, it is possible that the subtidal sandbank (at the cable crossing) may fragment with the formation of a new channel. Moreover, if “<i>this were to be the case then part of the functionality of the Annex I habitat at the location would be adversely affected.</i>”(Offshore Wind Consultants, 2016). It was concluded that the introduction of rock fill would stabilise the scour, restrict further scour development, and restore sandbank integrity. In turn, mitigating an increased impact on the hydrodynamics, sediment transport and geomorphology of the wider Outer Thames Estuary region and associated sandbanks. Following this first phase of remediation works, a second phase of rock placement works and third phase of rock dump reprofiling works have been carried out.</p> <p>Cumulative Impacts</p> <p>We know that there are other marine activities, within the SAC, such as offshore wind farm infrastructure, cable installation, rock placement,</p>	

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		<p>aggregate extraction, and ongoing fishing, in particular the use of bottom-towed gear, which may alter the extent, natural composition, and processes. Currently, however, there is insufficient monitoring data to ascertain the full extent of impact from anthropogenic activities (see MLS SAC Condition Assessment (31 January 2025)).</p> <p><u>References</u></p> <p>Offshore Wind Consultants Ltd. (2016) Remedial Rock Installation Works. Supporting Information Document. Report No. OWC-LO-C1543-001R-Rev A (31 March 2016).</p> <p>(b) Alternative to MarESA Natural England note that the relevant MarESA benchmark is “<i>Change in sediment type by one Folk class</i>”. We highlight that no other accepted benchmarks exist, but we advise that the degree of acceptable change in sediment character is highly dependent on the communities present. For example, small changes in given fractions (such as silt and clay) may be insignificant in mixed sediments, but highly significant in sands where the invertebrate and/or fish communities being supported are sensitive to the presence of finer and/or coarse fractions. The Wentworth scale is a useful way of presenting data and understanding the significance of changes in sediment character, but no defined benchmarks for those changes exist.</p>	
3.1.10	<p><u>Impacts to Seabed Morphology from Tidal Change due to Array Area Infrastructure</u></p> <p>QT3.1.10a [To NE] Provide any evidence you hold that the Applicant’s modelling is not a reliable basis from which to assess impacts from tidal change. Clarify if your advice is that tidal change from presence of array infrastructure could result in AEoI of the MLS SAC.</p>	<p>Natural England has no evidence that the Applicant’s modelling is not a reliable basis from which to assess impacts from tidal change. We also advise that, on the basis of the Applicant’s modelling results, no measurable change in residual current speed or direction is predicted either within the array areas, or elsewhere. It is also anticipated that any potential interaction with Galloper OWF WTG foundations wakes would be limited and not aligned with MLS SAC. Therefore, based on the evidence presented we believe that MLS SAC is sufficiently distant from, and to the west, of the arrays as to be unaffected by any changes to the tidal regime due to the presence of VE array infrastructure.</p>	
3.1.11	<p><u>Scale of Impact within the [MLS] SAC</u></p>	<p>We note this is not a question and agree that the ExA understanding is correct. However, we wish to draw the ExA attention to the fact that the</p>	

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		<p>Applicant's case example of Triton Knoll (TK) Electrical system, which was consented in 2016, is not comparable with this case for the following reasons:</p> <ul style="list-style-type: none"> (i) Subsequent to the TK decision our knowledge and understanding of impacts from the placement of cable protection has evolved based on monitoring evidence. We no longer advise that the structure and function and feature extent of benthic designated site interest features can be maintained where cable protection is placed within a designated site. (ii) Inner Dowsing Race Bank and North Ridge SAC was not designated until 2017 and, therefore, conservation advice packages were not available to inform the decision-making process. (iii) Conservation advice packages and condition assessment are available now with both IDRBNR SAC and MLS SAC found to be in unfavourable condition due to anthropogenic activities with restore objectives. (iv) Our advice on TK would have been different if the Project was in its consenting phase at the present time. Consequently, we feel it is more likely that the decision-making process for TK would be similar to that for Dudgeon and Sheringham extension projects, in terms of scale of impacts and condition of designated site. 													
3.1.14	<p><u>MLS SAC Condition Assessment</u></p> <p>QT3.1.14 [To NE] Submit an extract of the information uploaded to the designated sites system or summary of the condition assessment to enable the Applicant to review and update its RIAA [REP1-016] before the Examination's close.</p>	<p>Taken from the updated Margate and Long Sands SAC Condition Assessment:</p> <table border="1" data-bbox="1003 1129 1989 1437"> <thead> <tr> <th colspan="4" data-bbox="1003 1129 1989 1161">Feature Condition</th> </tr> <tr> <th data-bbox="1003 1161 1249 1230">Feature</th> <th data-bbox="1249 1161 1496 1230">Assessment Date</th> <th data-bbox="1496 1161 1742 1230">Unfavourable Declining</th> <th data-bbox="1742 1161 1989 1230">Confidence</th> </tr> </thead> <tbody> <tr> <td data-bbox="1003 1230 1249 1437">H1110 Sandbanks which are slightly covered by sea water all the time</td> <td data-bbox="1249 1230 1496 1437">31/01/2025</td> <td data-bbox="1496 1230 1742 1437">100%</td> <td data-bbox="1742 1230 1989 1437">Low</td> </tr> </tbody> </table>	Feature Condition				Feature	Assessment Date	Unfavourable Declining	Confidence	H1110 Sandbanks which are slightly covered by sea water all the time	31/01/2025	100%	Low	
Feature Condition															
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H1110 Sandbanks which are slightly covered by sea water all the time	31/01/2025	100%	Low												

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		<p>Feature Details</p> <p>Condition assessment is largely based on vulnerability assessment, marine activity information with limited direct monitoring data. The condition assessment will be updated when new evidence becomes available. The Annex 1 Sandbank feature, the subtidal sand and coarse sediment sub-features, and their principal attributes, have been found to be in unfavourable condition as the SAC is under pressure from anthropogenic activities with impacts greater than originally perceived. The introduction of hard strata at the offshore windfarm array and power cables, are having greater than predicted impacts on the form and function and composition of designated Annex 1 Sandbanks within the SAC. While cabling is present in the site, there is a risk from further external cable protection being required due to the highly mobile nature of the site. Natural England considers that cable protection and scour within designated sites, which interact with site features, will result in a lasting change to the habitat feature.</p>	
3.1.15	<p><u>The Applicant Concluded no AEoI from Invasive Non-Native Species</u></p> <p>QT3.1.15 [To NE] Can NE confirm that this matter is agreed.</p>	<p>Natural England can confirm that this matter is agreed, and we have no further comment to make in relation to this matter.</p>	
3.1.16	<p><u>The Applicant [APP-040] concluded no AEoI from accidental pollution based on implementation of measures in the PEMP.</u></p> <p>QT3.1.16 [To NE] Can NE confirm that this matter is agreed.</p>	<p>Natural England can confirm that this matter is agreed, and we have no further comment to make in relation to this matter.</p>	
3.1.17	<p>The Applicant [APP-040] concluded no AEoI from EMF due to the lack of conclusive evidence of adverse effects from EMF upon benthic communities and project commitments to mitigate risk through cable burial or use of cable protection.</p> <p>T3.1.17 [To NE] Can NE confirm that this matter is agreed.</p>	<p>Natural England can confirm that this matter is agreed, and we have no further comment to make in relation to this matter.</p>	

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3.1.18	<p><u>Effectiveness of Mitigation</u></p> <p>QT3.1.18b [To NE] The Applicant confirmed that compliance with the MLS SAC Benthic Mitigation Plan [REP5-027] would be secured via the DML in Schedule 11 of the dDCO [REP5-007]. Is NE content with that approach. If not, explain your remaining concerns.</p>	<p>Natural England has raised concerns with the current drafting and approach as the Applicant has stated they do not intend to submit an updated MLS SAC Benthic Mitigation Plan prior to works commencing. Our concerns on this remain unresolved. Please see PADSS issue P2 and our Relevant and Written Repts issues A2, A3, A14 and A16. As previously advised the benthic mitigation plan should be appropriately reviewed based on bespoke details and updated surveys immediately prior to works to ensure the mitigation is sufficient</p>	
3.1.19	<p><u>OWFs with Benthic Compensation</u></p> <p>QT3.1.19a [To NE] Clarify your view on the implications for decision making if the final benthic compensation levels on other OWFs are not recorded.</p>	<p>Natural England highlights that the Secretary of State decisions for Hornsea Project Three, Norfolk Vanguard and Norfolk Boreas was that benthic compensation was required for the 'lasting' impacts over the lifespan of the projects from the placement of cable protection. And that there was a requirement to remove the cable protection at the decommissioning phase. The justification for this was because the restore conservation objectives would be hindered whilst the protection is in situ and take the site further away from its restore trajectory. Whilst the conservation advice package for MLS SAC currently has 'maintain' objectives, the recently published condition assessment acknowledges that the conservation advice package should be updated to 'restore'. Therefore, if the same rationale is applied to Five Estuaries windfarm the Applicant's position would not align with the recent Secretary of State Decisions. In addition, we draw the ExA attention to Defra's guidance for marine compensatory measures, (Best practice guidance for developing compensatory measures in relation to Marine Protected Areas, 2021) where it is stated that compensation and Measures of Equivalent Ecological Benefit (MEEB) should be treated the same. Therefore, we disagree with the Applicant on the relevance of DEP and SEP decision to their project and emphasise that MEEB/Compensation was required for 1800m² of cable protection within a marine protected area which is currently in unfavourable condition.</p>	
Southern North Sea SAC			
3.2.1	<p><u>Marine Mammal Population Modelling</u></p> <p>QT3.2.1 [To NE] Confirm if the updated iPCoD modelling in [REP5-071] addresses your</p>	<p>Natural England welcomes the addition of the median and 95% Confidence Intervals (CIs) values to the report.</p> <p>However, we note that there is no variation for median, mean and CI values for both species of seals between impacted and unimpacted populations</p>	

RIES ID	RIES Question	Natural England Comment	RAG Status
	concerns. If not, confirm what further evidence you consider is needed.	<p>(Tables 5.2.and 5.3). It is our understanding that the iPCoD model runs the simulations 1000 times for each scenario thus there is an expectation that the output values would show some variation. The outputs could potentially be the same if the population size is large (please note, a slight variation is present in the modelling scenarios for harbour porpoise whose population is significantly larger than those of seals), however the starting population for harbour seals is small and even considering a declining population does not demonstrate any level of variation between the impacted and unimpacted populations.</p> <p>In light of this, we have concerns around the variability of the outputs for the project alone and we believe that there is value in undertaking in-combination iPCoD modelling which may indicate a greater level of variation and potential population level impacts warranting further investigation.</p>	
3.2.2	<p><u>Inclusion of Seismic Surveys in the In-Combination Assessment</u></p> <p>QT3.2.2 [To NE] Confirm if this matter is resolved based on the information provided in [REP1-051] and the RIAA [REP1-016]?</p>	No further information has been provided by the Applicant thus our advice remains the same.	
Wash and North Norfolk Coast SAC			
3.2.4	<p><u>Population Modelling</u></p> <p>QT3.2.4 [To NE] Comment on any outstanding concerns for population modelling of the harbour seal feature of the Wash and North Norfolk Coast SAC in your response to QT3.2.1.</p>	Natural England maintains our original advice that the only relevant scenario for modelling is the declining population of harbour seals. No changes have been made by the Applicant and both scenarios remain in the report. Please see our comment above relating to the concerns around the lack of variability of the outputs in modelling scenarios for harbour seals.	
Offshore and Intertidal Ornithology			
FFC SPA - Gannet			
3.3.6	<p><u>Collision Risk to Gannet</u></p> <p>QT3.3.6 [to the NE] NE and the Applicant have stated their agreement over the apportioning of adult gannets to the FFC SPA. In light of this, NE is</p>	In light of the agreement over the apportioning of adult gannet to the Flamborough & Filey Coast (FFC SPA) and the subsequent evidence provided by the Applicant, on the basis of best available evidence Natural England can rule out an AEoI either alone or in-combination.	

RIES ID	RIES Question	Natural England Comment	RAG Status
	requested to provide an update on its position regarding AEol to the gannet feature of FFC SPA, alone and in combination.		
Farne Islands SPA – Guillemot and Razorbill			
3.3.9	QT3.3.8b [to NE] Is NE content that there would be no adverse effects on the site integrity of Farne Isles SPA, alone and in combination, by virtue of effects on the guillemot feature? If not explain why that is the case.	Natural England agree with the Applicant and regard the estimated scale of the impact on the Farne Island SPA breeding population of guillemot and its effect on their baseline mortality sufficiently low to conclude no adverse effect on site integrity alone. However, the predicted contribution of the project to in-combination effects, whilst small at approximately 2 adults from Farne Islands SPA (based on 70% displacement and 2% mortality), warrants further consideration, given that Natural England has advised that AEol cannot be ruled out from the Berwick Bank OWF project alone. Given the Berwick Bank OWF proposal has still not been determined, it may not be possible for the Secretary of State to rule out adverse effects in-combination for Farne Islands SPA. We consider therefore that there would be merit in the Applicant including the Farne Islands SPA guillemot in the scope of their compensatory proposals, as Rampion 2 OWF has in their in-principle compensation proposals (EN010117-002193-8.65 Guillemot & Razorbill Roadmap Rev C (tracked).pdf).	
Farne Islands SPA and Flamborough and Filey Coast SPA			
3.3.10	QT3.3.10 [to NE] What further evidence is NE seeking in order to demonstrate that auks are dispersing throughout the affected area? Specify deficiencies in Applicant's own evidence in this regard.	In this case, Natural England questioned the Applicant's characterisation of the area regarding it as highly speculative when based on the snapshot of evidence provided by the digital aerial surveys (DAS). Nevertheless, Natural England is seeking no update to the quantification of impacts, as the DAS data provided meet best practice standards and has been sufficient to assess impacts on Farne Islands SPA and FFC SPA guillemot and razorbill population during the winter.	
Outer Thames Estuary SPA			
3.3.11	<p><u>Vessel Disturbance Risk on Red Throated Diver</u></p> <p>QT3.3.11 [To NE and the RSPB] Other than on the basis of a precautionary approach, can NE and the RSPB explain why the Applicant's proposed mitigation for effects on red throated diver would not be sufficient to mitigate adverse effects?</p>	Natural England welcome the seasonal restriction on export cable installation within the OTE SPA to mitigate impacts on red-throated diver (RTD), between 1st November and 31st March but continue to advise that the restriction should be applied within the boundary of the SPA with a 2km buffer. This remains consistent with our advice given elsewhere and ensures the designated RTD population can be appropriately safeguarded up to the SPA boundary. One of the high-level conservation objectives of	

RIES ID	RIES Question	Natural England Comment	RAG Status
		<p>the OTE SPA is to maintain or restore ‘the distribution of the qualifying features within the site’, with underpinning supplementary advice targets to ‘Maintain the extent, distribution and availability of suitable habitat...’ and ‘Reduce the frequency, duration and/or intensity of disturbance...’. If RTD are displaced from an area inside the SPA over an extended period of time, then the site’s conservation objectives could be compromised and AEol could not be ruled out, particularly given the existing and consented pressures on the SPA.</p> <p>The scientific rationale for mitigation extending 2km beyond the SPA boundary is based on evidence indicating that vessel movements within 2km of the SPA could impair use of the site by RTD by causing displacement (Burt et al. 2017, Schwemmer et al. 2011, Fleissbach et al. 2019) and, for a proportion of the population may extend much further (Burger et al 2019, Mendel et al 2019). Imposing a 2km buffer is therefore pragmatic and not over-precautionary.</p> <p>The export cable corridor (ECC) route that abuts the northern edge of the SPA and lies within the 2km buffer surrounding the boundary. A key area of concern is the mid-northern sector of the SPA, where evidence from DAS indicates high densities of RTD are present in the SPA and, as the Applicant has stated, these high densities extend close to the SPA boundary where they abruptly fall off in the vicinity of the VTS route and high shipping activity (see marked areas of Applicant’s Doc 10.48 Fig. 2.2 [REP6-052] and Irwin (2019)). Of less concern, where evidence indicates RTD numbers are comparatively lower include the sections of the ECC route that border the northeastern and northwestern edges of the SPA boundary, most notably inshore close to the port of Harwich (see Doc 10.48 fig.2.2 [REP6-052]).</p> <p>It is possible that RTD numbers remain high close to the mid-northern edge of the SPA and near 2km of the busy VTS due to habituation (as the Applicant has implied). However, this remains speculation and counter to current evidence. Although it should be acknowledged that some individual RTD will be more tolerant of vessels than others, it is the proportion that are</p>	

RIES ID	RIES Question	Natural England Comment	RAG Status
		<p>not that is important to consider. We note the proximity of the Margate and Long Sands SAC sandbank in this sector and the favourable foraging conditions it provides may well account for the high numbers of RTD in the area despite the relative proximity of the busy VTS.</p> <p>The Applicant has suggested the cable laying vessels will be less disturbing anyway as the movement of the tide relative to the vessels will make them appear stationary to a bird on the water. However, this might only be true when the tidal current flowed in the same direction as the vessels' movement, the converse would apply when the tide turns. Furthermore, there is evidence that slow-moving as well as fast-moving vessels are more disturbing to divers than vessels moving at a moderate speed (Burger et al., 2019).</p> <p>We highlight that the cable laying operation does not involve just a single vessel but a suite of auxiliary vessels too. During construction up to 35 vessels may be present on site simultaneously during the construction phase of the ECC (c.f. Doc. 6.2.9 Shipping and Navigation [APP-078]), with up to 12 vessels involved in cable laying (Doc. 6.2.4 Offshore Ornithology [APP-073]). Those associated with the cable laying, travelling at 150-450m per day, will require at least 35 days to cover the 16km of ECC within the OTE SPA. Considering this worst-case scenario and the other areas of SPA impacted in addition to the likely timing, frequency and duration of cable laying along the corridor (i.e. for sequential periods lasting 5-15 days over 5 years) without further mitigation, Natural England are not persuaded that adverse effects on site integrity in-combination could only be ruled out where DAS data indicated RTD densities were ranked low (<1.0 birds/km2).</p> <p>As it stands, the current mitigation offered by the Applicant does not fully address the potential impacts on the high densities of divers' present near the northern boundary of the SPA. That stated Natural England has no intention of seeking unreasonable mitigation recognising, in this case, the variation in diver distribution shown by the DAS presents potential opportunities for a lower level of restriction along parts of the ECC but also that strict adherence to the 2km buffer would unnecessarily limit access to</p>	

RIES ID	RIES Question	Natural England Comment	RAG Status
		the port at Harwich. Subject to confirmation of likely vessel activity in the sector, it may be viable to modify the seasonal restriction (but still apply vessel best practice to reduce wildlife disturbance) along section(s) of the ECC that traverse the 2km SPA buffer where RTD densities are lower e.g. inshore near the port of Harwich (see Applicant's annotated map, Doc 10.48, Fig. 2.2). In this regard we would welcome further discussion with the Applicant to resolve the issue.	
Various: Deben Estuary SPA, Hamford Water SPA, Stour and Orwell Estuaries SPA, Colne Estuary SPA (Mid-Essex Coast Phase 2), Blackwater Estuary (Mid Essex Coast Phase 4), Dengie (Mid Essex Coast Phase 1)			
3.3.13a	QT3.3.13a [to NE] The Applicant has referred to evidence in the identified academic study to support its approach to modelling collision risk to dark bellied brent goose [REP1-051]. However, NE's position has not changed in the issues log [REP4-061]. Provide an updated position or explain why NE's view remains unchanged.	Natural England note the Applicant's comment in [REP1-051] and acknowledge the BTO review cited by them is acceptable evidence. Natural England has updated its Risk and Issues log accordingly.	
Orfordness-Shingle Street SAC and Alde Ore Estuary Ramsar Site			
3.4.1	<p><u>All pathways relevant to qualifying habitats, plants and invertebrates.</u></p> <p>QT3.4.1 [To NE] What potential impacts from the proposed works at the compensation site could lead to an AEoI and which conservation objective(s) could be affected?</p>	<p>Orfordness Shingle Street SAC is designated for three Annex I coastal habitat types: [1150] Coastal lagoons, [1210] Annual vegetation of drift lines and [1220] Perennial vegetation of stony banks. These features are geographically contracted in range and reliant on natural processes to maintain hydrological, morphological, and sedimentary functions. Impacts on extent, structure, composition, and spatial distribution could lead to fragmentation and reduce the viability of the habitats to support the diversity of species connected with them</p> <p><u>Installation and maintenance of a predator exclusion fence and PCS site has the potential to result in disturbance and changes within the shingle feature area.</u> Disturbance to the mix of sediment and ratio of coarse to fine material of the shingle damages the shingle matrix and alters the communities the habitats are able to support. This disturbance would include compaction from vehicle and pedestrian movements across the habitats, physical changes to morphology and elevation from fence installation, reduction in grazing changing community structure, changes in nutrient levels, hydrological changes as fencing is blocked by material</p>	

RIES ID	RIES Question	Natural England Comment	RAG Status
		<p>effectively forming a dam, etc. These habitats are the result of natural processes with natural sorting of sediments by wave action a key feature and have a characteristic range of natural features representing natural succession. There is no evidence that restoration and manual re-sorting of the sediment matrix can be successful, particularly for the landward edge of the shingle banks where coastal process are no longer active.</p> <p>Therefore, based on the evidence provided to date an adverse effect on the integrity of the designated features of the Orfordness and Shingle Street SAC cannot be ruled out.</p> <p>Invertebrates associated with coastal lagoons are a noted feature in the Ramsar citation along with the unique lichen communities of East Anglian beaches and shingle habitats. Evidence would be necessary to ensure that these communities along with other invertebrate and plant assemblages would not be impacted <u>by the installation and maintenance of predator fencing and the management of the PCS area.</u></p> <p>However, we have advised (in Section 3 in our Deadline 6 Cover Letter [REP6-066]) that the need remains for the Applicant to complete their baseline characterisation of their Proposed Compensation Site pre-construction, to close the evidence gap and inform mitigation measures and to undertake their surveys at the optimum times of year. If these pre-construction survey data indicate the need for further mitigation, then this should be agreed with the relevant SNCB and regulator prior to the commencement of any works by the Applicant. The requirement to confirm adequacy of the mitigation should also be secured within the DCO. If the Applicant agrees to this approach, commits to carrying out the necessary onshore ecology pre-construction surveys at the appropriate time/season, and present updated mitigation proposals for the SAC/SSSI/Ramsar Site if needed in the post-consent phase then we would be able to support a conclusion of no adverse effect on site integrity.</p>	

RIES ID	RIES Question	Natural England Comment	RAG Status
3.4.3	<p><u>Damage to qualifying habitats during management of vegetation.</u></p> <p>QT3.4.3 [to NE] What does NE mean by “best practice options “specifically? Elaborate on your recommended mitigation measures for maintaining vegetation community and diversity.</p>	<p>This relates to access where existing trackways are not present. Specifically for the fence line itself during installation, maintenance and monitoring activities and accessing the PCS area to manage the vegetation. This should include:</p> <ul style="list-style-type: none"> • best practice pollution prevention measures related to the use of vehicles on sensitive habitats (e.g. access/egress routes clearly defined; vehicle movements minimised; no storage of equipment; use of materials that are not toxic; measures to ensure no leakage of materials in the sensitive environment), • ensuring good biosecurity measures to prevent the introduction and/or increase of INNS across the SAC, • The use of light weight, low vibration, vehicles with tracks fitted to spread weight wherever practical. 	
3.4.4	<p><u>Increases in nutrients from bird faeces affecting vegetation composition and water quality.</u></p> <p>QT3.4.4 [To NE] Following the clarification from the Applicant, is NE satisfied with its approach in this regard?</p>	<p>Natural England welcomes the proposed vegetation management (removal of arisings from cutting) within the LBBG IMP; however, we advise that this commitment needs to be secured within the LIMP.</p>	
3.4.5	<p><u>Changes to Topography Leading to Overtopping and Sediment Transfer Processes</u></p> <p>ExA’s understanding of our position on coastal lagoons at the proposed LBBG compensation site at Orford Ness</p>	<p>In [AS-040] Section 4.1.12 states that one larger and one smaller lagoon are considered to be percolation lagoons but the map in [AS-054], (Drawing 4) identifies 5 saline lagoons within the PCS area that has been surveyed. The 3 other lagoons have not been stated as being fed by percolation and one lagoon is adjacent to the fence line and ditch on the western side. Paragraph 4.2.1 of report 4.5. states that damage to ditch banks could impact smaller coastal lagoons as they could have a function in retaining water If the fence installation impacts the bank that separates the lagoon and the ditch there is potential for an impact. There is also no evidence to confirm the presence, absence or location of lagoons in the area of the PCS that have not been surveyed.</p>	

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		<p>However, as we have advised above to Q3.4.1 (and in Section 3 in our Deadline 6 Cover Letter [REP6-066]), the need remains for the Applicant to complete their baseline characterisation of their Proposed Compensation Site pre-construction, to close the evidence gap and inform mitigation measures and to undertake their surveys at the optimum times of year. If these pre-construction survey data indicate the need for further mitigation, then this should be agreed with the relevant SNCB and regulator prior to the commencement of any works by the Applicant. The requirement to confirm adequacy of the mitigation should also be secured within the DCO. If the Applicant agrees to this approach, commits to carrying out the necessary onshore ecology pre-construction surveys at the appropriate time/season, and presents updated mitigation proposals for the SAC/SSSI/Ramsar Site if needed in the post-consent phase then we would be able to support a conclusion of no adverse effect on site integrity.</p>	
Stour and Orwell Estuaries SPA and Ramsar Site, Colne Estuary SPA, Blackwater Estuary SPA and Ramsar Site			
3.4.8	<p><u>Cumulative Impacts to Dunlin</u></p> <p>QT3.4.8 [to NE] in light of the information provided by the Applicant in [REP1-051], NE to confirm whether issues J19, J20 and J21 remain unresolved. If so, what additional evidence is required to address your concern?</p>	<p>J19. We advise that this issue remains unresolved. The Applicant needs to include methodology in an updated plan/document to show what actions will be taken in the event that the proposed buffer zones for Schedule 1 bird species and other breeding species fail.</p> <p>J20. We advise that this issue remains unresolved. The Applicant needs to provide a range of mitigation measures appropriate to the nature of the unscheduled maintenance works are committed to and secured to ensure that a precautionary approach is taken towards black-tailed godwit.</p> <p>J21. This element is now considered resolved. Following further clarification provided in document '10.4.1 Applicant's response to Natural England's Relevant Representation [REP1-051]', Natural England concurs with the applicant's conclusion that there will be no adverse effect on the integrity of the designated sites with specific regards to impacts upon Dunlin, either alone or in combination.</p>	
Derogations from the Regulations			
4.2 Alternative Solutions			

RIES ID	RIES Question	Natural England Comment	RAG Status
4.2.2	<p><u>[Export] Cable Routeing and Coordination</u></p> <p>Q4.2.2 [To NE] Confirm what further information you consider is needed to achieve a substantive consideration of alternatives</p>	<p>Natural England welcomes the Applicant's further justification to support their position on suitable alternatives. It is now for the Secretary of State as the competent authority to determine if this is sufficient.</p>	
4.4 Compensatory Measures			
4.4.1	<p><u>Compensatory Measures 'Without Prejudice' Wording</u></p> <p>Q4.4.1 [To NE] Provide any comments you wish to make on the draft "without prejudice" wording for securing compensation measures included in [REP5-090].</p>	<p>Natural England provided comment on the without prejudice wording within our Deadline 6 cover letter [REP6-066] and has no further comment to raise at this juncture.</p>	
Compensatory Measures for Annex I Sandbank (Benthic)			
4.4.2	<p>Q4.4.2 [To NE and the Applicant] Comment on any Implications the (Written Ministerial Statement) WMS and DESNZ Guidance Published on 31 January 2025 have for the Applicant's Proposed Benthic Strategic Compensation Option.</p>	<p>Please see our Deadline 6 covering letter [REP6-066].</p> <p>Following the written Ministerial Statement (29-January-2025) in support of progressing strategic benthic compensation in the form of Marine Protected Area (MPA) designation and/or extension of existing sites and the publication of guidance in regard to the Marine Recovery Fund (MRF); Natural England welcomes the Applicant's inclusion of strategic benthic compensation for their project. We will aim to agree the level of impact which requires compensation in order to apply to the Marine Recovery Fund (MRF). However, we note the application is likely to be in the post consent phase for this project.</p> <p>It is Natural England's understanding based on the published Marine Recover Fund Guidance (Jan 2025), that DEFRA and DESNZ have included provision for the Five Estuaries project within the strategic compensation MPA designation and extension process. With the commitment within the Written Ministerial Statement to progress strategic benthic compensation, which as previously stated the Statutory Nature Conservation Bodies (SNCB's) believe has the greatest likelihood of maintaining the coherence of the National Site Network; we do not believe</p>	

RIES ID	RIES Question	Natural England Comment	RAG Status
		there is merit in further progressing project specific compensation measures at this time.	
4.4.3	<p data-bbox="271 344 976 403"><u>Ratio of Compensation for AEoI to MLS SAC Annex I Sandbank.</u></p> <p data-bbox="271 448 976 738">Q4.4.3 [To NE] Confirm your advice on what ratio of compensation would be required in respect of potential AEoI to the Annex I sandbank of the MLS SAC if project-led measures were used. Explain why, if 5,400m² was to be secured as the maximum volume of cable protection over the lifetime of the Proposed Development, that would not represent a sufficient MDS to determine the level of compensation.</p>	As advised in our Relevant/Written representation [RR-081] compensation ratios will need to be set and agreed in DEFRA policy/guidance to ensure consistency across all marine OWF projects when considering how 'like for like' the proposed compensation is i.e. the likelihood of the compensation measure offsetting the impacts to Annex I features to maintain network coherence and the time lag between impacts occurring and delivery of the compensation. Therefore, we are unable to provide further advice on this matter at this time.	
Ornithology Compensation Measures			
4.4.4	Q4.4.4 [To NE and the Applicant] Comment on the implications of the (Written Ministerial Statement) WMS and DESNZ guidance published on 31 January 2025 for the Applicant's proposed use of the strategic compensation through the MRF.	The Written Ministerial Statement principally relates to benthic compensation measures and so is not relevant to offshore ornithology. However, the DESNZ interim guidance also provides advice to developers who are developing their own avian compensation packages on how to ensure that their consent documents include the option to switch to sourcing their avian compensation through the Marine Recovery Fund (MRF) when it is in place. Applicants wishing to use predator reduction (which includes exclusion fencing) as a compensation measure ahead of the MRF being operational will need to deliver the measure themselves, as the Applicant is proposing. Nevertheless, the Applicant may also wish to include a provision allowing for a contribution to be made into the MRF in substitution for delivering the predator control compensation measure themselves, should the MRF have relevant measures available at that time.	
Table 4.2 Ornithology – Key Issues Raised in the Examination to Date by the ExA and IPs in Relation to the Applicant's Proposed Compensatory Measures			
Guillemot and Razorbill			
4.2.3	<u>Compensation Level</u>	In reference to the Applicant's concern [REP5-074] of 'compounding precaution during the assessment, apportioning and compensation calculation process', Natural England advise that these represent separate elements of the Habitat Regulation Assessment (HRA) process, the first	

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	<p>QT4.2.3b [To NE] Comment on the Applicant's arguments relating to the compounding effect of adding precaution to calculations and the relevance of natal philopatry in relation to auks.</p>	<p>being the need for precaution within the assessment of impacts to Special Protection Areas (SPAs) (including via apportioning) and the second being the need to consider the efficacy or likelihood of success of the proposed compensation measures, and that both are required to have the requisite confidence that any proposed compensatory measures will result in the Project's impacts being offset within its lifetime.</p> <p>Regarding the need to address the uncertainty of success of measures within the compensation calculations Natural England refers the Applicant and Examining Authority to our response to [REP5-018] and [REP5-023], as well as our advice to the Outer Dowsing OWF Examination (EN010130-001392-Appendix G1 Natural England's Advice on Seabird Compensation Calculations see EN010130-001392-Appendix G1 Natural England's Advice on Seabird Compensation Calculations.pdf) [Five Estuaries Examination Ref No. REP5-095] for further detail on our position. Regarding the relevance of natal philopatry to the auk CQ calculation, NE consider it appropriate to consider it in this case. This is because it is unlikely all fledged young from the SW colonies that survive to adulthood will recruit to SPA populations and contribute to the national site network. Whilst the proposed compensation could benefit the regional auk meta-population, importantly, to be wholly successful it must also compensate for the impacts at FFC SPA by helping to maintain (i.e. add to) the coherence of the NSN.</p> <p>In general, Natural England also considers that the Hornsea 3 stage 2 method of CQ calculation should be used for all compensatory measures where it is necessary to know the requirement in terms of the number of breeding pairs. This is because the Hornsea 3 method is considered the most ecologically realistic (see advice NE advice on compensation calculations above). Where it is not possible to adequately populate the Hornsea 3 stage 2 method due to limited demographic information regarding the species under consideration, the Hornsea 4 method could be used, provided that the calculations are updated using philopatry data (from Horswill and Robinson, 2015) to account for the need of the colony to sustain itself.</p>	

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		<p>However, Natural England appreciate that in some circumstances, notably for species with limited evidence regarding population demographics and/or low natal dispersal rates such as razorbill, the HOW3 stage approach can yield excessively large CQ requirements, particularly when scaled at ratios higher than 1:1. Natural England also acknowledge that in this case the compensation requirements cited by the Applicant for guillemot and razorbill are excessively large compared to their impacts, although we do highlight that we have been unable to replicate the Applicant's figures.</p> <p>Nevertheless, Natural England has no intention of seeking unrealistic/unachievable targets and are actively seeking how to resolve this issue. We fully recognise that the Applicant's contributions to the in-combination totals for FFC SPA guillemot and razorbill are modest and consider that the compensatory measures proposed by the Applicant, whilst requiring further refinement, are likely to be proportionate to the level of risk.</p>	
4.2.6	<p><u>Monitoring</u></p> <p>QT4.2.6 [to NE] NE to comment on the latest Auk Roadmap and GRIMP and explain specifically what details it seeks from the Applicant in terms of monitoring methods.</p>	<p>Natural England agree the approach to monitoring should follow Seabird Monitoring Programme (SMP) guidelines (Walsh et al. 1995) but are concerned the planned observations from vantage points may provide insufficient views to adequately monitor some sites. Where this occurs the use of adaptive or innovative measures such as drones or cameras may be necessary to supplement traditional methods and collect all data necessary. The potential need to use such equipment has not been addressed by the Applicant and therefore requires further consideration.</p> <p>We note the use of remote cameras may be beneficial for monitoring birds but also boat-based and other anthropogenic activity near colonies (assuming no legal restrictions in doing so) but no description of how these activities would be monitored are given.</p> <p>The Applicant seeks to use change in human behaviour as a measure of success but does not describe how they would measure this in the IMP. Natural England recommend success be measured by seeking to see positive changes in bird numbers and/or productivity as well as changes in human behaviour. A comprehensive monitoring programme that includes</p>	

RIES ID	RIES Question	Natural England Comment	RAG Status
		recording human activity will be needed to identify these changes when they may occur.	
Kittiwake			
4.2.17	<p data-bbox="271 368 539 400"><u>Compensation Ratio</u></p> <p data-bbox="271 440 976 568">QT4.2.17b [to NE] NE recommends a 3:1 compensation ratio for LBBG. Is this also NE's recommended ratio for the auk species and kittiwake? Provide justification for the recommended ratio.</p>	<p data-bbox="999 368 1980 600">Uncertainty regarding the success of a compensatory measure should be taken into account when developing compensation proposals, including the use of ratios where appropriate, alongside multiple interventions, locations, different designs etc. Guidance is clear that 1:1 ratios are only appropriate where there is high confidence in the likelihood of success (Defra 2021), which given that seabird compensation is still in its infancy, is unlikely to be the case for seabird compensation measures.</p> <p data-bbox="999 639 1980 903">The ratio applied to the number of pairs to address the uncertainty of success are set qualitatively, on a case-by-case basis. Measures with high likelihood of success and flexibility for adaptive management e.g. island predator eradication may allow a lower ratio than for where the measure is less well tested and there are greater constraints on adaptive management e.g. Artificial Nesting Structures (ANS). Other factors such as the scale of the predicted impact and the sensitivity of the impacted species will also need to be factored in.</p> <p data-bbox="999 951 1980 1214">In this case, Natural England regard the ratio of 3:1 suitable for kittiwake. This is because uncertainty remains around the likely occupancy rate over the lifetime of the project, in particular whether available nest spaces will be occupied prior to operations and the amount of mortality debt that may accrue if not. Further, the likely level of connectivity with the FFC SPA colony is inevitably uncertain, and as stated above, for ANS there are more constraints on adaptive management too. We also note negotiations with Dogger Bank South OWF for space on the Gateshead ANS are incomplete.</p> <p data-bbox="999 1262 1980 1453">For auks Natural England regards a similar ratio appropriate in this case as likelihood of success is dependent on several factors with uncertain outcomes, notably adequate stakeholder participation, meaningful public adherence to the proposed advocacy and the likely recruitment of new birds into the NSN. The applicant is also proposing to apply their auk compensation 3 years prior to operations and in so doing risks accruing</p>	

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		<p>mortality debt for both razorbill and guillemot (which typically do not start breeding until their 5th and 6th year, respectively). Where it is unavoidable that the benefits of a compensatory measure are not predicted to arise until after the impacts commence, guidance indicates that this should be factored into the design of the measures e.g. multiple interventions and an increased level of provision (Defra 2021). However as noted in 4.2.3 above, there is a risk that for species such as razorbill, injudicious use of calculation values can result in excessively large requirements. Natural England has no intention of seeking unrealistic/unachievable compensation targets and is seeking to resolve this issue with the Applicant.</p>	