



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

Five Estuaries Offshore Wind Farm

Relevant Representations of Natural England

For:

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

Planning Inspectorate Reference: EN010115

21 June 2024

TABLE OF CONTENTS

PART I - OVERVIEW OF REPRESENTATIONS

| | |
|--|---|
| 1. Scope of Natural England's Advice | 2 |
| 2. Approach to Relevant Representations | 2 |
| 3. Engagement with the Applicant | 3 |
| 4. Structure of Natural England's Relevant Representations | 3 |

PART II - NATURAL ENGLAND'S ADVICE

| | |
|---|----|
| 5. The Natural Features Potentially Affected by the Application | 6 |
| Table 5.1 Designated Nature Conservation Sites | 6 |
| Table 5.2 National Sites..... | 8 |
| 6. Principal Areas of Disagreement Summary Statement (PADSS)..... | 11 |
| 7. Detailed Advice Appendices..... | 17 |

Natural England's Relevant Representations

PART I – OVERVIEW OF REPRESENTATIONS

1. Scope of Natural England's Advice

- 1.1. Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.
- 1.2. Natural England's remit extends to the territorial sea adjacent to England, up to the 12 nautical mile limit from the coastline. The Examining Authority should note that pursuant to an authorisation made by the JNCC under the Natural Environment and Rural Communities Act 2006, Natural England is authorised to exercise the JNCC's functions as a statutory consultee in respect of applications for offshore renewable energy installations in offshore waters (0-200nm) adjacent to England.
- 1.3. This application is included in that authorisation and, therefore, Natural England will be providing statutory advice in respect of that delegated authority. However, JNCC retains responsibility as the statutory advisors for European offshore marine sites that are located outside the territorial sea and UK internal waters (i.e. more than 12nm offshore) and continues to provide Natural England advice on the significance of any potential impacts on interest features of those sites.

2. Approach to Relevant Representations

- 2.1 These representations contain a summary of what Natural England considers to be the main nature conservation, landscape and related issues with regards the Development Consent Order (DCO) application, as well as the Deemed Marine Licences (DML) contained therein and indicate the principal submissions that it wishes to make at this point.
- 2.2 In the interests of issue resolution Natural England has combined Relevant Representation and Written Representations within this response. This is to provide the detail on all issues as early as possible to allow more time for discussion and resolution. If required and appropriate Natural England will develop these points through further Written Representations or in response to Examiner's questions.
- 2.3 Owing to the complexity of the project development scenarios, Natural England may wish to revise our advice or add additional points. This may also arise if further information about the project becomes available. Therefore, we reserve the right to bring such matters to the Examining Authority's attention.
- 2.4 Natural England wishes to bring to the Examining Authority's attention our concerns regarding the anticipated overlapping timetable for Five Estuaries Examination and the application submission and then Examination for the other Greater Gabbard/Galloper OWF extension project, namely North Falls Offshore Wind Farm. Due to similar issues our Five Estuaries and North Falls case teams are the same for both projects and we, therefore, kindly request that, if/where possible, Examination deadlines for the two projects are staggered as much as possible to allow sufficient time for our case team to provide the best possible advice and responses to the Examining Authority and the Applicant.

- 2.5 Please note that at Deadline 1 Natural England will submit a Risk and Issues log which will incorporate the comments we have made in this representation and track their resolution throughout the examination process. It is anticipated that this will continue to be submitted alongside our submissions during Examination and will reflect any progress in issue resolution following the Relevant Representations.
- 2.6 Natural England are keen to continuously improve our input into Examinations and would therefore welcome any feedback on our approach.

3. Engagement with the Applicant

- 3.1 Natural England has been working with the Applicant to provide pre-application advice and guidance on Five Estuaries OWF since 2019. To assist developers, Natural England has produced a series of documents to provide '*Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards*' for developments in English inshore and offshore waters. During the pre-application process we have advised that developers follow our Best Practice Advice and other guidance through the application and consenting process. The Evidence Plan Process (EPP) has included monthly project progress meetings, expert topic group (ETG) meetings, steering group meetings, and the Early Adopters Programme. Recently, we have been engaged in discussions relating to the merit of proposed benthic and ornithological compensation measures (offshore) and opportunities for minimising environmental impacts through collaboration with North Falls Offshore Wind Farm (NFOWF) project (onshore).
- 3.2 Natural England has also been working with the Marine Management Organisation, and the Centre for the Environment, Fisheries and Aquaculture Science (CEFAS) to provide coordinated advice in relation to each of our remits.
- 3.3 At appropriate points in the Examination, Natural England will undergo discussions with the Applicant to seek to resolve these concerns and agree outstanding matters. We will update on progress via our Risk & Issues Log.

4. Structure of Natural England's Relevant Representations

- 4.1 The representations in Part II provide Natural England's statutory advice. They are set out as follows:
- **Section 5** identifies the designated sites and natural features potentially affected by this application.
 - **Section 6** sets out the key outstanding environmental concerns which Natural England would like the Examining Authority to consider, through a colour-coded version of the **Principal Areas of Disagreement Summary Statement (PADSS)**.
 - **Section 7 – Detailed Advice Appendices** - Natural England's detailed technical advice, where more detailed explanation of issues has been considered relevant, can be found in the technical Appendices A to K. These will include additional considerations beyond those raised in the PADSS that warrant consideration in the Examination.
- 4.2 Natural England advises that the matters set out in Part II of our relevant representations will require consideration by the Examining Authority as part of the examination process.

The Examining Authority may wish to ensure that the matters set out in these relevant representations are addressed as part of the Examining Authority's first set of questions to ensure the provision of information early in the examination process.

- 4.3 Natural England intends to provide further detailed advice to the Offshore in Principal Monitoring Plan [APP-265] at Deadline 1 or next most suitable deadline, allowing time for further information to be provided by the Applicant to inform potential monitoring requirements. Natural England is mindful of the recent decision for the Sheringham and Dudgeon Extension Project (SADEP). While some of the key decisions are reflected in our advice to the Development Consent Order (DCO), once our full review of the decision is complete, further advice reflecting the DCO may be provided at the earliest opportunity.
- 4.5 Throughout our advice, Natural England will be using colour coding to denote the level of potential risk or significance of impact associated with our comments. Full details of this are provided in Table 4.1 below.
- 4.6 Within Section 6 of these Relevant Representations, we have assigned a broad risk rating to each row of the PADSS to indicate the level of our concern. For each of the Appendices in Section 7 we provide a summary of the main concerns associated with the thematic area in question, followed by a table of detailed advice setting out all the salient issues we have identified. In both tables we have used the colour coding to give an indication of the level of risk associated with each of the points we raise.

Table 4.1 Natural England’s risk rating with colour coding

| | |
|---|--|
| <p>Purple</p> <p>Note for Examiners and/or competent authority. May relate to DCO/DML.</p> | |
| <p>Red</p> <p>Natural England considers that unless these issues are resolved it will have to advise that (in relation to any one of them, and as appropriate) it is not possible to ascertain beyond reasonable scientific doubt that the project will not affect the integrity of an SAC/SPA and/or significantly hinder the conservation objectives of an MCZ and/or damage or destroy the interest features of a SSSI and/or comply fully with the Environmental Impact Assessment requirements.</p> <p>Addressing these concerns <u>may</u> require the following:</p> <ul style="list-style-type: none"> • new baseline or survey data; and/or • significant revisions to baseline characterisation and/or impact modelling and/or • significant design changes; and/or • significant mitigation <p>Natural England feels that issues given Red status are so complex, or require the provision of so much outstanding information, that they are unlikely to be resolved during the Examination without a fundamental change in approach.</p> | |
| <p>Amber</p> <p>Natural England does not agree with the applicant’s position or approach and consider that this could make a material difference to the outcome of the decision-making process for this project.</p> <p>Natural England considers that these matters <u>may</u> be resolved through:</p> <ul style="list-style-type: none"> • provision of additional evidence or justification to support conclusions; and/or • revisions to impact assessment methodology and/or assessment conclusions; and/or • minor to moderate revisions to impact modelling; and/or • well-designed mitigation measures that are adequately secured through the draft DCO/dML and/or • amendments to draft plans <p>If these issues are not addressed or resolved by the end of the Examination, then they may become a Red risk as set out above.</p> | |
| <p>Yellow</p> <p>Natural England doesn’t agree with the Applicant’s position or approach. We would ideally like this to be addressed but are satisfied that for <u>this particular project</u> it is unlikely to make a material difference to our advice or the outcome of the decision-making process. However, we reserve the right to revise our opinion should further evidence be presented.</p> <p>It should be noted by interested parties that just because these issues/comments are not raised as significant concerns in this instance, it should not be understood or inferred that Natural England would be of the same view in other cases or circumstances.</p> | |
| <p>Green</p> <p>Natural England is in broad agreement with the Applicant’s approach and has no significant outstanding concerns.</p> <p>As above, we reserve the right to revise our opinion should new evidence be presented.</p> | |

PART II – NATURAL ENGLAND’S ADVICE

5. The Natural Features Potentially Affected by this Application

- 5.1 The designated sites and interest features included within Tables 5.1 and 5.2 are those which may be significantly affected by the proposed project, based on the information provided to date. It should be noted that this list may change if new evidence emerges during the Examination. Links have been provided to the citation, conservation objectives and supplementary advice for designated nature conservation sites. We have provided links, as these are large and live documents which are updated on a regular basis to incorporate the most up to date evidence. To avoid potentially out of date or inaccurate documents being referred to during the Examination we recommend that the links are utilised.
- 5.2 In relation to SPAs, SACs and Ramsar sites, on the basis of the information submitted, Natural England is not satisfied that it can be excluded beyond reasonable scientific doubt that the project would have an adverse effect alone or in-combination on the integrity of the sites in Table 5.1. In relation to the SSSIs listed, Natural England is concerned that the protected features of the above SSSIs may be damaged or destroyed.
- 5.3 In relation to the designated landscapes listed in Table 5.2., Natural England is concerned that the proposal will impact upon the statutory purposes of the National Parks and the special qualities of the National Landscapes/AONBs.

Table 5.1 Designated Nature Conservation Sites

| Site Name | Conservation advice | Features for which Outstanding Concerns Remain |
|------------------------------------|---|---|
| Alde-Ore Estuary SPA & Ramsar site | Alde-Ore Estuary SPA - UK9009112 Alde-Ore Estuary Ramsar - UK11002 | Lesser black backed gull (<i>Larus fuscus</i>) breeding Wetland invertebrate assemblage Wetland plant assemblage |
| Flamborough & Filey Coast SPA | Flamborough and Filey Coast SPA - UK9006101 | Guillemot (<i>Uria aalge</i>), breeding Kittiwake (<i>Rissa tridactyla</i>), breeding Razorbill (<i>Alca torda</i>), breeding Seabird assemblage (above species) |
| Farne Islands SPA | Farne Islands SPA - UK9006021 | Guillemot, breeding Seabird assemblage (including razorbill) |
| Margate and Long Sands SAC | Margate and Long Sands SAC - UK0030371 | Sandbanks which are slightly covered by sea water all of the time |

| Site Name | Conservation advice | Features for which Outstanding Concerns Remain |
|-------------------------------|---|--|
| Orfordness-Shingle Street SAC | Orfordness - Shingle Street SAC - UK0014780 | Coastal lagoons Perennial vegetation of stony banks |
| Outer Thames Estuary SPA | Outer Thames Estuary SPA - UK9020309 | Red-throated diver (<i>Gavia stellata</i>), non-breeding |
| Southern North Sea SAC | Southern North Sea SAC - UK0030395 | Harbour Porpoise (<i>Phocoena phocoena</i>) |
| Stour and Orwell SPA | Stour and Orwell Estuaries SPA – UK9009121 | Black-tailed Godwit (<i>Limosa limosa</i>), Dunlin (Scolopacidae) |
| Alde-Ore Estuary SSSI | Alde-Ore Estuary SSSI - 1003208 | As per SPA and Orfordness – Shingle Street SAC above, plus Invertebrate assemblage Vascular plant assemblage |
| Flamborough Head SSSI | Flamborough Head SSSI - 1002289 | As per SPA above |
| Farne Islands SSSI | Farne Islands SSSI - 1000660 | As per SPA above |

Table 5.2 Designated Landscapes

| Site Name | Landscape Authority management plan | Features for which Outstanding Concerns Remain |
|--|---|---|
| Suffolk Coast & Heaths AONB), including Suffolk Heritage Coast | SCHAONB Management Plan | The seascape component of the AONB setting and the special character of the SHC including the coastal edge most sensitive to the potential seascape and visual effects of the Five Estuaries Project, particularly Orford Ness. |

5.4 Matrix to Determine Environmental Impact Assessment Effect Significance -We acknowledge that a matrix approach to determining the significance of effects on ecological features, is commonly used. However, this method often relies on value- rather than evidence-based judgements. The subjective evaluation of magnitude of impact and sensitivity/importance of receptors through expert judgement has led to many impact magnitudes and receptor importance/sensitivities being downgraded across topics in the EIA. We also note that any effect that is concluded to be of moderate or major significance in the ES, is deemed to be 'significant' in EIA terms, whereas effects concluded to be of negligible or minor significance, are deemed 'not significant' in EIA terms. This cut-off could exclude any effect concluded to be less than moderate, in turn, this could lead to errors in assessing cumulative effects adequately.

5.5 6.1.3.1 Cumulative Effects Assessment Methodology [APP-064]

Natural England highlights that due to the adoption of the PINs TIER Approach there are ongoing impacts across multiple thematic areas, which should be considered cumulatively and not be considered as part of the baseline especially in regard to benthic habitats. Please also note that the use of Zones of Theoretic Influence (Zol) should not be an arbitrary figure applied to all receptors, as consideration will need to be given to the mobility of the receptor and also if impacts are occurring within a large designated site then all plans/projects impacting on features of the site, regardless of distance separation between the projects, will need to be taken into consideration.

5.6 Natural England notes that PINS Advice Note10) has been used to identify projects to be considered in-combination for all thematic areas within the Report to Inform the Appropriate Assessment (RIAA). However, Natural England advises that the PINs advice note doesn't align with SNCB Best Practice Guidance [Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase III Expectations for data analysis and presentation at examination for offshore wind applications.](#) for scoping projects into in-combination. Therefore, due to ongoing impacts for constructed projects not being taken into account by the Applicant assessments we advise that the RIAA and relevant ES chapters are updated using the TIERs within the Best Practice Guidance.

- 5.7 **Protected Species** - An application for a European Protected Species and/or wildlife licence may be required if the application will have impacts on the following species:
- Harbour Porpoise
 - Great Crested Newt (GCN)
 - Bats
 - Breeding birds
 - Non-breeding birds
 - Badger
 - Dormice
 - Otter
 - Reptiles
 - Water Vole
- 5.8 Five Estuaries has been approved by Natural England to use District Level Licence (DLL) prior to construction to ensure compliance with the legal status of GCN and mitigate for potential impacts on this species. Full procurement of the DLL should be undertaken within no more than 12 months prior to the commencement of onshore construction works. The DLL has been applied for on the basis of temporary impacts. Therefore, when the final Landscape and Ecological Management Plan is produced, post-DCO determination, this must include details to re-instate all terrestrial habitats within the DLL boundary like for like or of better quality for GCN within 12 months of the completion of works. -
- 5.9 Should the DCO be granted, Natural England advises the Applicant progresses with a licence application at the earliest opportunity. For reference, Natural England has adopted [standing advice](#) for protected species which includes links to guidance on survey and mitigation.
- 5.10 **Other matters relating to Natural England's remit** - the following features are those which may be significantly affected by the proposed Five Estuaries project based on the information provided to date:
- Biodiversity net gain (BNG). We note the Applicant's commitment to delivering a minimum of 10% BNG and advise that this should be secured by requirement in the DCO. Natural England advise that, for consistency, everything within the Red Line Boundary (Order Limits) should be included in the BNG baseline calculations, including any retained habitats. Any deviation from BNG best practice and principles should continue to be justified and clearly reported. This may be a matter for the Examining Authority to decide upon. We would also advise that Five Estuaries are consistent with the approach taken by the North Falls project. With regards to replaced hedgerow management. we advise that they should be maintained for a minimum of 30 years in line with BNG regulations. Natural England in turn advise that where the long-term management of hedgerows for this period cannot be secured, they should be treated as "habitat loss" within the BNG metric. Once BNG is mandatory, then a legal agreement would be required to secure the management for thirty years where habitats will be lost. We also advise that for cropland and agricultural grassland, the correct risk multiplier should be applied to BNG calculations,

- Soils and best and most versatile agricultural land - where significant development of agricultural land is demonstrated to be necessary, applicants should seek to use areas of poorer quality land in preference to that of higher quality and protect soils during development.
- Connecting people with nature (National Trails, open access land and England Coast Path) - there are possible impacts on users of the King Charles III England Coast Path (ECP) during construction onshore and we, therefore, advise the Applicant to provide further information on the associated margins, any restrictions required, and any impacts to the line of the Path.

6. Principal Areas of Disagreement Summary Statement (PADSS)

This PADSS should be read in conjunction with the Appendices of these Relevant Representations, which provide further detail on the areas of disagreement as well as other areas of disagreement which require resolution. For ease of reference, we have added a RAG rating for each principal area. Please note that the PADSS is ordered by topic and not by priority.

| The principal issue in question | The brief concern held by Natural England which will be reported on in full in WR / LIR | What needs to change, or be included, or amended so as to overcome the disagreement | Likelihood of the concern being addressed during Examination | RAG rating |
|--|---|--|--|------------|
| Development Consent Order (DCO) | | | | |
| The during construction monitoring conditions within the deemed Marine Licences (dML) Schedules 10 and 11 do not secure that piling must cease in the event the monitoring highlights the noise impact is significantly in excess of the predicted impacts assessed. | This is a key mitigation for marine mammals and has been included in previous DCOs for various offshore wind farms, such as the recent East Anglia One North project or the Sheringham and Dudgeon Extension Project. | We recommend that the condition wording should be amended to include the requirement to stop should the noise impacts of the works be significantly in excess of those assessed. We also recommend that this wording is included in Schedules 10 and 11. | Potential resolution. | |
| Margate and Long Sands Special Area of Conservation (MLS SAC) Benthic Mitigation Plan is not secured within the transmission deemed Marine Licence (dML). | This plan includes key mitigation for the SAC which needs to be updated to include relevant up-to-date information on the final designs and up to date mitigation techniques. | Therefore, we consider that an updated plan should be secured through condition. | Potential resolution | |
| Schedule 14 includes only impacts to Alde-Ore Estuary Special Protection Area (SPA) Lesser Black Backed Gull (LBBG), but not affected features of MLS | We cannot rule out Adverse Effect on Integrity (AEoI) on MLS SAC and FFC SPA and advise that compensation may be required for these sites, if the Secretary of State (SoS) determines that it is required. | We, therefore, advise that provision for compensation for these features should be made in the draft DCO on a without prejudice basis. | Potential resolution | |

| The principal issue in question | The brief concern held by Natural England which will be reported on in full in WR / LIR | What needs to change, or be included, or amended so as to overcome the disagreement | Likelihood of the concern being addressed during Examination | RAG rating |
|---|--|--|--|------------|
| SAC or Flamborough and Filey Coast (FFC) SPA. | | | | |
| Marine Geology, Oceanography and Physical Processes | | | | |
| Disruption of sediment transport processes at MLS SAC due to the placement of cable protection | Insufficient information to assess the magnitude and significance of potential impacts to sediment transport processes within MLS SAC | Further information is needed to demonstrate that the presence of cable protection within MLS SAC will not alter sediment transport processes and, morphology of Annex I sandbank features during the lifespan of the project. | Potential resolution | |
| Construction and Operation and Maintenance Impacts to SPA/SAC supporting habitats, and priority habitats | Incomplete consideration of potential impacts to seabed morphology and magnitude and significance of their effect. | An updated WCS/maximum design scenario (MDS) should be provided for construction-and operation and maintenance related impacts on seabed morphology and seabed mobility. | Potential Resolution | |
| Offshore Ornithology | | | | |
| Potential incorrect estimates for Alde-Ore Estuary (AOE) SPA lesser black backed gull (LBBG) mortalities. | At present, the estimates for mortalities due to collision at both the north and south VE arrays appear incorrect. | The total impact value should be clarified and, if necessary, the Population Viability Analysis (PVA) re-run (with burn-in) to indicate the project alone and in-combination effects on AOE SPA LBBG. | Uncertain If the assessment is updated, as advised, this issue may be resolved. It will still be the case that an AEol cannot be ruled out. | |
| Apportioning of adults (other than AOE SPA LBBG) during the breeding season based on generic data rather than site-specific data. | We advise that the evidence used to inform adult apportioning is not sufficient. The data on the number of adult- or adult-type birds present is generic. Seasonal variations should also be considered. | We continue to advise that for species that can be aged as adult or sub-adult from Digital Aerial Survey (DAS), site-specific data represents the best available evidence for apportioning. Where this is not possible, a precautionary approach should be adopted. An updated assessment based on | Potential resolution If the Applicant updates the assessment in line with our recommendations, then this issue could be resolved. | |

| The principal issue in question | The brief concern held by Natural England which will be reported on in full in WR / LIR | What needs to change, or be included, or amended so as to overcome the disagreement | Likelihood of the concern being addressed during Examination | RAG rating |
|--|--|---|---|------------|
| | | Natural England's advised approach should be submitted into the Examination in due course. | | |
| In-combination impacts on the FFC SPA populations of guillemot and razorbill are at a level where adverse effects cannot be ruled out and VE will be adding to this. | The Applicant has applied their preferred displacement (50%) and mortality (1%) rates to the guillemot and razorbill populations at risk at each offshore wind farm (OWF) project included in the in-combination assessment for the FFC SPA. As well as departing from Natural England advice on this matter, in so doing the Applicant disregards the in-combination values that have been used by DESNZ for recent consents. | The Applicant should simply add the VE project alone impact (at 70% displacement and 2% mortality) to the total in-combination impact agreed in the Sheringham and Dudgeon Extensions Project OWF (SADEP) Examination. | Potential resolution This should be submitted into the Examination to resolve this issue. | |
| Ornithology Compensation | | | | |
| AOE SPA LBBG - concerns regarding the suitable level of compensation and the effectiveness of measures proposed at the two sites. | As well as the above issue regarding the impact calculation for AOE SPA LBBG, the compensation requirement is based on the mean number of mortalities rather than the 95% upper confidence interval (UCI) value. The proposed compensatory measures have potential merit, however further information is needed to provide sufficient | The compensation quantum needs to be calculated in line with Natural England's advice. Further information on the proposed compensation sites needs to be provided, particularly with respect to survey visits in summer 2024 as regards avoiding impacts on other designated sites (Orford Ness) and the likely drivers of population decline (Outer Trial Bank). | Uncertain If the assessment is updated and the compensation based on the 95% UCI, the compensation requirements issue may be resolved. However, unless findings are presented promptly following the 2024 breeding season, the uncertainties around the proposed compensation are unlikely to be resolved during Examination. | |

| The principal issue in question | The brief concern held by Natural England which will be reported on in full in WR / LIR | What needs to change, or be included, or amended so as to overcome the disagreement | Likelihood of the concern being addressed during Examination | RAG rating |
|---|--|---|--|------------|
| | confidence that the measures can be secured and will be effective. | | | |
| Uncertainty regarding adequacy of implementing disturbance management at southwest colonies for FFC SPA guillemot and razorbill | Whilst we consider this measure to be technically feasible, candidate locations have been identified but not secured. Impact levels are also still to be agreed. | The Applicant needs to monitor the candidate sites to establish the current level of disturbance and identify measures needed to effectively mitigate it. | Uncertain Monitoring will take time so unless findings are presented promptly following the 2024 breeding season, this issue is unlikely to be resolved during Examination. | |
| FFC SPA kittiwake Artificial Nesting Structure (ANS). | As with LBBG above, the compensation requirements are to be calculated using the central impact value. There is also some uncertainty regarding the nature of the sharing agreement with DBS OWF for their ANS at Gateshead. | The compensation requirements need to be calculated using the 95% UCI. Further information is required on how the benefits of the Gateshead ANS will be divided amongst projects. | Potential to Resolve If further details can be provided, then it is likely that this issue can be resolved. | |
| Benthic Ecology | | | | |
| AEol on Annex I sandbank feature of Margate and Long Sands Special Area of Conservation (MLS SAC) | . We disagree with the Applicant on the scale and significance of the impact. | Further reduction of impacts through adoption of robust mitigation measures. | Unlikely | |
| Mitigation measures fail to consider potential presence of Section 41 NERC Act habitats. | The Applicant has failed to consider Section 41 NERC Act habitats in their assessment. | The Applicant needs to consider and mitigate for potential impacts to Section 41 NERC Act habitats, | Potential Resolution | |
| Methods and evidence used to determine MDS for cable protection within MLS SAC and WCS potentially not realistic. | Natural England is unable to advise on the scale and significance of the impacts and therefore compensatory requirements. | Natural England advises that further information is required to provide the necessary confidence in the MDS/Worst Case Scenario (WCS) for cable protection within the SAC. | Potential Resolution | |

| The principal issue in question | The brief concern held by Natural England which will be reported on in full in WR / LIR | What needs to change, or be included, or amended so as to overcome the disagreement | Likelihood of the concern being addressed during Examination | RAG rating |
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| Benthic Compensation | | | | |
| "Without Prejudice" Benthic Compensation | Further progress is required on each measure to have confidence that they are achievable and would deliver effective compensation for project impacts. | Natural England advises that further work on each measure will be required during examination before we can advise on the suitability. | Uncertain Further review is likely to be undertaken during examination and with no guarantee this issue will be resolved within the examination timeframe. | |
| Marine Mammal Ecology | | | | |
| Southern North Sea Special Area of Conservation (SNS SAC) – harbour porpoise underwater noise impacts - Outline Site Integrity Plan (SIP) | Current approach to SIP implementation is unlikely to prevent impact thresholds from being exceeded in the SNS SAC. The Applicant has not committed to using Noise Abatement Systems (NAS) at this stage, increasing the risk that an adverse effect on site integrity (AEol) cannot be avoided. | The Applicant should commit to specific mitigation measures at this stage, particularly Noise Abatement Systems (NAS), in the Outline/Draft Marine Mammal Mitigation Plan and submitted with the SIP at the DCO, which can be removed at a later date if the revised SIP demonstrates they are not required.. | Potential Resolution If changes can be made to the Outline MMMP, it is likely this issue can be resolved. | |
| EIA/HRA Conclusions | Lack of robust evidence supporting the conclusions made. | Natural England recommends population modelling be conducted, for example, Interim Population Consequences of Disturbance (iPCoD), to inform the conclusions of the EIA and HRA. | Potential Resolution If the Applicant carries out population modelling and updates their EIA/HRA assessment it may be possible to resolve this issue. | |
| Seascape, Landscape and Visual | | | | |
| Suffolk and Essex Coast & Heaths National Landscape/AONB and Suffolk Heritage Coast (SHC) – seascape impacts | The special qualities of the National Landscape/AONB and the SHC will be affected by the proposed development. This is of particular concern at Orford Ness. In particular, we are concerned that | The SLVIA needs to be updated to properly assess the potential impacts on the AONB and SHC, particularly with respect to the most northerly WTG and the potential for the array to cause 'curtaining' and | Uncertain There is potential for the applicant to update the assessments during the examination. However, it is | |

| The principal issue in question | The brief concern held by Natural England which will be reported on in full in WR / LIR | What needs to change, or be included, or amended so as to overcome the disagreement | Likelihood of the concern being addressed during Examination | RAG rating |
|--|--|--|--|------------|
| | the most northerly 8 WTGs will 'close the gap' and create a distinct grouping between the existing Galloper and Greater Gabbard OWF arrays, and the to be built EA2 array. In addition, the size difference between the VE and other WTGs in the area will result in a visually jarring 'cluttering' effect. | 'cluttering' effects. Once the assessment is updated, further consideration of NE advice on embedded mitigation is required, drawing on our three proposed design principles. | likely that the issues raised will not be resolved through assessment alone, and will require design changes in line with our proposed principles to be addressed. | |
| Onshore Ecology | | | | |
| Potential impacts to designated sites and features at the proposed LBBG compensation site on Orford Ness | Insufficient baseline data on the saline lagoon, shingle vegetation shingle sediment structure and morphology to advise on potential impacts. | An adequate baseline survey should be carried out pre-determination in the proposed compensation location in order to inform the impact assessment and avoidance/mitigation measures required. | Uncertain If the Applicant can commit to carrying out pre-determination surveys and providing further information, as required, then this issue could be resolved during Examination. | |
| Operational and maintenance facility impacts have not been considered. | No consideration has been given to the potential impacts from the operational port on the environment. | Natural England advises that impacts from the operation port should be assessed as part of the DCO at the consenting phase to ensure that a Holistic approach can be taken to the HRA. | Uncertain The Applicant needs to include the O&M port in its EIA/HRA to resolve this issue during Examination. | |

7. Detailed Advice Appendices

Natural England's detailed advice, where more detailed explanation of issues has been considered relevant, can be found in the following Appendices:

- Appendix A - Development Consent Order
- Appendix B - Marine Geology, Oceanography and Physical Processes
- Appendix C – Offshore Ornithology
- Appendix D – Offshore Ornithology Compensation
- Appendix E – Benthic and Intertidal Ecology
- Appendix F – Benthic Compensation
- Appendix G – Fish and Shellfish Ecology
- Appendix H – Marine Mammal Ecology
- Appendix I – Seascape, Landscape and Visual
- Appendix J – Onshore Ecology
- Appendix K - Landscape and Visual Impact Assessment



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

**Appendix A to the Relevant Representations of Natural England
Draft Development Consent Order (DCO)**

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix A – Draft DCO

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

- [APP-024] 3.1 Draft Development Consent Order
- [APP-025] 3.2 Explanatory Memorandum
- [APP-248] 9.17 Outline Offshore Operations and Maintenance Plan

1. Natural England's Advice and Recommendations

A summary of Natural England's key concerns in relation to the Draft Development Consent Order (DCO) is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

Glossary of Acronyms and Abbreviations

| | |
|-------|---|
| AEol | Adverse Effect on Integrity |
| CoCP | Code of Construction Practice |
| DCO | Development Consent Order |
| dML | Deemed Marine Licence |
| ES | Environmental Statement |
| LBBG | Lesser Black Backed Gull |
| LEMP | Landscape and Ecological Management Plan |
| LIMP | Lesser Black Backed Gull Implementation and Monitoring Plan |
| LPA | Local Planning Authority |
| MMO | Marine Management Organisation |
| SAC | Special Area of Conservation |
| SADEP | Sheringham and Dudgeon Extension Project |
| SIP | Site Integrity Plan |
| SNCB | Statutory Nature Conservation Body |
| SoS | Secretary of State |
| SPA | Special Protection Area |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

Table 1 Summary of Key Issues – Draft DCO.

| NE Ref | Summary of Key Concerns | Natural England’s Recommendations to Resolve Issues. | Risk |
|--------|---|--|------|
| A1 | The during construction monitoring conditions within the deemed Marine Licences (dML) Schedules 10 and 11 do not secure that piling must cease in the event the monitoring highlights the noise impact is significantly in excess of the predicted impacts assessed. This is a key mitigation for marine mammals and has been included in previous DCOs for various offshore wind farms, such as the recent East Anglia One North project or the Sheringham and Dudgeon Extension Project. | Natural England has provided example wording in Table 2 below and would recommend it is included in Schedules 10 and 11. | |
| A2 | The Margate and Long Sands Special Area of Conservation (SAC) Benthic Mitigation Plan is not secured through condition within the transmission dML, Schedule 11. This Plan details key mitigation for the Margate and Long Sands SAC and should be updated to reflect current information prior to the commencement of construction. It should, therefore, be secured through appropriate condition. | Natural England requests this mitigation plan should be secured through condition in Schedule 11. | |
| A3 | Schedule 14 compensation <u>only</u> covers impacts to Lesser Black Backed Gull. In Appendix E and Appendix C we have detailed concerns that we cannot rule out an adverse effect on integrity (AEoI) on the Margate and Long Sands SAC and the Flamborough and Filey Coast Special Protection Area (SPA). Provision for the compensation should be included in the draft DCO on a without prejudice basis to provide the Secretary of State (SoS) with detailed and agreed provisions should he determine that compensation is required. | Natural England requests that draft compensation provisions are provided for all features where there is disagreement that an AEoI can be ruled out. | |

Table 2 Natural England's Detailed Advice and Recommendations – Draft DCO.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|------------------------------|---|------------------------------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Document(s) Used: [APP-024] 3.1 Draft Development Consent Order | | | | | |
| Development Consent Order | A4 | Schedule 2 Requirement 7 (2) | The requirement for landscaping does not cover all the aspects we would expect to be captured within the requirement. We would expect this to cover survey methods, monitoring requirements and the requirement to maintain, including the potential for replanting due to plant failures. Further we would expect to be consulted on these plans prior to their approval by the relevant local planning authority. | The requirement should be amended. | |
| | A5 | Schedule 2 Requirement 8 | Requirement 8 (1) does not secure that the Code of Construction Practice (CoCP) must be submitted and approved prior to the commencement of works. Further we would request the text be amended to include a requirement to consult the relevant SNCB on the CoCP. Natural England notes that the interpretations section includes an outline CoCP. Therefore, we would recommend that the requirement should note the final CoCP must accord with the outline CoCP. Further the requirement refers to sub paragraph (3) of the requirement which does not exist. | The requirement should be amended. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | A6 | Schedule 2 Requirement 12 | <p>Natural England requests that the relevant SNCB be included as a required consultee on this important ecological document. We also note that based on the wording here, and the interpretation of onshore commencement, clearing works could be conducted prior to the submission and approval of the final Landscape and Ecological Management Plan (LEMP). This provision should be amended to state that no pre commencement clearance works should be undertaken until a written LEMP, as relevant to the stage of the works, has been submitted to, and approved by, the Local Planning Authority (LPA) following consultation with the relevant SNCB.</p> | The requirement should be amended. | |
| | A7 | Schedule 2 Requirement 20 | <p>This requirement covers vehicle access and construction plans for the compensatory works for LBBG. The requirement is to be signed off by the LPA. Natural England has no objection to these requirements. However, we are not aware of similar provisions being used elsewhere and note the compensatory works are mostly covered under Schedule 14 with the SoS acting as the decision maker. Consideration should be given as to whether the requirements belong within the compensation schedule. This would</p> | Consider if the requirement should move. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | ensure that the approval of compensatory works are considered holistically by a single decision maker and reduce the potential for conflicting decisions on the different aspects of the compensation. | | |
| | A8 | Schedule 2 Requirement 23 | This requirement secures the need for a Biodiversity Net Gain (BNG) strategy. We note that the relevant SNCB is not listed as a consultee, given the nature of this plan we would request consultation on this document. Further we note that no time period is given for the duration of which the strategy should be monitored, maintained or when adaptive management measures may be implemented. Natural England advises the requirement should ensure the strategy is enforced for a period of thirty years, or for the lifetime of the development. | Amend requirement to require consultation with the relevant SNCB and to monitor, maintain and potentially employ adaptive management measures over thirty years. | |
| | A9 | Schedule 10 Part 2 Condition 12 (1) (j) | Due to the need to appropriately consider in-combination impacts of other developments it is also important that the Site Integrity Plan (SIP) should not be submitted too early as the plan needs to consider in combination issues and submission too early may mean significant in combination factors are not included. | Natural England recommends that the condition should require the SIP no sooner than 9 months and no later than 6 months prior to commencement of piling. | |
| | A10 | Schedule 10 Part 2 Condition | Natural England notes that the monitoring conditions only cover benthic monitoring. However, we consider that Ornithological | Amend to include requirements for ornithological and marine mammal monitoring. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---------------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | n 16 and 18 | and Marine Mammal monitoring should also be requirements due to the potential for impact. Please see our comments in Appendices C and H. | | |
| | A11 | Schedule 10 Part 2 Condition 17 | <p>This condition <u>does not</u> include the requirement to pause piling in the event that noise is significantly in excess of that predicted and for potential further monitoring. These requirements are considered a key mitigation for noise impacts to sensitive species and should be included as a standard. Example provision from the recent Sheringham and Dudgeon Extension Project (SADEP) DCO provided below for reference:</p> <p><i>(2) In the event that driven or part-driven pile foundations are proposed, such monitoring must include measurements of noise generated by the installation of the first four piled foundations of each piled foundation type to be installed unless the MMO otherwise agrees in writing.</i></p> <p><i>(3) The undertaker must carry out the surveys approved under sub-paragraph (1), including any further noise monitoring required in writing by the MMO, and provide the agreed reports in the agreed format in accordance with the agreed</i></p> | Amend the condition to include the requirement to stop should the noise impacts of the works be significantly in excess of those assessed. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-------------------------------------|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p><i>timetable, unless otherwise agreed in writing with the MMO in consultation with the relevant statutory nature conservation bodies.</i></p> <p><i>(4) The results of the initial noise measurements monitored in accordance with sub-paragraph (2) must be provided to the MMO within six weeks of the installation of the first four piled foundations. The assessment of this report by the MMO will determine whether any further noise monitoring is required. If, in the reasonable opinion of the MMO in consultation with the relevant statutory nature conservation body, the assessment shows significantly different impacts to those assessed in the environmental statement or failures in mitigation, all piling activity must cease until an update to the marine mammal mitigation protocol and further monitoring requirements have been agreed.</i></p> | | |
| | A12 | Schedule 10 part 2 conditions 16-18 | The recent SoS decision for SADEP approved the following recommendation from Natural England and the Marine Management Organisation for particular impacts requiring remediation or further mitigation works (see Condition 20 in Schedules 10 and 11). We have copied | Natural England requests that a similar condition is included within all dMLs. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-----|---|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>and included the condition below for your reference.</p> <p><i>(7) In the event that the reports provided to the MMO under sub-paragraph (4) identify impacts which are unanticipated and or beyond those predicted within the Environmental Statement and the Habitats Regulations Assessment an adaptive management plan to reduce effects to within what was predicted within the Environmental Statement and the Habitats Regulations Assessment, unless otherwise agreed by the MMO in writing, must be submitted alongside the monitoring reports submitted under sub-paragraph</i></p> <p><i>(4). This plan must be agreed by the MMO in consultation with the relevant statutory nature conservation bodies to reduce effects to an agreed suitable level for this project. Any such agreed and approved adaptive management or mitigation should be implemented and monitored in full to a timetable first agreed in writing with the MMO. In the event that this adaptive management or mitigation requires a separate consent, the undertaker shall apply for such consent. Where a separate consent is required to undertake the</i></p> | | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <i>agreed adaptive management or mitigation, the undertaker shall only be required to undertake the adaptive management or mitigation once the consent is granted.</i> | | |
| | A13 | | All comments raised on Schedule 10 apply to Schedule 11 where similar provisions exist. For brevity we will not repeat these comments. | N/A | |
| | A14 | Schedule 11 Part 2 Condition 13 (g) (iv) | Natural England notes that the Margate and Long Sands Benthic Mitigation Plan is referenced here in relation to cable protection. However, there is no condition securing submission of an updated plan for approval within the dML or DCO. Natural England has commented under Appendix E with regard to the need for benthic mitigation and compensation. It is important that this plan be resubmitted with detailed mitigation based on the final designs and up to date mitigation techniques. Therefore, we consider that an updated plan should be secured through condition. | Consider inclusion of a condition securing the submission of an updated Margate and Long Sands Benthic Mitigation Plan. | |
| | A15 | Schedule 11 Part 2 Condition 26 | Natural England notes this condition; however, our standard position is that, due to the complex and changeable nature of marine benthic environment, it is not appropriate to issue licences to deploy cable protection within benthic sites over a | Amend the condition to exclude the area of the site within the Margate and Long Sands SAC. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--------------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | long period. Therefore, this condition should be amended to ensure that cable protection within the Margate and Long Sands Special Area of Conservation (SAC) is only deployed during the construction phase. | | |
| | A16 | Schedule 14 General comment | Natural England notes that compensation provisions have been provided for Lesser Black-Backed Gull (LBBG) only. We have advised in Appendices C and E that compensation is required for other ornithological and benthic features, specifically kittiwake, guillemot and razorbill at Flamborough & Filey Coast SPA, and sandbanks at Margate & Long Sands SAC. Compensation provisions should be provided for these features on a without prejudice basis to ensure that, should the SoS find that compensation is required, appropriate and, wherever possible, agreed provisions are available. | The compensation schedule should be updated to cover all sites where there is currently disagreement regarding an adverse effect on site integrity. | |
| | A17 | Schedule 14 | All references to Natural England within this schedule should be amended to the SNCB to ensure consistency with the rest of the DCO. | Amend any references to Natural England. | |
| | A18 | Schedule 14 Para 2 | Natural England notes that the Offshore Ornithology Engagement Group appears similar to the steering groups used on other compensation provisions. However, the condition does not include the need to | Update to include provision of terms of reference, timetable for the preparation and delivery of the LBBG, and a dispute resolution mechanism. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | provide and consult upon; terms of reference for the group, details of proposed meetings, timetable for the preparation and delivery of the LBBG implementation and monitoring plan (LIMP), or a dispute resolution mechanism. We consider these vital requirements to ensure a smooth compensation delivery process and would note that they have been included in many compensation schedules for LBBG. | | |
| | A19 | Schedule 14 Para 3 (1) | The wording here is confusing as it implies that compensation may be delivered through some other, unknown, or undetailed mechanism and thus the compensation within this provision may not be required. Natural England notes that there is ongoing work on strategic compensation and would support the inclusion of appropriate provisions to allow use of agreed strategic compensation. However, the wording here is insufficient, if that is its purpose. We have included details in Annex A1 below of some draft wording we proposed for a strategic benthic provision which could be extrapolated into an appropriate provision for LBBG. | Recommend amending this provision and consideration of how to appropriately implement a provision allowing strategic compensation options. This could also be applied to other compensation schedules provided on a without prejudice basis. | |
| | A20 | Schedule 14 para | The list of requirements to include in the LIMP is lacking in detail when compared to | Consider amendment to the provision. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--------------------|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | 3 (2) (d) and (g) | similar provisions used to secure compensation. Within (d) we would expect to see survey methodologies, timetables for the monitoring to be conducted and reports delivered and success criteria. Within (g) we would expect to include a detailed mechanism to determine the need for any alternative compensation or adaptive management measures, along with potential further monitoring and maintenance of such measures. We refer to the East Anglia Two DCO which has such provisions within their LBBG compensation schedule. | | |
| | A21 | Schedule 14 Para 5 | This requirement ensures that LBBG compensation must be provided three full breeding seasons prior to operation. However, Natural England-notes that on other developments a period of four full breeding seasons was deemed appropriate and considers this should therefore be amended. | Amend the condition to reflect four full breeding seasons in line with compensation requirements for other projects. | |
| | A22 | Schedule 14 Para 8 | Natural England notes the provision ensures that the compensation must be maintained until the end of the operational life of the project. We would advise that the compensation may be required for longer than the lifetime of the project and that the compensation should be maintained until the SoS approves its | Amend the provision to require the approval of the SoS and consultation with the SNCB. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|------------|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | decommissioning in consultation with the relevant SNCB. | | |
| Document(s) Used: [APP-248] 9.17 Outline Offshore Operations and Maintenance Plan | | | | | |
| | A23 | Appendix A | Natural England notes there are several activities within the table that will require a new marine licence, but are recorded as <u>amber</u> , whereas the traffic light coding provided within the plan indicates that these should be considered <u>red</u> . For example, foundation replacement. | Suggest this should be amended to reflect the appropriate colour marking. | |
| | A24 | Appendix A | It would have been useful for the table to have included a reference to the relevant section in the Environmental Statement (ES) to allow appropriate cross referencing. | Suggest cross referencing each item to the location within the ES where it is detailed, for ease of reference during operation. | |

ANNEX A1 – Suggested Benthic Compensation Wording Provided to Regulators

Schedule XX

[Site Name] Special Area of Conservation or Marine Conservation Zone: Delivery of measures to compensate for [impacts]

In this Schedule—

“BIMP” means the Benthic Implementation and Monitoring Plan for the delivery of measures to compensate for offshore windfarm construction and/or operation within the [Site Name] SAC/MCZ as a result of the authorised development;

“BSG” means the benthic steering group who will shape and inform the scope and delivery of the BIMP;

“[Site ref] SAC” means the [Site name] Special Area of Conservation;

“[Site ref] MCZ” means the [Site name] Marine Conservation Zone;

“[Site ref] SAC/MCZ compensation plan” means the document certified as [In Principle Compensation Plan Document Ref] by the Secretary of State for the purposes of this Order under article XX (Certification of plans etc); and

“Strategic Compensation Fund” means the [name of strategic fund] fund established by Defra [or another Government body] for the purpose of implementing strategic compensation measures.

“Strategic Compensation Owner” means the government body which established the Strategic Compensation Fund with the responsibility to manage contributions to the fund and/or delivery of the strategic compensation measure.

No later than 2 years from the date of this order the Undertaker must advise the Secretary of State of the intention to provide compensation either;

Through a monetary contribution to the Strategic Compensation Fund; or

Through a project/developer led compensation scheme for the undertaker to provide compensation as outlined in the [site ref] SAC/MCZ Compensation Plan.

Paragraphs 7-15 of this Schedule shall not apply to the extent that a contribution to the Strategic Compensation Fund has been elected in Paragraph 2 of this Schedule and paragraphs 4, 5 and 6 of this schedule shall not apply to the extent that a project/developer led compensation plan has been elected in paragraph 2 of this Schedule.

The authorised development may not be commenced until a plan for the work of the BSG has been submitted to and approved by the Secretary of State. Such plan must include:

- (a) terms of reference of the BSG;
- (b) the membership of the BSG;
- (c) details of the schedule of meetings, timetable for preparation of the BIMP and reporting and review periods, or details of the schedule of meetings to agree contribution to the Strategic Compensation Fund; and
- (d) the dispute resolution mechanism.

The undertaker must agree a ratio/value of contribution with the strategic compensation owner, in consultation with the Statutory Nature Conservation Body [and the BSG]. Unless agree otherwise with the Strategic compensation Owner the ratio/value must include consideration of the provision of;

The required contribution to compensate for the worst-case scenario of impact on the [site ref] SAC/MCZ;

The required contribution to monitoring of the compensation undertaken under the Strategic Compensation Fund;

The required contribution to provide for any adaptive management measures for the compensation undertaken under the Strategic Compensation Fund;

The timing of any required contribution to ensure compensation is either provided ahead of construction or to a sufficiently high ratio to allow for construction prior to implementation of the compensation;

The required contribution for the ongoing maintenance and/or monitoring of the compensation undertaken under the Strategic Compensation Fund; and

The required contribution for any decommissioning of the compensation undertaken under the Strategic Compensation Fund.

Prior to the commencement of any works the undertaker must provide details on the contribution to the Strategic Compensation Fund agreed under paragraph 4 to the Secretary of State for approval.

The undertaker must provide the contribution to the Strategic Compensation Fund as per the agreement approved by the Secretary of State under paragraph 5.

The BSG must be consulted on the proposed BIMP prior to the submission to the Secretary of State and must be consulted further as required during the approval process.

The undertaker will meet with and report to the BSG at least annually throughout the establishment and implementation phases of the BIMP and document the conclusions of the meetings.

The BIMP must be submitted to and approved by the Secretary of State, in consultation with the MMO and the relevant statutory nature conservation bodies.

The BIMP must accord with the relevant principles contained in the [site ref] SAC/MCZ compensation plan and must include in particular provide:

- (a) details of any further survey work required to inform the compensation requirements as per the requirements of the secretary of state agreed through consultation with the BSG;
- (b) details of the location, nature and works to be undertaken to compensate for the predicted effects of the project;
- (c) a method statement for the compensatory works, to include the vessel type, tools used and mitigation for how impacts on the [site ref] SAC and any other relevant habitats or features
- (d) a programme of works for the compensatory works;
- (e) proposals for monitoring in accordance with the principles set out in the [site ref] SAC compensation plan as well as proposals for reporting of monitoring; and
- (f) success criteria, adaptive management measures, and details of how all impacts to protected habitats and features within designated sites will be avoided.

The BIMP must be carried out as approved, unless otherwise agreed in writing by the Secretary of State in consultation with the MMO and the relevant statutory nature conservation body. In particular, no installation works in the [site ref] SAC/MCZ may be commenced until the Secretary of State has confirmed that compensation requirements have been discharged, excluding monitoring and/or adaptive management measures.

Unless otherwise agreed in writing with the Secretary of State, prior to the commencement of any cable installation works in the [site ref] SAC/MCZ, the undertaker must—

- (a) provide a reasonable estimate of the cost of delivery of the compensation measures; and
- (b) put in place either—
 - (i) a guarantee in respect of the reasonable estimate of costs associated with the delivery of the compensation measures; or
 - (ii) an alternative form of security for that purpose, that has been approved by the Secretary of State.

Results from the monitoring scheme must be submitted at least annually to the Secretary of State, the MMO and the relevant statutory nature conservation body. This must include details of any finding that the measures have been ineffective in securing an improvement in the condition of the [site ref] SAC and, in such case, proposals to address this. Any proposals to address effectiveness must thereafter be implemented by the undertaker as approved in writing by the Secretary of State in consultation with the MMO and the relevant statutory nature conservation body.

A report which demonstrates completion of the activities required by the BIMP must be submitted to the Secretary of State within 12 months of completion of such activities and following approval of the report by the Secretary of State, in consultation with the MMO and the statutory nature conservation body, the undertaker will be discharged from any further obligations under this Part.

The approved BIMP includes any amendments that may subsequently be agreed in writing by the Secretary of State, in consultation with the MMO and the relevant statutory nature conservation body. Any amendments to or variations of the BIMP must be in accordance with the principles set out in the [site ref] SAC compensation plan and may only be approved where it has been demonstrated to the satisfaction of the Secretary of State that it is unlikely to give rise to any new or materially different environmental effects from those considered in the [site ref] SAC compensation plan.



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

Appendix B to the Relevant Representations of Natural England
Marine Geology, Oceanography and Physical Processes

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix B – Marine Geology, Oceanography and Physical Processes

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

- [APP-063] 6.1.3 Environmental Impact Assessment Methodology
- [APP-064] 6.1.3.1 Cumulative Effects Assessment Methodology
- [APP-069] 6.2.1 Offshore Project Description
- [APP-070] 6.2.1.1 Detailed Offshore Project Description Envelope
- [APP-071] 6.2.2 Marine Geology, Oceanography, and Physical Processes
- [APP-081] 6.2.12 Infrastructure and Other Marine Users
- [APP-083] 6.3.1 Onshore Project Description
- [APP-099] 6.5.2.1 Physical Processes Baseline Technical Report
- [APP-100] 6.5.2.2 Physical Processes Model Design and Validation
- [APP-101] 6.5.2.3 Physical Processes Technical Assessment
- [APP-238] 9.8 Dredge Disposal Site Characterisation Report
- [APP-239] 9.9 Outline Cable Burial Risk Assessment
- [APP-242] 9.12 Outline Cable Specification and Installation Plan
- [APP-243] 9.13 Margate and Long Sands SAC Benthic Mitigation Plan
- [APP-248] 9.17 Outline Offshore Operations and Maintenance Plan
- [APP-261] 9.28 Outline Landfall Methodology
- [APP-262] 9.29 Offshore Connection Scenario
- [APP-263] 9.30 Coordination Document
- [APP-264] 9.31 Schedule of Mitigation – Routemap
- [APP-265] 9.32 Offshore In-Principle Monitoring Plan

1. Natural England's Advice and Recommendations

A summary of Natural England's key concerns in relation to Marine Geology, Oceanography and Physical Processes is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

In order to reduce the repetition in our advice, the advice and recommendations within this appendix, notably regarding sandbanks and sandwaves, are applicable to and should be read in conjunction with the advice presented Appendix E Benthic and Intertidal Ecology.

Glossary of Acronyms and Abbreviations

| | |
|---------|---|
| CEMP | Construction Environmental Management Plan |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| HDD | Horizontal Directional Drilling |
| MDS | Maximum Design Scenario |
| MLS SAC | Margate and Long Sands Special Area of Conservation |
| O&M | Operations and Maintenance |
| OECC | Offshore Export Cable Corridor |
| OSP | Offshore Platform |
| OWF | Offshore Wind Farm |
| PLGR | Pre-lay Grapnel Run |
| SSC | Suspended Sediment Concentration |
| SSSI | Site of Special Scientific Interest |
| UXO | Unexploded Ordnance |
| VE | Five Estuaries |
| WCS | Worst Case Scenario |
| WTG | Wind Turbine Generator |
| ZOI | Zone of Influence |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

Table 1 Summary of Key Issues – Marine Geology, Oceanography and Physical Processes.

| NE Ref | Summary of Key Concerns | Natural England's Recommendations to Resolve Issues. | Risk |
|--------|--|--|------|
| B1 | Natural England is concerned that there is a potential impact to sediment transport processes at Margate and Long Sands Special Area of Conservation (MLS SAC) due to the presence of cable protection measures. Natural England advises that there is insufficient evidence to support the impact assessment of cable protection on Annex I Sandbanks of MLS SAC. | The Applicant needs to demonstrate that the presence of cable protection measures within and outside of MLS SAC will not affect the sediment transport processes at the placement location to the detriment of the Annex I feature of the SAC. | |
| B2 | Natural England advises that cumulative impacts to MLS SAC require further consideration. | Natural England advises that the Applicant should consider potential seabed morphology, volumetric, extent, and distribution changes to MLS SAC arising from VE construction activities in combination with other plans, projects, or activities. The WCS should also be assessed. | |
| B3 | Natural England is concerned that the Maximum Design Scenario (MDS)/Worst-Case Scenario (WCS) for impacts to SPA and SAC supporting habitat, protected habitats and significant bedforms within the arrays has not sufficiently considered. We advise that all aspects of construction such as drill arisings etc., impacts to sandbanks/sand waves, seabed morphology and prey availability are considered in more detail | Natural England advises that the Applicant should fully consider all potential impacts to SPA and SAC supporting habitats, protected habitat and significant bedforms within the arrays, to inform the MDS/WCS. | |
| B4 | Natural England highlights uncertainty regarding the MDS/WCS for volume of sediment disturbed due to cable trenching. | Natural England advises the Applicant to adopt the assumption that up to 100% of material is fluidised and displaced from the trench and to update the impact assessments accordingly for other relevant receptor groups. | |

Table 2 Natural England's Detailed Advice and Recommendations – Marine Geology, Oceanography and Physical Processes.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|-------|---|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Project Parameters - Document(s) Used: [APP-069] 6.2.1 Offshore Project Description, [APP-071] 6.2.2 Marine Geology, Oceanography and Physical Processes, [APP-261] 9.28 Outline Landfall Methodology | | | | | |
| Project Description | B5 | 6.2.1 | We have no comments to raise at this stage. | N/A | |
| Natural England's Position on Worst Case Scenario or Scenarios | B6 | 6.2.1 | <p>From the coastal perspective, Natural England does not agree that Scenario 1 (undertaking the works for both Five Estuaries and North Falls) represents the worst-case scenario (WCS). Instead, we would advise that Scenario 3 (Five Estuaries completes works then North Falls completes works at a later time) appears to be a more impactful scenario as habitats and features may not have recovered from the first works. Thus, this scenario could result in a cumulative impact over a longer duration due to successive works rather than concurrent works, even though the damage done would essentially be equivalent.</p> <p>However, for the intertidal and foreshore area this may not be the case. It could be argued that repeated interventions that do not give the site or features time to recover</p> | Natural England advises that the EIA is updated with Scenario 3 being presented at the WCS in terms of impact to both the coastal zone/shoreline and intertidal/foreshore areas. We advise that if the WCS assessment is not correct, there could be an impact pathway (i.e. temporary disturbance) to any features from the Holland Haven SSSI using the intertidal or grassland area resources. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-------------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | may lead to greater impacts over a longer timeframe. | | |
| | B7 | 9.28 | Natural England advises that there is insufficient detail at present regarding potential sheet piling installation in the intertidal zone to fully understand the likely impacts. However, if mitigation measures are applied if stated then we are content that there are unlikely to be significant impacts on Holland Haven SSSI notified features, and that sheet piling is unlikely to create an impact pathway to up- and downdrift of designated sites. | We advise that the Applicant should apply and secure appropriate mitigation measures in named plan/s as stated, to avoid impacts to the SSSI features and intertidal/beach when sheet piling in the beach/intertidal zone. | |
| | B8 | 6.2.2, Section 2.10.4 | Natural England welcomes the consideration of a coordinated energy transmission approach. However, we acknowledge that the feasibility of the coordinated offshore connection with North Falls and Sea Link is still in the exploration phase, and therefore potential environmental impacts of this option, have not been considered or assessed in the EIA. Therefore, until more information is presented, we are unable to advise on this design option. | Natural England advises if/when further information becomes available during examination on the offshore transmission connection scenario, full consideration should be given to the potential environmental impacts of the scheme. Until then, Natural England provides no further comment during examination | |
| | B9 | 6.2.2, Table 2.8, Pages 58-59 | Natural England notes that the Applicant has assumed that for installation of inter-array and export cables ' <i>up to 50% of material is actually ejected from the trench. The rest is fluidised, but retained as</i> | Natural England advises that, owing to the uncertainty regarding WCS, the Applicant adopts the assumption that up to 100% of material is fluidised and displaced from the trench due to cable installation. This | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p><i>sediment cover within the trench.</i> But, evidence has not been included to support this assumption. We advise a consistent industry approach to assessing the worst case scenario (WCS) i.e., up to 100% of sediment is fluidised and displaced from the trench. This would effectively lead to a doubling of the volume of sediment disturbed which may have implications to the assessment of pathways for impacts to other receptor groups.</p> | <p>should be updated in the assessment of impacts pathways for all receptor groups.</p> | |
| | B10 | 6.2.2, Table 2.8, Pages 60-61 | <p>Natural England notes that the Assessment of the WCS for potential morphological impacts to sandbanks and designated areas of seabed (e.g. MLS SAC) during construction is based on sandwave clearance via dredging only. It does not consider boulder clearance, UXO clearance or pre-lay grapnel run activities which have the potential to disrupt marine processes and cause impacts on marine habitats and species and alter the morphology of sandbanks and designated areas of seabed.</p> | <p>Natural England advises that the Applicant needs to include all potential construction-related impacts in the WCS assessment of morphological impacts to sandbanks and designated areas of seabed.</p> | |
| | B11 | 6.2.1, Section 1.11, Figure 1.12 & | <p>Natural England agrees with the Applicant that there is an expected cable crossing of the planned NeuConnect and Sea Link interconnector cables, and a potential requirement to cross the proposed North Falls cables in proximity to MLS SAC.</p> | <p>Natural England advises that the Applicant should consider potential (indirect) impacts to MLS SAC due to adjacent cable <u>crossing(s)</u> (e.g. with North Falls, Sea Link and NeuConnect). If required, appropriate mitigation measures should be applied,</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | Table 1.27 | However, there are insufficient details currently to assess cumulative impacts of potential sediment disruption of the multiple cable crossings of the 2 VE cables with other plans and projects on the SAC. | such as minimising the number and extent of cable crossings adjacent to MLS SAC. | |
| | B12 | 6.2.2, Table 2.8, Sections 2.10.78-82 and 9.2.8, Section 3.2.8 | Although, trenching operations across the beach/intertidal and associated impacts are likely to be relatively short-lived (days to a few weeks), Natural England notes that the MDS does not include anticipated length and location of trenching at landfall. Similarly, intertidal Horizontal Directional Drilling (HDD) works may include sheet piling and/or an anchored or spud barge which can dry out on the beach. It is unclear what the MDS would be for this scenario. Therefore, there is currently insufficient information to enable us to agree with the assessment conclusions for impacts to landfall morphology. | Natural England advises that the WCS for intertidal/beach trenching and HDD operations should be updated, once more information is available, and appropriate mitigation applied. We also advise the Applicant to consider any lessons learned from the installation of the Gunfleet Sands OWF export cable installation at Holland Haven. | |
| | B13 | 6.2.2, Table 2.8 | Natural England queries whether the number of array and export cable repairs/replacements over the project lifetime are realistic, as well as how the total impact amounts in Table 1.31 were determined. | Natural England advises that further consideration is given operations and maintenance (O&M) marine licence applications for similar activities at Galloper OWF and revise the VE MDS for array and/or export cable repairs/replacements, if necessary. We would welcome this to be provided in an Outline and Operation and Maintenance | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|----------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | Plan which is updated and agreed prior to construction. | |
| | B14 | 9.8, Section s 5.13 & 5.14 | Natural England advises that the MDS for Array Area drill arising dimensions and distribution of grain sizes/sediment type have not been provided. | Natural England advises that the Applicant should evaluate the MDS for drill arising/spoil mounds within the Array Areas in order to inform the assessment of bed level change extent and thickness and any disruption of sediment transportation | |
| Baseline Characterisation - Document(s) Used: [APP-069] 6.2.1 Offshore Project Description, [APP-083] 6.3.1 Onshore Project Description, [APP-261] 9.28 Outline Landfall Methodology, [APP-264] 9.31 Schedule of Mitigation Routemap, [APP-071] 6.2.2 Marine Geology, Oceanography and Physical Processes, [APP-081] 6.2.12 Infrastructure and Other Marine Users, [APP-099] 6.5.2.1 ES Annex Physical Processes Baseline Technical Report, [APP-100] 6.5.2.2 ES Annex Physical Processes Model Design and Validation, [APP-101] 6.5.2.3 ES Annex Physical Processes Technical Assessment. | | | | | |
| Data Gaps | B15 | 6.2.2 | Natural England advises that seabed mobility and erosion potential have not been assessed in the EIA. | Natural England advises that the Applicant should assess seabed sediment mobility or erosion potential and the natural variability of sediment depth within the Zone of Influence (ZoI), to inform the cable burial and scour assessments. | |
| Analysis, Modelling and Reporting | B16 | 6.2.2 | Natural England notes that the Applicant has concluded that the SEASTATES hindcast model data (taken from an offshore location) is sufficiently validated. However, Natural England highlights that Figure 12 shows that SEASTATES | As a note of caution to the competent authority, Natural England highlights that we do not agree with the assessment of level of model performance (and lack of performance statistics) carried out by the Applicant and their consultants, because it | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | hindcast slightly overpredicts some of the significant wave height peaks, but the modelled peak wave period appears to underpredict measured peak wave period for approx. 25% of the time series shown. | does not align with best practice. However, unless there are significant changes to the project design and/or mitigation measures cannot be delivered, we do not believe that updating the modelling and/or assessment would make a material difference to the predicted project impacts as this time. | |
| Environmental Impact Assessment - Document Used: [APP-040] 5.4 Report to Inform Appropriate Assessment, [APP-069] 6.2.1 Offshore Project Description, [APP-071] 6.2.2 Chapter 2: Marine Geology, Oceanography and Physical Processes, [APP-101] 6.5.2.3 Annex 2.3: Physical Processes Technical Assessment, [APP-083] 6.3.1 Onshore Project Description, [APP-261] 9.28 Outline Landfall Methodology, [APP-264] 9.31 Schedule of Mitigation Routemap, [APP-081] 6.2.12 Infrastructure and Other Marine Users, [APP-099] 6.5.2.1 ES Annex Physical Processes Baseline Technical Report, [APP-097] 6.5.2.2 ES Annex Physical Processes Model Design and Validation. | | | | | |
| Identified impacts | B17 | 6.2.2, Section 2.11.19 - 2.11.26 | Natural England notes that impacts to seabed morphology (i.e. sandwaves) related to changes to the tidal regime due to the presence of Wind Turbine Generator (WTG) and Offshore Platform (OSP) foundation structures, have not been considered or assessed. | Natural England advises that further consideration of potential impacts to seabed morphology (and SAC supporting habitat) arising from changes to the tidal regime due to the presence of WTG and OSP foundation structures is required by the Applicant and the assessment updated accordingly | |
| | B18 | 6.2.2, Section 2.11.26 | Natural England notes that the significance of effects arising from changes to the tidal regime in the Array Areas has not been assessed. We highlight that changes to the tidal regime may indirectly impact | Natural England advises that the Applicant should consider the likely extent and significance of impacts upon SAC supporting habitats/protected habitat | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | seabed morphology (including bedforms) through interaction of the OWF infrastructure foundations with the tidal regime. Therefore, changes to the physical environment within the Array Areas have the potential to impact SAC supporting habitat. | morphology within the Array Areas, due to changes to the tidal regime. | |
| Methodology | B19 | 6.2.2, Section 2.10.12 and 6.5.23, Section 2.6 | <p>Natural England is unable to agree with the impact assessment for potential changes to Suspended Sediment Concentrations (SSCs), bed levels, and sediment type arising from construction related activities within the Array Areas, because the information provided lacks sufficient detail.</p> <p>Whilst it is stated that the assessment of changes to SSC and associated sediment deposition is informed by location and project-specific numerical modelling, the results presented are largely qualitative. For example, within the zone of highest SSCs increase and thickness of sediment deposition (0-50m of the construction activity), it is stated that '<i>sands and gravels may deposit in local thickness of tens of centimetres to several metres...</i>', which is an order of magnitude difference.</p> | Given the presence of sensitive species/habitats (e.g. spawning herring), supporting habitat, designated areas of seabed, and significant bedforms within the Array Areas, Natural England advises that the Applicant should gather more detailed evidence to inform their impact assessment. This should include MDS changes to SSC and bed levels (and sediment type) arising from the different construction-related activities listed, taking into consideration the different locations and sediment types. The spatial pattern and magnitude of SSC change and associated levels of deposition (and sediment type) should also be clearly presented to inform the impact assessment(s). | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | B20 | 6.2.2, Section 2.13 | <p><u>Cumulative Impacts to MLS SAC</u> Natural England notes that the Cumulative Effect Assessment for physical processes does not consider volumetric, extent and distribution changes to MLS SAC arising from VE construction-related activities in combination with other plans, projects, or activities (e.g. aggregate dredging). In turn, we are concerned that these cumulative/in-combination effects may push the conservation objectives of maintain/restore further away from there desired trajectory.</p> | Natural England advises that the Applicant should consider potential seabed morphology, volumetric, extent, and distribution changes to MLS SAC arising from VE construction activities in combination with other plans, projects, or activities. The WCS should also be assessed. | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | B21 | 6.2.2, Tables 2.8 & 2.9 | <p>Natural England notes that the present EIA may not be sufficient to determine decommissioning impacts at the end of the OWF lifespan. This is because the baseline conditions at the end of the Project life may differ significantly from those at pre-construction and the value of receptors may also have changed over the lifetime of the project. However, we advise that the following is used to inform an outline decommissioning plan at the time of consent:</p> <ul style="list-style-type: none"> - potential long-term impacts to the physical environment and marine processes, of any assets left <i>in situ</i>; | Natural England advises that the outline decommissioning plan is updated to consider emerging alternatives to decommissioning and secure any associated monitoring. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <ul style="list-style-type: none"> - emerging alternatives to decommissioning, including repowering and life extension. | | |
| | B22 | 6.2.1 | Natural England advises that there is insufficient detail at present to inform the impact assessment of sheet piling within the beach/intertidal zone. | Natural England advises that more detail should be provided regarding impacts from the installation of sheet piling in the beach/intertidal zone at the consenting phase to ensure that mitigation measures are fit for purpose. This will need to be secured within the final Construction Environmental Management Plan (CEMP)/CMP. | |
| | B23 | 6.2.2 Section 2.10.83 | Natural England notes that it is anticipated that cable protection in the intertidal section will be installed below the (winter) beach level, which we welcome. However, there remains a risk (e.g. climate change impacts) that buried infrastructure may become exposed during the lifetime of the project. | Natural England advises that the Applicant provide further evidence at the consenting phase on the predicted vertical change in beach elevation through the lifetime of the project to ensure that the cable (and associated protection) remains buried. We advise monitoring of elevation change across the intertidal area through the lifetime of the project to assess buried infrastructure integrity is secured within the DCO and/or named plan. Climate change impacts should also be considered. | |
| Assessment Conclusions | B25 | 6.2.2 Section 2.10.43 | Natural England notes the overall level of effect of morphological change due to sandwave clearance and cable installation has been assessed as being of minor significance for designated areas of seabed in the Array Areas. However, given | Natural England advises that pre- and post-installation surveys should be secured in the DCO and/or In Principle Monitoring Plan to demonstrate geomorphological recovery after sandwave levelling and cable burial and | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>the large volumes of sediment that could be removed through levelling/bed preparation, we are concerned that sufficient uncertainty remains regarding the recovery potential of sandwaves (and other similar bedforms) in the Array Areas.</p> | <p>ensure remedial measures will be undertaken should impacts be greater than predicted.</p> | |
| | B26 | 6.2.2, Section 2.10.50 & 2.10.53 | <p>Natural England notes that the overall level of effect on Annex I sandbanks and designated areas (including Margate and Long Sands SAC) in the Offshore Export Cable Corridor (OECC) due to sandwave clearance and cable installation has been assessed as being of minor adverse significance. We are unable to support this conclusion owing to insufficient supporting information in the EIA.</p> <p>With regards to MLS SAC, in particular, Natural England is concerned that there are existing anthropogenic activities occurring with the SAC which have caused a significant alteration of the sandbanks and are hindering the conservation objectives for the designated site. Additional pressures are, therefore, likely to push the meeting of the conservation objectives further away from their desired trajectory.</p> | <p>Natural England advises that every effort must be made to mitigate project impacts to reduce project alone effects and cumulative/in-combination effects due to existing pressures. We also advise that a robust baseline should be established against which to assess the impacts of the project on Annex I sandbanks and protected habitats. In addition, we advise pre- and post-installation surveys should be secured to provide evidence of geomorphological recovery after sandwave levelling and cable burial and ensure remedial measures will be undertaken should impacts be greater than predicted.</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | B27 | 6.2.2, Section s 2.10.74 2.10.86 | Natural England notes the Applicant has proposed up to 8 export cable installation vessel laydown areas in the nearshore subtidal, with an indicative total maximum seabed preparation area of 57,600m ² and an indicative depth of 1m. This is an area equivalent to 8 Wembley stadium football pitches, which is substantial. Consequently, there are currently insufficient details regarding the location of the laydown areas and their potential impact on seabed morphology to agree with the effect significance conclusion. Furthermore, we do not agree that the coastline is of medium sensitivity/importance. The coastline is regionally, nationally, functionally, and strategically, important. It also provides a buffer between the sea and an ecologically important hinterland. | We advise that the Applicant needs to fully consider the potential impacts of the laydown areas on the nearshore hydrodynamic conditions, seabed, and coastal morphology. | |
| | B28 | 6.2.2., Section s 2.11.12 8-130, 2.11.78 & 5.4, Section 11.2.92 | <u>Impacts to Sediment Transport Regime in MLS SAC due to external cable protection</u> Natural; England notes that it is stated that ' <i>only very minor changes are expected to the sediment transport regime and any associated morphological impacts are also expected to be very limited</i> ' due to the presence of 900m (5400m ²) of cable protection within MLS SAC. However, we are concerned that MLS SAC has already | Natural England advises that wherever possible, the placement of external cable protection should be avoided (as North Falls OWF project has done). If this is not possible, the impacts should be reduced as much as possible and then appropriate mitigation measures applied. Currently, there is insufficient evidence to support the impact assessment. We advise that the Applicant needs to provide further | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>been adversely affected by anthropogenic pressures. These pressures may have reduced the capacity of the site to withstand further impacts in terms of its extent, volume, form, and function. We highlight that the Applicant has assessed</p> <ul style="list-style-type: none"> - the sensitivity/importance of the designated seabed at MLS SAC has been assessed as medium. - The magnitude of impact of change to sediment transport regime as low. - the overall level of effect of scour as minor. <p>However, we advise that there is insufficient evidence to support these conclusions.</p> | evidence to demonstrate that the presence of cable protection measures within MLS SAC will not affect sediment transport processes operating at the site. | |



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

Appendix C to the Relevant Representations of Natural England
Offshore Ornithology

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix C – Offshore Ornithology

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

- [APP-040] 5.4 Report to Inform Appropriate Assessment
- [APP-041] 5.4.1 HRA Site Integrity Matrices
- [APP-042] 5.4.2 HRA Screening Report
- [APP-043] 5.4.3 HRA Screening Matrices
- [APP-045] 5.4.5 Lesser Black Backed Gull Habitats Regulations Assessment
- [APP-046] 5.5 Habitats Regulations Derogation Case
- [APP-049] 5.5.3 Lesser Black Backed Gull Compensation – Evidence, Site Selection and Roadmap
- [APP-050] 5.5.4 Kittiwake – Evidence, Site Selection and Roadmap
- [APP-051] 5.5.5 Guillemot and Razorbill – Evidence, Site Selection and Roadmap
- [APP-052] 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plans
- [APP-053] 5.5.7 Kittiwake Implementation and Monitoring Plans
- [APP-054] 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plans
- [APP-055] 5.5.9 Lesser Black Backed Gull Compensation Site Suitability Report
- [APP-069] 6.2.1 Offshore Project Description
- [APP-073] 6.2.4 Offshore Ornithology
- [APP-103] 6.5.4.1 Offshore Ornithology Technical Report
- [APP-104] 6.5.4.2 Seabird Abundance by Month
- [APP-105] 6.5.4.3 Seabird Densities by Month
- [APP-106] 6.5.4.4 Seabird Abundance by Survey
- [APP-107] 6.5.4.5 Seabird Densities by Survey
- [APP-108] 6.5.4.6 Seabird Peak Seasonal Abundances
- [APP-109] 6.5.4.7 Seabird Peak Seasonal Densities
- [APP-110] 6.5.4.8 Annex showing collision risk model inputs and outputs
- [APP-111] 6.5.4.9 Annex showing seabird distributions recorded in aerial surveys
- [APP-112] 6.5.4.10 Annex showing the collision risk model comparison of modelling results
- [APP-113] 6.5.4.11 Annex showing the design based bootstrap variance estimates
- [APP-114] 6.5.4.12 Annex showing the digital video aerial survey of seabirds and marine mammals 2019-2021
- [APP-115] 6.5.4.13 Annex showing the digital video aerial survey of seabirds and marine mammals 2019-2020
- [APP-116] 6.5.4.14 Annex showing the migratory birds collision risk model
- [APP-117] 6.5.4.15 Annex showing the apportioning note
- [APP-118] 6.5.4.16 Annex showing the population viability analyses
- [APP-250] 9.18.1 Working in proximity to wildlife in the marine environment
- [APP-264] 9.31 Schedule if mitigation route map
- [APP-265] 9.32 Offshore in principle monitoring plan

1. Natural England's Advice and Recommendations

A summary of Natural England's key concerns in relation to offshore ornithology is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

Glossary of Acronyms and Abbreviations

| | |
|---------|--|
| AA | Appropriate Assessment |
| AEoSI | Adverse Effect on Integrity |
| ANS | Artificial Nesting Structure |
| AOE SPA | Alde-Ore Estuary Special Protection Area |
| BDMPS | Biologically Defined Minimum Population Scale/Size |
| C&D | Construction and Decommissioning |
| CEA | Cumulative Effects Assessment |
| CGR | Counterfactual of Population Growth |
| CPS | Counterfactual of Population Size |
| CRM | Collision Risk Modelling |
| DAS | Digital Aerial Survey |
| DBS | Dogger Bank South |
| DCO | Development Consent Order |
| dML | Deemed Marine Licence |
| EC | Export Cable |
| EIA | Environmental Impact Assessment |
| ExA | Examining Authority |
| FFC | Flamborough and Filey Coast |
| GU | Guillemot |
| GX | Gannet |
| HPAI | Highly Pathogenic Avian Influenza |
| HRA | Habitats Regulations Assessment |
| JNCC | Joint Nature Conservation Committee |
| KI | Kittiwake |
| LBBG | Lesser Black Backed Gull |
| LCI | Lower Confidence Interval |
| LSE | Likely Significant Effect |
| MSc | Master of Science |
| NE | Natural England |
| O&M | Operations and Maintenance |
| OTE | Outer Thames Estuary |
| OWEKH | Offshore Wind and Knowledge Hub |
| OWF | Offshore Wind Farm |
| PDA | Project Development Area |
| PVA | Population Viability Analysis |
| RA | Razorbill |
| RIAA | Report to Inform Appropriate Assessment |
| RTD | Red-Throated Diver |
| SADEP | Sheringham and Dudgeon Extensions Project |
| sCRM | Stochastic Collision Risk Modelling |
| SNCB | Statutory Nature Conservation Body |
| SoS | Secretary of State |

| | |
|-----|---------------------------|
| SPA | Special Protection Area |
| UCI | Upper Confidence Interval |
| VE | Five Estuaries |
| ZOI | Zone of Influence |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

Overarching comments on the Offshore Ornithology Impact Assessment

Natural England's 'Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards'

The Natural England best practice advice was commissioned by Defra's Offshore Wind Enabling Actions Programme. It aims to facilitate the sustainable development of low impact offshore wind by improving consistency and increasing clarity for industry, regulators and other stakeholders over data and evidence requirements at each stage of offshore wind development. The best practice advice was developed in consultation with industry, with representatives from a number of developers involved including RWE.

It is based on Natural England's experience of assessing OWF impact assessment applications over many years, and our analysis of best available evidence regarding impacts. It reflects wherever possible the SNCB consensus on impact assessments and will be updated when we consider there is sufficient evidence on a particular topic.

As this advice is a 'live' document, we welcome feedback and constructive criticism to inform future updates. However, in order to facilitate change to any advice it is important that a holistic sector wide approach is required. Natural England has noted the critique within the Environmental Statement (ES), but our current best practice advice remains unchanged and is unlikely to change during the examination process. We are hopeful that the forthcoming Offshore Wind Evidence & Knowledge Hub (www.OWEKH.com) should help facilitate further sector wide engagement and agreement on how best to assimilate the evolving evidence base into agreed guidance & approaches.

Natural England are concerned that a prolonged debate about the best practice advice could distract the Examination from focussing on resolving the outstanding issues with the Applicant's offshore ornithology impact assessment. We consider that these issues are by no means intractable and consider that it would be more beneficial to focus the Applicant's and our efforts on addressing them.

The Applicant's Characterisation of SNCB advice

Whilst we welcome that the Applicant has at times sought to provide analysis that aligns with the advice that Natural England have provided throughout the Evidence Plan process, we are disappointed that this and wider SNCB advice is frequently referred to as "overly precautionary" in comparison to the applicant's "evidence led" approach. The SNCB approach is no less evidence-led than that of the applicant. It is simply a different interpretation of the same evidence, and one which takes account of the evidence-poor, high-uncertainty environment within which the assessments are carried out, as well as the requirements of the Habitats Regulations. We, therefore, consider that our advice is both proportionate and appropriately precautionary.

The question of how best to conduct an impact assessment in the context of a limited understanding of those impacts is ultimately a matter of ecological judgment. Given Natural England's role as the appropriate national conservation body, considerable weight ought to be given to its advice and there should be cogent and compelling reasons for departing from it^[1].

^[1] Akester & Anor (On Behalf of the Lymington River Association), R (on the application of) v Department for Environment, Food and Rural Affairs [2010] EWHC 232 (Admin), para 1

| Table 1 Summary of Key Issues – Offshore Ornithology. NE Ref | <ul style="list-style-type: none"> Summary of Key Concerns | Natural England’s Recommendations to Resolve Issues. | Risk |
|---|---|--|-------------|
| C1 | <p>An Adverse Effect on Integrity (AEol) on the Alde-Ore Estuary Special Protection Area (AOE SPA) lesser black-backed gull (LBBG) population is likely, but the estimated mortalities and compensation quantum derived for the derogation case using the Natural England preferred approach appear incorrect.</p> | <p>An updated assessment should clarify the summed predicted mortalities of LBBG due to collision from both the north and south arrays, and, if necessary, the Population Viability Analysis (PVA) should be re-run (with burn-in) to indicate the project alone and in-combination effects on the AOE SPA qualifying feature.</p> | |
| C2 | <p>PVAs were run without a burn-in period</p> | <p>For consistency with Natural England best practice and to improve confidence in the results, we advise the PVAs are re-run with a burn-in period of 5 years and presented in an updated assessment.</p> | |
| C3 | <p>The Applicant has not included an assessment of impacts on the Farnes SPA Razorbill population for the project alone during the Operations and Maintenance (O&M) phase and in-combination during all phases of the development.</p> | <p>Provide the omitted data so an appropriate assessment can be made of the risk posed to protected Razorbill populations at the Farnes SPA.</p> | |
| C4 | <p>Other than for the AOE SPA LBBG population, the Applicant has apportioned adults subject to Habitats Regulations Assessment (HRA) during the breeding season using the generic data presented in Appendix A of Furness (2015), rather than using site-specific data to establish the number of adult- or adult-type birds present. Natural England do not accept the Applicant’s approach to apportioning adults based on theoretical generalised stable age structures.</p> | <p>We recommend that for species that can be aged as adult or sub-adult from Digital Aerial Survey (DAS), site-specific data represents the best available evidence for apportioning.</p> <p>Where good quality site-specific ageing data are not available, then Natural England recommend that a precautionary approach should be adopted and all ‘adult type’ birds (i.e. birds that cannot be distinguished from adults, and hence might be adults) are apportioned as adults.</p> | |

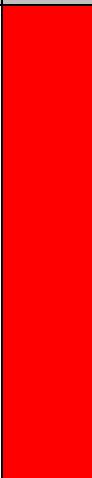

| Table 1 Summary of Key Issues – Offshore Ornithology. NE Ref | <ul style="list-style-type: none"> Summary of Key Concerns | Natural England’s Recommendations to Resolve Issues. | Risk |
|---|--|--|--|
| C5 | <p>The Applicant has applied their preferred displacement (50%) and mortality (1%) rates to the guillemot and razorbill populations at risk at each offshore wind farm (OWF) project included in the in-combination assessment for the Flamborough & Filey Coast Special Protection Area (FFC SPA). As well as departing from Natural England advice on this matter, in so doing the Applicant disregards the in-combination impact estimates that have been used by the Secretary of State (SoS) for recently consented OWFs.</p> <p>Natural England advises that the in-combination impacts on the FFC SPA populations of guillemot and razorbill are already at level where it has not been possible to rule out adverse effects, and that Five Estuaries (VE) OWF will be adding to this impact.</p> | <p>Natural England reiterate our pre-application advice that the project should simply add the VE project alone impact (at 70% displacement and 2% mortality) to the total in-combination impact agreed in the Sheringham and Dudgeon Extensions Project OWF (SADEP) Examination. This should be submitted into the Examination.</p> |  |
| C6 | <p>In the PVA for guillemot and razorbill, Natural England welcome the presentation of results for a range of project alone and project in-combination displacement and mortality scenarios, but we would like to see 2% rather than 10% mortality at 70% displacement as the worst-case scenario for these species. For the in-combination assessment, this would be consistent with recent advice given to SADEP OWF (ref PINS EN010109) where we advised 70/2 for all projects other than Hornsea 4 where we advised 70/5. It also recognises that SoS will likely base their conclusions on this scenario across all projects and so would be advantageous to present in both the project alone and in-combination assessments.</p> | <p>We advise a PVA run (with burn-in) using the losses estimated from 70% displacement and 2% mortality would present a more realistic worst-case scenario and would generate a more relevant level of loss to compare with other less impactful scenarios.</p> |  |

Table 2 Natural England's Detailed Advice and Recommendations – Offshore Ornithology.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Project Parameters - Document(s) Used: [APP-069] 6.2.1 Offshore Project Description, [APP-073] 6.2.4 Offshore Ornithology | | | | | |
| Project Description & Natural England's Position on Worst Case Scenario or Scenarios | C7 | 6.2.1 and 6.2.4 | No comment required | None | |
| Baseline Characterisation - Document(s) Used: [APP-040] 5.4 Report to Inform Appropriate Assessment, [APP-069] 6.2.1 Offshore Project Description, [APP-073] 6.2.4 Offshore Ornithology, [APP-103] 6.5.4.1 Offshore Ornithology Technical Report, [APP-104] 6.5.4.2 Seabird Abundance by Month, [APP-105] 6.5.4.3 Seabird Densities by Month, [APP-106] 6.5.4.4 Seabird Abundances by Survey, [APP-107] 6.5.4.5 Seabird Densities by Survey, [APP-108] 6.5.4.6 Seabird Peak Seasonal Abundances, [APP-109] 6.5.4.7 Seabird Peak Seasonal Densities | | | | | |
| Survey Data Acquisition | C8 | 6.5.4.1 1-13 | A novel approach was used to estimate the variance around the seabird density estimates. The variance is usually calculated using the seabird counts from each survey transect as independent units. However, now digital aerial surveys require fewer transects than boat surveys to cover the PDA this method no longer provides enough precision and confidence in the estimated means. | The approach is satisfactorily shown to improve the precision of the seabird densities for most species (see 6.5. Annex 4.11) and was agreed to be appropriate in this case. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | C9 | <p>6.2.4 sec 4.4.3, Table 4.2; 5.4, sec 11.4.60-61; 9.18.1, sec 3.3.2</p> | <p>To mitigate the risk to red-throated diver (RTD), commitment to the management of vessel movements within the OTE SPA +2km buffer (outlined in the DCO) should extend across all phases of the development for both the export cable (EC) and array.</p> <p>Whilst the applicant downplays the amount of additional vessel activity on top of baseline movements within the OTE SPA and asserts impacts on RTD from displacement are minimal, Natural England considers that the conservation objective of concern in this context is not RTD abundance but the availability of unimpacted habitat in the SPA and maintenance of the birds' distribution.</p> | <p>Natural England is increasingly concerned that disturbance and/or displacement of red-throated divers from the more persistent presence of OWF-related vessels could make a meaningful contribution to in-combination impacts in the OTE SPA. As a result of this we advise that there is a likely significant effect which should be considered in more detail in the Appropriate Assessment (AA).</p> <p>Due to the risk posed by vessel movements Natural England strongly recommends all vessel activity within the SPA +2km buffer be undertaken outside the seasonal restricted period during the Construction and Decommissioning (C&D) of the export cable (EC) and follow Natural England best practice guidelines on vessel movements during all other phases of the development for both the EC and array.</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | C10 | 6.2.4, 6.5.4.1 1 | A design-based approach is used to estimate bird abundance and density. Variations in the seabird abundancies and densities are estimated using a novel approach to improve the precision of the estimates. This approach was discussed during pre-application consultation with the applicant and Natural England are satisfied that it is appropriate. | Natural England are broadly supportive of the novel approach taken to calculating the design-based estimates. We welcome that a comparison is presented against data derived from a standard design-based approach (i.e. using the entire transect as the smallest independent unit for resampling). This supports the claimed improvement in precision, increases the confidence that suitable estimates have been generated, and allows SNCBs to fully consider more general application of the method at other appropriate projects | |
| | C11 | 6.2.4, 6.5.4.1 6 | <p>For lesser black-backed gull the PVA analysis was run and presented for both VE and Natural England preferred scenarios, i.e. either using generic adult proportion data and discounting sabbaticals or using site-specific adult proportions and including sabbaticals, respectively.</p> <p>Natural England considers the site-specific age data represents the best available evidence to estimate the proportion of adults in the PDA (see comment below Natural England Ref C27). Moreover, Natural</p> | The Natural England preferred scenarios should be used as the basis of the impact assessment. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | England does not consider the current evidence base sufficient to recommend sabbatical rates of >0 for any species. We acknowledge some birds do not breed every year, but the mean proportions of populations doing so are not well understood, nor are their behaviours or distributions in the breeding season (see comment below Natural England Ref C28). | | |
| | C12 | 6.5.4.1 0; 6.5.4.8 | Natural England welcome the testing and comparison of CRM outputs from the stochLAB package with those obtained from the online shiny app tool. | Natural England agree that using stochLAB makes no material difference to the findings of the CRM. | |
| | C13 | 6.5.4.1 6, sec 2.2.5 | <p>The PVA modelling was run excluding a 'burn in' period for all species and sites.</p> <p>Natural England best practice advocates that the PVA models are run with a 'burn in' period of five years (Parker et al., 2022; Mobbs et al. 2020). This is to allow the model to reach stability prior the projection period beginning. It is also expected that the log files will be supplied as part of the application to facilitate review and ensure transparency in the specification and parameterisation of the model.</p> | For consistency with Natural England's best practice and to improve confidence in the results we advise the PVAs are re-run with a burn-in period. This will be particularly important where we have advised the PVAs are re-run anyway e.g. for lesser black-backed gull (see Natural England Ref. C30. below) guillemot and razorbill (see Natural England ref. C31 below). | |
| Environmental Impact Assessment - Document Used: [APP-064] 6.1.3.1 Cumulative Effects Assessment Methodology, [APP-073] 6.2.4 Offshore Ornithology, [APP-250] 9.18.1 Working in Proximity to Wildlife in the Marine Environment | | | | | |
| Identified impacts | C14 | 6.1.3.1, Table | The Cumulative Effects Assessment (CEA) considers an arbitrary 500km Zone of | Natural England advise that the spatial scale for scoping in other | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | 3.2, 6.2.4 , sec. 4.13.4 and 4.13.9 | Influence (ZOI) to scope in other projects for consideration. For offshore ornithology, foraging range is an appropriate tool to screen for impacts to breeding birds, but not outside the breeding season. The approach for non-breeding birds is not given. | <p>projects for consideration in the CEA (i.e., defining a ZOI) should be based on a suitable evidence base (e.g., the relevant BDMPS).</p> <p>However, we note all the wind-farms projects within the UK North Sea and Channel (equivalent to the relevant BDMPS) have been screened into the CEA and so, in this case accept that all significant projects have been scoped into the CEA.</p> | Yellow |
| | C15 | 6.2.4 , sec 4.3, Table 4.52 | Natural England highlights that the values used in the in-combination assessment for other English North Sea projects entering the NSIP process in 2024 (Outer Dowsing, Dogger Bank South West and South East, North Falls) are likely to be subject to change through their respective Examinations, particularly where these values are based on those from Preliminary Environmental Information reports. | Natural England recommends the Applicant to contact the relevant developers to agree how updated values based on SNCB advice are shared and disseminated across their Examinations, to ensure the in-combination assessment is updated in a streamlined way. | |
| Methodology | C16 | 6.2.4, sec. 4.11.11 0. | CRM has been undertaken using the deterministic Band model. Uncertainty in flight density has been incorporated by estimating collisions using mean, Upper Confidence Interval (UCI) & Lower Confidence Interval (LCI) density estimates. However, other model parameters have not | Our best practice guidance recommends the use of the stochastic model to fully incorporate uncertainty and variability in input parameters. However, if the deterministic model is to be used (as in this case) we | Yellow |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>been varied e.g. flight height, except in the stochastic modelling that was undertaken for those species the Applicant considered at greater risk of collision.</p> <p>Natural England agree that variation in density is likely to be the most influential and welcome its consideration here. However, we advise that the other sources of variability/uncertainty should also be fully considered. If other parameters (beside bird density) are not varied, Natural England advise that a worst case should be identified and used for all parameters. It is not clear if this has been the case or not, e.g. for flight height. More detail in the form of logfiles for the models run would aid a more detailed review.</p> | <p>advise that for the key input parameters below, uncertainty around the parameter estimates should be considered on an individual parameter basis:</p> <ul style="list-style-type: none"> • Monthly bird density; • Flight height; • Avoidance rate; and • Nocturnal activity factor <p>This can be done using the Band (2012) spreadsheet or by running the sCRM model developed by McGregor et al. (2018) or the new stochLAB tool (as the case here for a selected range of the species) by having no variability (i.e., standard deviations) set for any input parameter, and then undertaking multiple runs of the model to account for individual variation in each relevant input parameter. This gives an indication of which parameters might have the most influence on the prediction of collision risk, recognising that individually these will not reflect the effect of uncertainty across all parameters.</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | | |
| | C17 | 6.2.4, secs. 4.13.13 -142 | EIA CEA impacts on baseline mortality >1% are not modelled using PVA but considered against other OWF PVAs carried out in the southern North Sea e.g. Norfolk Boreas, East Anglia 3 and Hornsea 4. Cumulative impacts on baseline mortality >1% were found for gannet, great black-backed gull, lesser black-backed gull, herring gull, kittiwake, guillemot, and razorbill during the O&M phase as well as on red-throated diver during the C&D and O&M phases. However, the Applicant only reports comparative estimates of counter-factual population size or reduction in population size for gannet, kittiwake and LBBG. | <p>In general, Natural England guidelines recommend that PVA models are run using JNCC & Natural England's 'Seabird PVA Tool' as a matter of best practice where impacts are likely to increase baseline mortality >1%.</p> <p>Whilst a significant cumulative effect cannot be ruled out for some of these species due to the impacts of existing/consented windfarms (see C20 below), Natural England acknowledge that the contribution from VE would not materially affect the overall cumulative impact magnitude. However, use of the PVA tool in this case will also ensure transparency over the approach and consistency across projects. NE therefore recommends the cumulative impacts are assessed further using the PVA tool for these species.</p> | |
| | C18 | 6.2.4, secs. 4.10.36 | The impacts on red-throated diver (RTD) during construction of the EC are stated to be 15 birds per annum (at 100% displacement and 10% mortality) but the impacts from both | Clarity should be provided on if the combined impacts on RTD during the construction phases of the EC and turbine array. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | and 4.10.46 | the array and EC construction is stated as less at 14 birds. The combined impacts must be more or the same but not less than stated for one phase of the work. | | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | C19 | 9.18.1, secs 3.3. | Procedures to minimise disturbance to red-throated diver during construction, operation, and maintenance activities are in accordance with Condition 12 of the Generation Assets deemed Marine License (dML) in Schedule 10 of the draft Development Consent Order (DCO), and Condition 12 of the Transmission Assets dML in Schedule 11 of the draft DCO. They include a seasonal restriction, <i>'Export cable installation will not be carried out within the Outer Thames Estuary SPA between 1st November to 31st March inclusive to mitigate disturbance impacts on red throated diver'</i> . | Natural England welcome the seasonal restriction for the export cable but emphasise that it will be essential to mitigate impacts from other aspects of the proposal that could contribute to AEoI at the OTE SPA (see Natural England Ref. C9 above and C21 below). We also highlight the seasonal restriction should be applied to the OTE SPA <u>and a 2km buffer</u> to ensure risk to RTD are minimised according to best practice. | |
| Assessment Conclusions | C20 | 6.2.4 Table 4.69 | The Applicant's assessment concludes minor adverse (not significant) impacts for all species and impact pathways. Natural England do not agree with the conclusions of this assessment. The Applicant also presents the impacts found to be significant using the Natural England assessment parameters. Again, the Applicant's impact assessments are framed as 'evidence-based' compared to Natural England's being 'precautionary'. As previously noted, Natural England do not agree with this characterisation of the | Natural England has already identified significant adverse impacts at the EIA scale to gannet, kittiwake, great black-backed gull, guillemot, razorbill and red-throated diver from OWF in the North Sea, irrespective of whether the Five Estuaries is included in the cumulative totals. The project will therefore be making an additional contribution to those totals. We advise the Applicant | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | contrasting approaches. Furthermore, we note that the 'NE residual significance' presented does not always align with the Natural England position on EIA scale impacts. | review the EIA section of Natural England's final offshore ornithology advice into the SADEP Examination for further information (REP8-102), and make updates to the CEA as necessary. | |
| | C21 | 6.2.4, sec 4.10.17 | The sensitivity of red-throated divers to disturbance effects from offshore developments are described in this section but using examples of research that do not illustrate the full scale of the impact. Garthe et al. 2023 review the evidence well and more clearly detail the large-scale effects of OWF on this species e.g. reduction in bird densities up to 9-12km for the OWF footprints. Burger et al. 2019 also show effects from shipping up to 3km distance and slower re-occupation rates to areas passed by fast moving vessels. | A more representative description of the scale of impacts likely on RTD (reflecting the Applicant's own review of RTD sensitivity presented in doc. 6.2.4 secs. 4.11.25-4.11.34) would be better to allow the examiners to fully appreciate the mitigation necessary to maintain the integrity of the OTE SPA qualifying feature. The conservation objective of key concern here is " <i>the distribution of the qualifying features within the site</i> ", not RTD mortality. Consequently, if RTD are displaced from an area of the SPA, then the conservation objective is hindered. Appropriate mitigation such as the planned seasonal restriction on cable installation and adoption of the best practice protocol for other construction and O&M vessels in the OTE SPA | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | +2km buffer will be essential to guarantee no AEol. | |
| | C22 | <p>6.2.4, sec. 4.11.73 ; 5.4, sec. 11.4.35 -38</p> | <p>The Applicant downplays the impact on auks caused by OWF induced displacement. The assessment asserts i) evidence for auk displacement is incomplete and may reduce with habituation. ii) OWFs may increase food availability for auks by enhancing fish populations and iii) displacement caused mortality is likely to be zero as the alternative remaining habitat remains vast. However, in the absence of any compelling evidence to demonstrate any of the above either way, the prospect of displacement being a significant issue scenario cannot be ignored, particularly as the risk of displacement induced mortality may increase as the area of sea under development as well as other human-induced pressures continue to grow. This is of particular concern in the southern North Sea given the level of existing and proposed development.</p> <p>Our position on much of the evidence presented here (particularly the APEM review) has previously been stated within the examination of the Hornsea 4 project, see EN010098-001249-Natural England - Comments on any other submissions received at Deadline 1.pdf (planninginspectorate.gov.uk)</p> | <p>We recommend that the ExA should consider the following alongside the Applicant's assertions:</p> <p>There is an established evidence base in support of guillemot displacement from OWFs (see overview by Dierschke et al. 2016; Vanermen et al. 2015; Peschko et al. 2020a, b; Mercker et al. 2021a). While displacement effects on auks remain poorly understood and may prove to be variable, Natural England note a recent study has highlighted the potential for displacement to occur over much greater distances (up to ~20km) than are typically assessed or considered by baseline characterisation surveys (Peschko et al. 2024).</p> <p>Natural England are not aware of any evidence for habituation, and thus, declining displacement of auks from OWFs over time.</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | <p>Guillemots and seabirds in general also continue to experience multiple human induced pressures that offshore developments are at risk of accentuating.</p> <p>Therefore, Natural England do not consider our advised approach to the impact assessment to be unduly precautionary and question the characterisation of it as such in light of the evidence base and high levels of uncertainty regarding the consequences of displacement.</p> | |
| <p>HRA - Document Used: [APP-042] 5.4.2 HRA Screening Report, [APP-049] 5.5.3 Lesser Black Backed Gull Compensation – Evidence, Site Selection and Roadmap, [APP-050] 5.5.4 Kittiwake – Evidence, Site Selection and Roadmap, [APP-051] 5.5.5 Guillemot and Razorbill Evidence, Site Selection and Roadmap, [APP-052] 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plan, [APP-053] 5.5.7 Kittiwake Implementation and Monitoring Plan, [APP-054] 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plan, [APP-055] 5.5.9 Lesser Black Backed Gull Compensation Site Suitability Report, [APP-073] 6.2.4 Offshore Ornithology, [APP-103] 6.5.4.1 Offshore Ornithology Technical Report</p> | | | | | |
| Screening | C23 | 5.4.2, Table 4.15, Fig. 4.4 | Potential transboundary impacts on Alderney's Ramsar site and the Cote de Granit Rose-Sept Isles have been omitted from the screening process, yet both contain important seabird populations, notably gannet. | We notice these sites have been omitted from the transboundary impact assessment yet populations of gannets from both sites were considered in the pre-application phase and during discussions with | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | Natural England about apportioning birds to FFC SPA. | |
| | C24 | 5.4.2, Table 4.14. 5.4, secs. 11.4 and 12.4 | Both guillemot and razorbill populations at the Farnes SPA were screened in for HRA due to risk of LSE from direct disturbance and displacement in the non-breeding season. However, the applicant has omitted to add an assessment of impacts on Razorbill for the project alone during the O&M phase and in-combination during all phases of the development. | Until the Applicant provides a full assessment of LSE on the Farnes SPA population of razorbill for both project alone and in-combination with other projects, Natural England are unable to agree the overall impact of the project on the protected populations of Razorbill. | |
| | C25 | 5.4, secs.1 1.4.74-173 | Impacts predicted during the C&D phase are not presented in matrices for guillemot (GU) and razorbill (RA) at the Farnes SPA, and for gannet (GX), GU and RA at the FFC SPA. As noted above, impacts predicted during the O&M phase are not presented in a matrix for RA at the Farnes SPA. | Follow Natural England's best practice guidelines and in the interests of transparency present displacement matrices for all species screened into the HRA. | |
| Assessment | C26 | 5.4, sec. 11.4.3 3, Table; 11.22; 6.5.4.1 5, sec. 2.2.9-12, sec. 3.1.2 | Natural England agrees with the Applicant's apportioning of lesser black-backed gull to the Alde Ore Estuary SPA in the breeding season (subject to clarification of the exact figure - see NE Ref. C30 below) as well as its SPA apportioning of gannet to the FFC SPA. | Natural England agrees with the SPA (40%) and adult (79%) apportioning for lesser black-backed gull at the AOE SPA as well as the SPA apportioning figure for gannet at the FFC SPA (74%). | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | C27 | <p>5.4, sec. 11.4.3 3, Table; 11.22; 6.5.4.1 5, sec. 2.2.9-12, sec. 3.1.2</p> | <p>Natural England does not agree with the Applicant's process for adult apportioning subject to HRA, notably the breeding population of gannets at the FFC SPA.</p> <p>The Applicant considers Furness (2015) to provide a more accurate representation of population age structure than site-based data, due to the proportion of individuals aged within the latter. The Applicant also argues that Furness (2015) draws upon a wide number of data sources gathered across multiple years to model population age structure, and so reduces the potential for any bias associated with the snapshot nature of site-based surveys.</p> <p>Natural England disagrees with the Applicant's reasoning. It is considered highly unlikely that a stable age structure, modelled for a very large geographic region, will be representative of the VE project area. Furthermore, we believe it should be possible to age a representative sample of gannets from DAS data.</p> <p>Natural England, therefore, do not accept the Applicant's approach to apportioning adult gannets (or other species) to the FFC SPA. Natural England regards these unlikely to be</p> | <p>Natural England continues to advise that for species that can be aged as adult or sub-adult from DAS, site-specific data represents the best available evidence for apportioning and that this should be used wherever possible. In cases of small sample sizes of aged birds for species such as gannet, we recommend engagement with DAS providers to ensure the aged proportion is as high as possible. For example, more detailed/focused analysis of imagery by more experienced analysts may yield better results.</p> <p>Where good quality site-specific ageing data are not available, then Natural England recommend that a precautionary approach should be adopted and all 'adult type' birds (i.e. birds that cannot be distinguished from adults, and hence might be adults) are apportioned as adults. We also suggest that the apportioning of adult birds should be season-specific to account for any</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>representative of the actual proportions of adults present within specific areas at different times of year. This constitutes a significant source of uncertainty which could lead to over, or more importantly, underestimation of impacts. We note that the proportion of gannets aged as adult from the baseline data suggests a significant risk that using the stable age structure could significantly underestimate that number of adult birds present.</p> | <p>seasonal variations in the use of the site.</p> <p>An updated assessment based on Natural England's advised approach should be submitted into the Examination in due course.</p> | |
| | C28 | <p>6.5.4.1 5 sec. 2.2.15-21</p> | <p>Sabbatical rates were incorporated into the assessment (where they were available). We note that <i>"The sabbatical rates presented align with those recommended by Marine Scotland for the Seagreen Phase 1 Offshore Project (Marine Scotland, 2017)."</i> The rates adopted by the Applicant, taken from guidance supplied to a Scottish OWF by Marine Scotland seven years ago, were specifically for inclusion within a PVA model, not apportioning. <u>Further, the use of these rates is not justified or evidenced in the cited document.</u></p> <p>Expert review of the seabird demographic rates presented by Horswill & Robinson (2015) and the literature used to inform them should introduce significant caution in any</p> | <p>Natural England does not consider the current evidence base sufficient to recommend sabbatical rates of >0 for any seabird species. We therefore welcome the presentation of results derived from adult populations that have not been altered to take sabbaticals into account.</p> <p>We advise that integrity judgements should be based on assessments that do not remove sabbatical birds at the apportioning stage.</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>consideration of sabbaticals during impact assessment. In short, there are insufficient studies to inform a full understanding and no clear basis to extrapolate findings to other colonies. Further, it is highly uncertain that historic findings remain relevant now, or for the extended period that OWF projects may impacts on populations.</p> <p>Key issues that currently preclude the proper consideration of sabbaticals but were apparently not considered by the Applicant, are briefly detailed below.</p> <ul style="list-style-type: none"> • Mean proportions of populations expected to take sabbaticals are poorly understood. Temporal and spatial variation of sabbatical rates remains largely unknown. Thus, we have no basis to assign rates to breeding populations that are not directly studied. • The behaviour of sabbatical birds is unknown. We do not know if they are present at colonies, or how they forage. Thus, we do not understand their potential impact exposure. • It is possible that sabbatical birds contribute to some colony population estimates if they are present in breeding habitat during counts. | | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>Further, if they do remain at colonies (e.g. defending a nest site) some sabbatical birds may even inform productivity rates calculated for breeding populations. This would need to be accounted for in impact assessment.</p> <ul style="list-style-type: none"> • Sabbatical birds are part of the breeding population and their potential impact exposure compared to breeding birds is not known. • Natural England acknowledges that sabbaticals are an important consideration for improving impact estimates and represent a knowledge gap. However, at present we do not believe that simply removing them from assessments during apportioning is appropriate. | | |
| | C29 | 2.2.20 | <p>This section of the ES states that <i>“For lesser black-backed gull, research has also shown that up to 40% of individuals which have previously bred may fail to breed in a given year, and therefore the value of 35% advocated by Marine Scotland (2017) is considered to be both relevant and sufficiently precautionary.”</i></p> <p>We highlight that the studies referenced in the Horswill & Robinson (2015) review are</p> | The Applicant should cite this research so it can be appraised. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | dated and from a single colony, and not geographically relevant. Calladine & Harris (1997) reported missed breeding events at the Isle of May over just two breeding seasons, finding 34% (n=143) and 40% (n=149) of marked lesser black-backed gulls failed to breed in 1993 and 1994, respectively. Natural England are not persuaded that a sabbatical rate of 35% can be considered either relevant or precautionary on this basis. | | |
| | C30 | 5.4, sec. 11.4.2 20, Tables 11.35, 11.37 and 12.30; 6.5.4.1 6, Tables 3.1 and 4.1 | Lesser black-backed gull mortality per annum caused by collisions during the O&M phase are quoted in the RIAA (5.4, sec. 11.4.220) and PVA document (6.5.4.16 Tables 3.1 and 4.1) as 11.31 birds per annum (calculated using Natural England's preferred methodology) yet the total losses from both the north (11.09 birds) and south (3.61 birds) during the breeding season would be 14.7 birds, according to Table 11.35 in the RIAA (doc 5.4 pg. 390). In addition to the predicted 0.22 breeding adult collisions per annum in the non-breeding season this would more accurately equate to 14.92 birds per annum. It is therefore unclear to Natural England what the total losses were, and if they have been applied correctly to the PVA. | Natural England are unable to fully assess or agree the impacts of the project on lesser black-backed gull. To do so the Applicant must clarify the total lesser black-backed gull losses per annum calculated using the Natural England preferred approach (i.e. including the combined impacts of both the north and south arrays) and run a PVA (with a 5-year burn-in) using the appropriate figure to assess the project alone and in-combination effects on the AOE SPA lesser black-backed gull population. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | Furthermore, in the PVA report (6.5.4.16) the Counterfactual of Population Growth (CGR) and Counterfactual Population Size (CPS) figures in Table 4.1 do not fully match those given in Table 12.30 in the RIAA (5.4). | | |
| | C31 | 6.5.4.1 6, secs. 3.5 and 3.6; 6.2.4 sec. 4.11.7 1 | In the PVA for guillemot and razorbill, Natural England welcome the presentation of results for a range of project alone and project in-combination displacement and mortality scenarios but, consistent with recent advice given to SADEP OWF (ref PINS EN010109) for in-combination assessments Natural England would regard 2% rather than 10% mortality at 70% displacement a more realistic worst-case scenario to be modelled for these species (with the exception of Hornsea 4, where we consider a 5% mortality rate is warranted). | We advise a PVA run using the losses estimated from 70% displacement and 2% mortality (with 5% mortality for Hornsea 4) would present a more realistic worst-case scenario and would make a more relevant comparison of likely effects on the guillemot and razorbill populations over the lifetime of the project. Furthermore, the absence of displacement matrices for some sites and species in the RIAA e.g. guillemot and razorbill at the Farnes SPA, makes any judgement of the impacts from alternative levels of displacement and mortalities impossible for the reviewer (see note above Natural England Ref. C25). | |
| | C32 | 5.4,sec s. 12.4.2 9, | The Applicant has applied their preferred displacement (50%) and mortality (1%) rates to the guillemot and razorbill populations at risk at each OWF project included in the in- | Natural England advises that the in-combination impacts on the FFC SPA populations of guillemot and razorbill are already at level where | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | 12.4.4 6 | <p>combination assessment for the FFC SPA. As well as departing from Natural England advice on this matter, in so doing the Applicant disregards impact estimates that were agreed by the SoS for recently consented OWFs.</p> <p>We highlight that the Applicant's adopted approach has calculated a predicted total in-combination annual mortality for guillemot of just 465 birds. However, the project alone impact arising from Hornsea 4 was suggested by the ExA and agreed by SoS to be 452 birds per annum (Desnz HRA - Hornsea Project 4 (planninginspectorate.gov.uk)). In this light, Natural England do not consider the presented in-combination assessment to be fit for purpose.</p> | <p>it has not been possible to rule out adverse effects, and that Five Estuaries (VE) OWF will be adding to this impact.</p> <p>With this in mind, Natural England reiterate our advice above (Natural England Ref. C31) that the project should simply add the VE project alone impact (at rates of 70% displacement and 2% mortality) to the total in-combination impact agreed in the SADEP examination.</p> | |
| | C33 | 5.4, sec 11.4.2 35 | In the CRM for migratory waterbirds all species assessed were assumed to fly at rotor height at a precautionary 100% of the time except dark-bellied Brent goose. Brent geese were assessed instead at the less precautionary rate of 50% but a clear evidence-based reason was not given. | Provide evidence to indicate why Brent geese can be treated differently in this case - enabling their migratory CRM to be run using a less precautionary figure. | |
| | C34 | 11.4.5 4- 11.4.7 3 | In the RTD assessment, the Furness (2015) is migration free season used (i.e. impacts are only estimated for December and January) | Assess the impacts on RTD according to the seasonality defined in the OTE SPA | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | conservation advice (i.e. October to May). | |
| In- combination | C35 | 6.2.4, 4.13.1 2 | VE and North Falls projects are sharing the Export Cable Corridor (ECC), working in collaboration to coordinate construction and limit disturbance. | Natural England welcomes the collaboration with North Falls OWF to coordinate construction and limit potential disturbance along the shared ECC. | |
| | C36 | 5.4, sec 12.4.1 17-123 | <p>The Applicant notes that some of the operating OWF were not built to full capacity and that their predicted impacts would be less in reality than stated, thereby providing some 'headroom' in the in-combination assessment.</p> <p>In particular, the Applicant suggest that if the impacts from Galloper on kittiwake, guillemot and LBBG are revised to take account of headroom the number of mortalities released would exceed those predicted for the project and negate the need for derogation cases for at least kittiwake and guillemot. However, Natural England note that this would not be the case if the Applicant calculated their losses from collision using Natural England's preferred approach to the CRM analyses rather than their own.</p> <p>Natural England are actively engaged with industry considering ways that 'as-built' parameters can be used within assessments.</p> | Natural England advises that consent decisions should be based on cumulative/in-combination totals based on 'as consented' parameters within all relevant assessments. Speculation of impacts from as built scenarios in CEA are of little value unless legal agreements are put in place to ensure existing projects will not expand further. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>However, at present we do not consider it appropriate to reduce impact estimates by considering as-built parameters unless those parameters are legally secured.</p> <p>In any event, the reduction of impacts from Galloper cannot be assumed to bring down the in-combination total to a level that would result in a conclusion of no AEOI and therefore avoid the need for Five Estuaries to provide compensation for its contribution. That Galloper is a sister project to Five Estuaries is moot.</p> | | |
| Further Receptor Points | C37 | 5.4, sec. 11.4.3 4 | <p>The Applicant's review points out that guillemot displacement rates may be reduced during the breeding bio-season by ~20% compared with the non-breeding bio-season - which is of importance considering the mean displacement rates derived from the Dierschke's (2016) review were predominantly from data collected in the nonbreeding bio-season.</p> <p>While Natural England do not disagree that auk displacement rates appear to be reduced for breeding birds in the breeding season (e.g. as found at Robin Rigg OWF where breeding guillemots were not found to be displaced), we note that the Applicant is only</p> | See note above (Natural England Ref C36) | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | assessing displacement of auks in the non-breeding season. | | |
| | C38 | 5.4. sec. 11.4.2 14; 6.5.4.1 5, sec. 2.2.23 & Table 2.5 | The Applicant reports in the RIAA that 40% of lesser black-backed gull were apportioned to the AOE SPA yet the Apportioning Note presents two different figures in the text e.g. sec. 2.2.23, 40%, and Table 2.5, 35.5%. | In the analyses, clarify if 40% of LBBG (as agreed with NE) were apportioned to the AOE SPA during the breeding season or not. | |
| | C39 | 5.4 11.4.3 9 | The Applicant states that for auk species <i>"Potential LSE for migratory birds has been ruled out as they do not forage or roost in the array area and only transit through the area during migration"</i> | The Applicant should evidence this statement. Natural England consider it entirely reasonable to assume that migrating auks may forage and roost in the array area during migration. | |
| | C40 | 9.3.2 sec 4.5.3 | Post-consent monitoring is focused entirely on compensatory measures. Post-consent monitoring of the OWF could help clarify the key risks such as those posed to LBBG from collision. | A post consent monitoring plan would be beneficial. Data acquired could be used to validate predictions and assumptions made within the application but also help to detect unforeseen effects and address uncertainty: something that could help reduce the current level of precaution deemed necessary in the assessment. | |
| Assessment Conclusions | C41 | | We are unable to agree the effects of the project on some species subject to HRA. | Seabirds continue to experience multiple human induced pressures | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>Clarification is required on the scale of impacts on the guillemot and razorbill populations breeding at the Farnes and FFC SPAs, the kittiwake and gannet populations at the FFC SPA and the lesser black-backed gull population at the AOE SPA. Until this is resolved we are unable to agree the scale of compensation required to off-set the losses predicted for these species.</p> | <p>that offshore developments are at risk of accentuating. The numbers of LBBG breeding at the AOE SPA are well below the population size at its classification. As well as for this population, the SoS has already agreed that in-combination there is AEOI at FFC SPA for kittiwake and guillemot.</p> <p>Therefore, it is important that the Applicant assesses the impacts with appropriate precaution and follows Natural England best practice guidance so that we can provide our integrity judgements based on appropriate information.</p> | |
| Compensatory measures | C42 | 5.5.5. sec 3.1 & 3.2 | <p>The Applicant gives an unhelpful and misleadingly brief outline of the current status and recent population trends for guillemot and razorbill.</p> | <p>According to Burnell et al. 2023 UK guillemot numbers have declined 8% since the last count (Seabird 2000) – halting an increase that has occurred since the Operation Seafarer counts (1969-70). The recent declines occurred mostly in the north (Scotland) and contrast with a marked increase in England including the south-west. For razorbill, despite slight declines in Scotland, overall numbers have increased 18% (since Seabird</p> | |

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | 2000), primarily at English and Welsh sites, including the south-west. | |
| | C43 | | Proposed VE compensatory measures | Please refer to our detailed comments on the ornithology compensation in Natural England Appendix D | |



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

Appendix D to the Relevant Representations of Natural England

Ornithology Compensation Case

For:

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

Planning Inspectorate Reference EN010115

21 June 2024




Appendix D – Compensation Case

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

- [APP-049] 5.5.3 Lesser Black Backed Gull Compensation - Evidence, Site Selection and Roadmap
- [APP-050] 5.5.4 Kittiwake - Evidence, Site Selection and Roadmap
- [APP-051] 5.5.5 Guillemot and Razorbill - Evidence, Site Selection and Roadmap
- [APP-052] 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plans
- [APP-053] 5.5.7 Kittiwake Implementation and Monitoring Plans
- [APP-054] 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plans
- [APP-055] 5.5.9 Lesser Black Backed Gull Compensation Site Suitability Report
- [APP-057] 5.5.11 Compensation Longlist and Shortlist

1. Introduction

As the derogations material differs in content/structure to a standard Environmental Statement chapter, our comments are provided in a different format to the other Appendices. Within this Appendix we provide our current position on our confidence in each proposed compensation measure, followed by key consenting concerns on the compensation plans and supporting documents. For clarity, we have also provided a summary RAG table for each measure alongside our position to highlight areas of agreement and outstanding concern. We have used the following criteria to assess each category in the summaries:

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|  | NE has broad confidence in this aspect of the measure, though there may be some uncertainties that need addressing. |
|  | There are significant concerns/uncertainties regarding this aspect of the measure, but they have the potential to be resolvable. |
|  | Major uncertainties remain with this aspect of the measure, which if not resolved would make compensation undeliverable. NE cannot be confident at this stage that the measure is deliverable. |

Natural England compensatory measures 'check list'

To assist developers and regulators, Natural England has developed a checklist of aspects that need to be described in detail in compensation submissions, to give confidence that the measures can be secured (see Annex D1). This checklist forms the basis of the summary table criteria.

Natural England’s Advice and Recommendations

1. Flamborough and Filey Coast Special Protection Area (FFC SPA) Guillemot and Razorbill Disturbance - Mitigation at colonies in the southwest of England.

The populations of guillemot and razorbill at FFC SPA are well-managed and therefore there is limited scope for compensation measure provision in the area. Consequently, the Applicant has focussed on providing compensation at guillemot and razorbill colonies in the southwest of England. The compensation site longlist selection process identified sites in the southwest of England in proximity to built-up areas or experiencing high levels of tourism and coastal recreational activities (i.e. recreational disturbance) which are not subject to targeted management. Following discussions with Natural England, the Applicant has considered measures such as the use of signage, visitor access statements, and coordination with water-based recreational/equipment hire organisations, to reduce disturbance to these southwest colonies.

Natural England consider the proposed measures to be technically feasible. However, at this stage there is limited evidence on site-specific issues and therefore the scope and practicability of management response. We advise that significant on-site monitoring will be required to establish current levels of disturbance (impact) to the colonies, as well as engagement to secure landowners and/or stakeholder cooperation. This means there is uncertainty regarding securing of relevant measures of the longlisted locations. Other measures e.g. wardening may be more appropriate depending on the findings of monitoring.

A second option being explored by the Applicant, is strategic compensation through participation in Defra’s Marine Recovery Fund (MRF). Whilst this may become an appropriate option in the future, at present there is uncertainty with this measure regarding implementation timescales and the level of contribution made by the Applicant.

Table 1: Summary position of compensation measure - FFC SPA Guillemot and Razorbill

| Compensation measure: FFC SPA Guillemot and Razorbill – disturbance mitigation at southwest (SW) colonies | |
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| Overall confidence in the measure | Natural England consider this measure to be technically feasible. Candidate locations have been identified but are not yet secured. Impact levels are not yet agreed, though are expected to be low. The Applicant needs to monitor sites to establish the current level of disturbance, and identify the measures needed to effectively mitigate it. |
| | NE Comments |
| Theoretical merit to deliver compensation | We are broadly supportive of the proposal to provide compensation for impacts on guillemot and razorbill through reduction of disturbance at small colonies in south-west England. However, although disturbance represents a general threat to guillemot and razorbill breeding success, the nature and severity of any impact is likely to vary significantly between individual colonies. We emphasise that it will require significant amounts of on-site monitoring and engagement with local experts to establish a baseline for the current level of disturbance and potential impact on colony productivity at any given site, and to establish what measures might effectively mitigate any disturbance occurring. This may include options beyond those identified e.g. wardening. We urge the |

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| | <p>applicant to update the Examination on any work carried out during the 2024 breeding season.</p> <p>Connectivity to the FFC SPA and the wider UK network of SPAs classified for guillemot is likely limited, although populations of both species from the south-west colonies may mix with birds from other SPAs in the non-breeding season, resulting in some potential for exchange. This would be of greater concern for a project with greater impacts on FFC SPA auks than Five Estuaries, but given the likely modest contribution made to the in-combination impacts, the likelihood of low connectivity does not mean a proportionate contribution of auks to the network cannot be made in this specific instance.</p> |
| <p>Technical feasibility</p> | <p>Natural England consider the measure to be technically feasible. However, the Applicant has not yet demonstrated whether sites can be easily observed or monitored in sufficient detail to establish annual counts and productivity estimates which can serve as a baseline for management interventions. Communication with landowners and stakeholders is still ongoing and it remains unclear how many sites will be able to participate. The proposal would also benefit from working alongside recreational stakeholders and the local authority.</p> <p>More research or investigation is required to establish the disturbance distance thresholds. This might be obtained by searching grey literature (e.g. a Plymouth University MSc project that recommended a minimum approach distance to guillemot colonies at Berry Head of 100m for boats and 200m for kayak users).</p> <p>We broadly agree with the monitoring approach, however, we emphasise that it is important that as much time as possible is spent observing the colonies to record disturbance events and their consequences, and to gather as much data as possible on direct causes of nest failure.</p> <p>For these cliff-nesting species, disturbance is most likely to come from recreational activities on the sea rather than from the cliff tops. It is certainly plausible that watercraft pose a significant disturbance risk to auk colonies in the southwest. For the purposes of compensation, it is essential that the amount of disturbance each colony is subjected to is monitored for an appropriate period of time in order to assess the likelihood that this is a factor affecting the success of that particular colony and to inform the scope of management.</p> <p>Investigating the most suitable set-back distances for watercraft will ensure local signage and codes of conduct convey the most appropriate evidence-based information to help bring about a behavioural change in the community.</p> |
| <p>Agreed compensation level</p> | <p>Impact levels are not yet agreed but are expected to result in a modest contribution to the in-combination total. For previous auk compensation cases Natural England has advised the use of 70% displacement and 2% mortality for establishing requirements, and repeat this advice here.</p> |
| <p>Scale/extent of measure</p> | <p>Reducing disturbance across multiple small colonies has the potential to adequately raise breeding numbers/productivity to deliver the required level of compensation, once impact levels and an appropriate ratio are agreed.</p> |

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| Timing: Deliverable before impact | | <p>Two years of monitoring are planned to establish baseline data, though we recommend this period should also be used to investigate suitable set-back distances for approaching water-borne vessels. This will help ensure appropriate signs and codes of conduct are in place well in advance of the operational phase of the OWF project.</p> <p>It is not clear whether the proposed management measures are intended to be in place three or four breeding seasons in advance of the impact occurring. We seek clarification on the proposed timetable and advise that the proposed implementation date will need to be secured in the DCO schedule.</p> |
| Location of measure | | <p>Candidate locations have been identified but are not yet secured, though negotiations are under way. Without secured agreement with the relevant landowners and stakeholder willingness to participate, there remains the risk that the project will not deliver.</p> |
| Long term implementation | | <p>Monitoring will be required for all stages of the proposed management programme. Stakeholder engagement will also need to be upheld throughout the project to ensure all new participants are aware of the issues. Again, we emphasise that it is important that as much time as possible is spent observing the colonies to record the number of disturbance events the colonies are subject to, and their consequences, which is needed to identify suitable set-back distances and also to gather as much data as possible on the direct causes of nest failure. This will require the seasonal employment of a suitably skilled observer(s) for the project's duration.</p> <p>Adaptive management options are available, include raising more awareness through public and stakeholder engagement, additional signage, wardening if that is not already part of the proposal etc.</p> |
| Success criteria/Ability to prove additionality | | <p>Success criteria have been established. However, establishing a robust and committed program of annual monitoring will be essential to identify trends accurately – see comments above.</p> |
| Suitable as sole measure for target species | | <p>The proposal has potential as a sole measure given the likely scale of impact. The proposal would also benefit from the Applicant working alongside recreational stakeholders and the local authority to achieve this. We also recommend, as a minimum, using signage in conjunction with public engagement to help deliver an effective code of conduct.</p> <p>We note and support the option of a collaborative approach between multiple developers to delivering compensation at south-west auk colonies, which could provide flexibility as well as efficiency.</p> |
| Key uncertainties | | |
| | | <ul style="list-style-type: none"> • Site specific evidence gathering has been largely desk-based and anecdotal to date, leaving some uncertainty about the need for and relevance of the proposed management measures at the candidate locations. • Landowner and stakeholder participation has not yet been secured and needs a high level of commitment and perhaps changes in working practice to enable success. • Access to sites for monitoring has not been fully assessed and may be difficult to do from the shore alone. |

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| | <ul style="list-style-type: none"> • Key parameters such as colony counts and breeding success that can be used to measure success may be difficult to record accurately. • Adaptive management will not be adopted should other pressures such as impacts associated with climate change (e.g. extreme weather events) negatively impact the compensation delivery. However, adaptive management could be crucial to help restore and build resilience in the local auk population in the face of change. |
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2. Flamborough and Filey Coast Special Protection Area (FFC SPA) Kittiwake – Artificial Nesting Structure (ANS)

The Applicant considers the provision of artificial nesting structures (ANSs) to be the most feasible measure for providing compensation of kittiwake, in addition the Applicant is looking at the option of participating in the MRF. The Applicant is seeking a formal agreement with Dogger Bank South (DBS) Offshore Wind Farm (OWF) to have a share of the kittiwake tower at Gateshead. We agree in principle with the proposed approach, although the nature of the collaboration with DBS is unclear, as is how the allocation of the measures to Five Estuaries will occur. Furthermore, it is also possible that the Gateshead Tower is too sparsely populated to compensate for losses attributed to any of the contributing projects. Therefore, advise that it is appropriate to continue with both compensation options, to safeguard delivery of the compensation.

Table 2: Summary position of compensation measure – FFC SPA Kittiwake

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| Compensation measure: FFC SPA Kittiwake – Artificial Nesting Structure (ANS) | |
| Overall confidence in the measure | The ANS measure is a technically feasible compensatory measure for kittiwake. There is uncertainty regarding collaboration and agreement between VE and Dogger Bank South (DBS) OWF with regards to sharing the ANS. Further uncertainty exists as to whether sufficient numbers of birds (a) will occupy the RWE ANS and (b) depending on how the measure is allocated, whether sufficient birds can be allocated to VE. |
| | NE Comment |
| Theoretical merit to deliver compensation | Should the SoS deem that kittiwake compensation is required for VE, Natural England agrees with the Applicant’s proposal to progress two options: (a) the Dogger Bank South (DBS) kittiwake tower (ANS) or (b) participation in the Defra strategic compensation/MRF. However, this agreement is subject to a detailed account being provided of the collaboration sought with DBS, and greater detail regarding how VE’s contribution will be secured. It is also unclear how the number of any kittiwake pairs occupying the ANS will be divided/shared between the participating projects – if that is the intention. The nature of the arrangement could, therefore, impinge on the ability of VE to contribute its compensation before the windfarm becomes operational. |
| Technical feasibility | The measure is technically feasible. No further comment required. |

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| Agreed compensation level | | The approach matches that used by Hornsea Three OWF and was agreed by Natural England. The compensation requirement has been derived based on the mean number of mortalities predicted by the collision risk analyses. However, Natural England advise that the compensation requirement should be scaled up to the 95% UCI and not be based on the central impact value. |
| Scale/extent of measure | | The scale/extent of the measure has the potential to be proportionate to the predicted losses. |
| Timing: Deliverable before impact | | The Gateshead tower is already constructed and so the lead-in time for installation is not an issue. The outstanding issue regarding timing is how the structure will be shared across the developers, and whether this has implications for VE's share of the benefits arising before its impacts occur. |
| Location of measure | | <p>Natural England's general advice to developers is that ANS should be located offshore. This reflects the likelihood that suitable nesting space is only an issue along parts of the English North Sea coastline, and the existing/planned provision of ANS in such areas by other developers requiring compensation. Whereas offshore there is likely to be both a shortage of long-term suitable nesting locations, and also the opportunity for colonising birds to forage in waters underutilised by coastal-nesting kittiwake.</p> <p>However, for projects with small impacts such as Five Estuaries, we consider it proportionate to consider onshore provision, particularly where the provision would be part of a larger structure. In that context, the location of the ANS at Gateshead is suitable for addressing the impacts of Five Estuaries. It is reasonable to conclude that the ANS here has the potential to contribute sufficient birds to the biogeographic population to address the impacts of Five Estuaries.</p> |
| Long term implementation | | A clear plan for the delivery of this measure has been established. Monitoring and adaptive management are included in the proposal. The Applicant will not commit to adaptive measure if the evidence suggests that the reason for lack of success is beyond the Project's control (e.g. climate change, prey availability), however, these could remain beneficial to help build resilience in the declining kittiwake population e.g. if heating becomes an issue, additional shading for ledges could be provided. |
| Success criteria/Ability to prove additionality | | Success criteria/ability to provide additionality have been established. |
| Suitable as sole measure for target species | | This remains dependent on the outcome of negotiations with DBS, how the measure is allocated across projects and whether adequate numbers of birds occupy the DBS ANS in a timely manner. To safeguard delivery of the compensation, the alternative option to support Defra's Marine Recovery Fund for an offshore ANS should be retained in the meantime. |
| Key uncertainties | | |

- The birds do not occupy the DBS kittiwake tower in sufficient numbers to adequately compensate losses incurred by not only DBS, but also VE (and any other contributing project).
- Negotiations with DBS fail or prevent VE from allocating breeding pairs to its compensation quota in a timely manner.

3. Alde Ore Estuary Special Protection Area (AOE SPA) Lesser Black Backed Gull (LBBG) – habitat creation/predator management

Predator management and habitat creation were identified as the most feasible compensation options for LBBG. Two potential sites for compensation delivery have been selected: VE02 on Orford Ness and Outer Trial Bank in the Wash. Site VE02 was selected for installation of a predator exclusion fence due to its accessibility, no requirement for water level management, connectivity to roof nesting LBBGs and proximity to the Norfolk Projects compensation site.

Outer Trial Bank is an artificial island created as part of a water resources scheme in the Wash. It is situated 126km from AOE SPA and within the mean-maximum foraging range for LBBG. On the island there are breeding colonies of LBBG and herring gull. Populations of both species have been reported to be declining. The presence of rats on the island are likely to be a contributing factor to decline of the LBBG population through predation, though this remains to be confirmed. As well as predator management, vegetation control is being considered.

In principle, Natural England agrees that the combination of measures proposed by the Applicant could deliver adequate compensation, subject to agreement on the impact levels and compensation targets, and appropriate permissions being secured. The proposed conservation actions being sought within the AOE SPA have the clear benefit of delivering compensation ‘in situ’, subject to potential impacts on the other designated sites at the location being managed down to acceptable levels; however, we also agree that measures to improve habitat on the Outer Trial Bank site could also deliver compensation and are less reliant on gulls colonising a specific location.

Hence, we feel that there are two complementary approaches to the compensatory measures proposed: the AOE SPA measure has the potential to directly repair the impacts on the designated site, but to some extent will be ‘in competition’ with other compensatory measures, whereas the Outer Trial Bank measure, whilst not directly benefitting the SPA, could restore a regionally important colony and, in turn, build more resilience for the wider network of coastal nesting LBBG in East Anglia.

Table 3: Summary position of compensation measure – AOE SPA LBBG

| |
|---|
| <p>Compensation measure: AOE SPA Lesser Black Backed Gull (LBBG) – Habitat Improvement/Predator Fencing and Control for Nesting LBBG</p> |
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| <p>Overall confidence in the measure</p> | <p>Technically, we advise that the measures are feasible and could deliver adequate compensation. However, at present we are unable to agree the number of additional breeding pairs required to achieve compensation.</p> <p>We also have concerns that a suitable level of mitigation has yet to be identified for the potential impacts of installing and maintaining the fence on the designated features of the Orford Ness – Shingle Street SAC and Alde-Ore Estuary Ramsar site and SSSI.</p> <p>There is also uncertainty regarding whether the birds will find and occupy the compensation site at AOE SPA, and until further monitoring is carried out, the pressures considered to be affecting gulls on the Outer Trial Bank are not confirmed. It is also uncertain whether the land at either proposed compensation site will be secured.</p> |
| | <p>NE Comment</p> |
| <p>Theoretical merit to deliver compensation</p> | <p>In principle, we agree that the approach taken by the developer could deliver adequate compensation, subject to agreement on impact levels and compensation targets, and appropriate permissions being secured. Having two distinct measures provides significant resilience e.g. the Outer Trial Bank site may also help safeguard compensation delivery should birds fail to occupy the AOE SPA site in a timely manner or in adequate numbers.</p> <p>We therefore recommend that the two options are progressed as a package of measures, not least given the potential requirements of North Falls OWF as regards LBBG. North Falls are due to submit their application later in the year; since the project is seeking similar compensation measures, we recommend liaison between both developers to facilitate an effective outcome being delivered that benefits both parties.</p> |
| <p>Technical feasibility</p> | <p>Adequate evidence has been provided to demonstrate technical feasibility for VE02, although without further data gathering and impact assessment as regards the impacts of the predator fence, we are not in a position to advise that impacts on the Orford Ness – Shingle Street SAC and Alde-Ore Estuary Ramsar site and SSSI will be adequately mitigated.</p> <p>As regards OTB, techniques for predator control and vegetation management are well established. However, OTB is a challenging site to access and sits in an area of high environmental sensitivity (The Wash SPA, SSSI and the Wash and North Norfolk Coast SAC). An appropriate access methodology and schedule for management has not been presented, and we consider an outline approach reflecting the above challenges should be submitted into the Examination in due course.</p> |
| <p>Agreed compensation level</p> | <p>The compensation level has not been agreed yet. The predicted magnitude of collision mortality on LBBG (using Natural England's recommended approach) requires clarification. The figure presented in the Report to Inform Appropriate Assessment (RIAA) appears to be erroneous – see comments in our Relevant Representations (Appendix C). Until this has been resolved, Natural England is unable to agree the number of additional breeding pairs required to achieve compensation.</p> <p>Furthermore, the compensation requirement so far presented has been derived based on the mean number of mortalities predicted by the</p> |

| | | |
|---|--|---|
| | | collision risk analyses. It is Natural England's advice that for compensation the requirement should be scaled up to the 95% UCI and not the central impact value. |
| Scale/extent of measure | | Once the scale of impacts on the LBBG AOE SPA population have been agreed, the adequacy of the proposed level of compensation can be assessed. Proposals presented so far suggest this is likely to be the case should both the AOE SPA and OTB measures are progressed, once the number of predicted annual losses have been finalised and compensation is delivered at a ratio of 3:1. |
| Timing: Deliverable before impact | | The proposal to protect a site within the AOE SPA using predator proof fence will rely on the birds finding and occupying the site. There is a risk that the birds may be reluctant to nest on the ground such that the site remains unused or only occupied several years after the fence has been erected. The proposal may, therefore, rely heavily on the Outer Trial Bank site to deliver the additional compensation for the interim losses (at least until the fenced site becomes active). As such, Natural England recommends that both proposals are undertaken to reduce the risk – providing resilience should one site fail to deliver. We also advise the fence be erected 4 years in advance of the operational phase to extend the lead in time as much as possible – noting this schedule was required and achieved by the Norfolk projects. |
| Location of measure | | As negotiations with landowners at both sites remain on-going, there is currently uncertainty whether or not either site can be secured for the lifetime of the project. Within the AOE SPA, the onshore ecology may also affect the location of the proposed predator-proof fencing – see Appendix J – Onshore Ecology. |
| Long term implementation | | We advise that this approach to compensation is broadly adequate. However, for the predator-proof fencing proposal in the AOE SPA, no schedule for fence maintenance and checks has been provided or details about how this will be done and by whom. Fence maintenance will be crucial to prevent predator incursions and a key component of on-going management throughout the year. Plans will also need to be in place to address fence breaches so these can be resolved quickly. For the proposal at Outer Trial Bank, workable plans for monitoring and biosecurity will need to be in place. |
| Success criteria/Ability to prove additionality | | On site monitoring to assess breeding numbers and productivity are proposed and deliverable. |
| Suitable as sole measure for target species | | See note above. There would be significant risk in relying on a predator proof fence as a sole measure, given the likely level of impact and the risk of 'mortality debt' accruing. This is because its success relies upon the birds finding and occupying the site in a timely manner. Should there be a delay of several seasons before the birds occupy the AOE SPA site, or the birds do not use it at all, then the compensation delivery will require the Outer Trial Bank plans to deliver the additional compensation in the interim. This risk has been highlighted by the lack of breeding gulls in the Norfolk/East Anglia projects compensation compound in the 2023 breeding season (or thus far in 2024). |
| Key uncertainties | | |

Uncertainty

- Permission to use the site within the AOE SPA and erect the predator proof fencing has not yet been secured. Landowner agreement remains under negotiation.
- The gulls may choose not to occupy the fenced site or do so at some point only after the wind farm becomes operational, thereby incurring a compensation deficit.
- Fence maintenance has not been described and it is unclear who and how this will be done for the duration of the project.
- Impacts on designated features of the SAC, SSSI and Ramsar site need to be better understood and mitigated.
- Use of the OTB site remains under negotiation with the landowner and so has not been agreed yet.
- It is possible that rat predation proves not an issue on OTB and therefore removing rats from the site makes no difference to the gull population size or breeding success.
- The following information will become available during examination and may influence the final choice of sites or management approach: a) the success of the SPR/Vattenfall scheme in the 2024 breeding season (expected Q4 2024); b) further data on the colony size and health at Outer Trial Bank (expected Q3 2024) and c) Information from TCE and Defra on how the Outer Trial Bank site could be secured and delivered (expected Q2 2024).
- The current primary limitation of population growth could be food supply and consequently the nesting habitat improvements proposed here could yield no measurable change in the number of breeding gulls at either site.

Table 4 Natural England's Detailed Advice and Recommendations

| NE Ref | Section | Natural England's Comment | Recommendation | Risk |
|--------------------|---------|--|----------------|------|
| Document Used: N/A | | | | |
| A1 | | Please refer to Appendix A DCO for our advice on how the proposed compensation measures will be secured and implemented. | N/A | |
| A2 | | Please also refer to Appendix C Offshore Ornithology for our advice on both the EIA & HRA aspects of the VE application. | N/A | |

Annex D1: Natural England check list for compensatory measure submissions

Natural England has developed a checklist of those aspects of compensatory measures that need to be described in detail when developers are submitting or updating applications where impacts on MPAs are anticipated. Whilst not exhaustive, it lists key areas where sufficient detail is needed to provide the Secretary of State with appropriate confidence that compensatory measures can be secured.

- a) What, where, when: clear and detailed statements regarding the location and design of the proposal.
- b) Why and how: ecological evidence to demonstrate compensation for the impacted site feature is deliverable in the proposed locations.
- c) For measures on land, demonstrate that on ground construction deliverability is secured and not just the requirement to deliver in the DCO e.g. landowner agreement is in place. For measures at sea, demonstrate that measures have been secured e.g. agreements with other sea or seabed users.
- d) Policy/legislative mechanism for delivering the compensation (where needed)
- e) Agreed DCO/DML conditions.
- f) Clear aims and objectives of the compensation
- g) Mechanism for further commitments if the original compensation objectives are not met – i.e. adaptive management.
- h) Clear governance proposals for the post-consent phase – we do not consider simply proposing a steering group is sufficient.
- i) Ensure development of compensatory measures is open and transparent as a matter of public interest, including how information on the compensation would be publicly available.
- j) Timescales for implementation especially where compensation is part of a strategic project, including how timescales relate to the ecological impacts from the development.
- k) Commitments to ongoing monitoring of measure performance against specified success criteria
- l) Proposals for ongoing 'sign off' procedure for implementing compensation measures throughout the lifetime of the project, including implementing feedback loops from monitoring.
- m) Continued annual management of the compensation area including to ensure other factors are not hindering the success of the compensation e.g. changes in habitat, increased disturbance as a result of subsequent plans/projects.



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

Appendix E to the Relevant Representations of Natural England
Benthic and Intertidal Ecology

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix E – Benthic and Intertidal Ecology

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

- [APP-040] 5.4 Report to Inform Appropriate Assessment
- [APP-041] 5.4.1 HRA Site Integrity Matrices
- [APP-042] 5.4.2 HRA Screening Report
- [APP-043] 5.4.3 HRA Screening Matrices
- [APP-044] 5.4.4 Summary of Designated Sites
- [APP-058] 5.6 Stage 1 Marine Conservation Assessment
- [APP-063] 6.1.3 EIA Methodology
- [APP-064] 6.1.3.1 Cumulative Effects Assessment Methodology
- [APP-069] 6.2.1 Offshore Project Description
- [APP-070] 6.2.1.1 Detailed Offshore Project Design Envelope
- [APP-072] 6.2.3 Marine Water and Sediment Quality
- [APP-074] 6.2.5 Benthic and Intertidal Ecology
- [APP-102] 6.2.5.4 Main Array and Export Cable Route – Environmental Features Report
- [APP-119] 6.5.5.1 Main Array – Benthic Ecology Monitoring Report
- [APP-120] 6.5.5.2 Export Cable Route and Intertidal Benthic Ecology Monitoring Report
- [APP-238] 9.8 Dredge Disposal Site Characterisation Report
- [APP-239] 9.9 Outline Cable Burial Risk Assessment
- [APP-242] 9.12 Outline Cable Specification and Installation Plan
- [APP-243] 9.13 Margate and Long Sands SAC Benthic Mitigation
- [APP-264] 9.31 Schedule of Mitigation – Routemap
- [APP-265] 9.32 Offshore in Principle Monitoring Plan

1. Natural England's Advice and Recommendations

A summary of Natural England's key concerns in relation to benthic and intertidal ecology is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

In order to reduce the repetition in our advice, the advice and recommendations within this appendix, notably regarding sandbanks and sandwaves are applicable to and should be read in conjunction with, the advice presented the Marine Geology, Oceanography and physical process Appendix B.

Glossary of Acronyms and Abbreviations

| | |
|---------|--|
| AOS | Area of Search |
| DCO | Development Consent Order |
| dML | Deemed Marine Licence |
| ECC | Export Cable Corridor |
| EIA | Environmental Impact Assessment |
| HRA | Habitats Regulations Assessment |
| HVDC | High Voltage Direct Current |
| LSE | Likely Significant Effect |
| MDS | Maximum Design Scenario |
| NERC | Natural Environment and Rural Communities |
| OTE SPA | Outer Thames Estuary Special Protection Area |
| RIAA | Report to Inform Appropriate Assessment |
| SAC | Special Area of Conservation |
| SIS | Secretary of State |
| SPA | Special Protection Area |
| WCS | Worst Case Scenario |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

Table 1 Summary of Key Issues – Benthic and Intertidal Ecology.

| NE Ref | Summary of Key Concerns | Natural England's Recommendations to Resolve Issues. | Risk |
|--------|--|---|------|
| A1 | <p><u>In-sufficient evidence</u> Natural England is concerned that the methods and information used to determine maximum length of cable protection within Margate and Long Sands Special Area of Conservation (MLS SAC) are not transparent and appear to be high level, and as such, it is not clear how realistic this Maximum Design Scenario (MDS) is. Natural England advises that due to uncertainty (reasonable scientific doubt) we cannot advise the exclusion of an Adverse Effect on Integrity (AEoI). Therefore, there is a need to further quantify the impact to inform the levels of compensation required.</p> | <p>Natural England advises that further information is required to provide the necessary confidence in the MDS/Worst Case Scenario (WCS) for cable protection within the SAC.</p> | |
| A2 | <p><u>Impacts on SPAs</u> Natural England notes that the Applicant's current assessments of pressures/impacts on supporting benthic habitats for Special Protection Area (SPA) features and impacts to prey availability lacks rationale and robustness.</p> | <p>Natural England advises that full consideration of the likely nature, extent, duration, and significance of impacts upon SPA supporting habitats and prey availability is required to inform a robust assessment of the likely impacts upon designated ornithological features.</p> | |
| A4 | <p><u>Worst Case Scenario – O&M</u> Natural England highlights that the application documents, including the Report to Inform Appropriate Assessment (RIAA) provide contradictory information relating to the likely requirement for 'additional' scour and/or cable protection over and above that stipulated within the maximum design. It is therefore not clear whether the potential for the addition of further scour/cable protection has been included within the calculations for the Maximum Design/Worst Case Scenario for cable protection within the SAC.</p> | <p>Natural England advises that, the relevant parts of all benthic Environmental Impact Assessment (EIA)/Habitats Regulations Assessment (HRA) assessment conclusions will require review to address this potential inaccuracy in the maximum design/worst case scenario. There is also likely to be implications for level of compensation required.</p> | |

| NE Ref | Summary of Key Concerns | Natural England's Recommendations to Resolve Issues. | Risk |
|--------|---|--|------|
| A6 | <p><u>RIAA</u> Natural England does not agree with the Applicant's conclusion of No AEol in relation to MLS SAC which has been designated for Annex I Sandbanks. Acknowledging the Secretary of State decisions for Hornsea Project Three, Norfolk Boreas, Norfolk Vanguard and Dudgeon and Sheringham Shoal where it was determined that the placement of cable protection would have a lasting impact over the lifetime of the project, and potentially beyond, such that an adverse effect alone or in-combination could not be ruled out. The overall condition of the designated site features predicted to be impacted by those protects is not dissimilar to MLS SAC. Thus, we advise that the placement of cable protection within MLS SAC is likely to hinder the conservation objectives for the site and therefore an adverse effect on Integrity can't be excluded beyond reasonable scientific doubt alone or in-combination.</p> | <p>Natural England refers the ExA to our advice on the RIAA. While we agree to disagree with the Applicant on the scale and significance of the impact; we welcome the inclusion of the without prejudice benthic compensation measures. We advise that every effort should be made to reduce the impacts through the adoption of robust mitigation measures. Natural England advises that should further commitments and/or change to project design be made by the Applicant that the impact assessment should be updated.</p> | |
| A7 | <p><u>Mitigation</u> Natural England advises that mitigation measures fail to consider the potential presence of Section 41 Natural Environment and Rural Communities (NERC) Act 2006 Habitats</p> | <p>Natural England advises that where possible impacts to Section 41 NERC Habitats are avoided and due consideration is demonstrated</p> | |

Table 2 Natural England's Detailed Advice and Recommendations – Benthic and Intertidal Ecology.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|---|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Project Parameters - Document(s) Used: [APP-069] 6.2.1 Offshore Project Description [APP-070] 6.2.1.1 Detailed Offshore Project Design Envelope [APP-238] 9.8 Dredge Disposal Site Characterisation Report [APP-239] 9.9 Outline Cable Burial Risk Assessment [APP-242] 9.12 Outline Cable Specification and Installation Plan | | | | | |
| Project Description | E1 | APP-069 6.2.1 Section 1.14.16 and 1.14.7 6.2.1.1 Table 1.31 | Natural England advises that there is insufficient detail in particular on proposed Operation and Maintenance relating to the potential placement of scour prevention/cable protection over the lifetime of the project. There is currently no 'workings out' as to how total seabed disturbance has been calculated from cable repairs and replacement e.g. what is the max. length of any one cable repair noting that the total number of repairs is 9 and the total length is 5,000m. And how a figure of 20% for cable/sour replacement has been determined and assessed. | Natural England advises that further details is provided on the parameters for O&M activities including how total amounts have been determined. Natural England advises that previous Offshore Wind Farm applications have assessed for quantities of additional scour and/or cable protection outside of benthic SACs is for the replenishment of scour prevention/cable protection laid during installation within a 10-year period as long as the overall footprint is not increased. However, once construction is completed then a further marine licence would be required for the placement of external protection with benthic SACs. Also please see Annex I to this Appendix on Natural England position paper regarding cable protection on the placement of cable protection. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|-----------------------------------|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Natural England's Position on Worst Case Scenario or Scenarios | E2 | APP-242 9.12 APP-239 9.9 | <p>It is not clear to Natural England what information has been used to determine the maximum length of cable protection required within MLS SAC (i.e. 900 m). It is also not clear whether the potential for the addition of further cable protection has been considered and included within the calculations for MDS/WCS for scour protection within the SAC.</p> <p>These documents are written from an engineering perspective rather than from an ecological one trying to understand the impacts from sub optimally buried cables and potential impacts to designated sites.</p> | <p>In order that a meaningful assessment can be made, Natural England require the applicant to provide a transparent justification for the WCS quantification of benthic impacts within MLS SAC, drawing upon previous experience and available information about the ground type along the ECC route. The WCS should also include any possible post-construction measures such as the placement of additional scour replenishment.</p> <p>Natural England would welcome additional information relating to the WCS volume of cable protection (as well as the total cable length) within Margate and Long Sands SAC so that it is clear to all parties what the thresholds are. Natural England queries how the regulator will be certain that the WCS within the SAC has not been exceeded? If the Secretary of State (SOS) is minded to consent the project, further DCO/dML restrictions may be appropriate.</p> | |
| | | APP-070 6.2.1.1 | <p>Natural England advises that without further detail being provided it is hard to determine if the WCS is realistic. For example,</p> <ul style="list-style-type: none"> • it is not clear if the boulder clearance impacts include | <p>Natural England would welcome further updates to 6.2.1 and 6.2.1.1. to inform review of the impact assessments. Until this happens, we believe that there is reasonable scientific doubt regarding the activities with the MLS SAC which have</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|----------------|---|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>depositing of the boulders and if yes in areas with similar boulders.</p> <ul style="list-style-type: none"> • it is not clear if the area of seabed impacts from UXO clearance has been assessed and the likely recovery. • In table 1.6 trial trenching is proposed but location, size and timing are not provided (as raised in 4.2.11 of Cable specification and Installation plan) • Table 1.27 It is not clear how 500m³ per tidal cycle has been determined for MDS for HDD mud • Table 1.28 It is not clear if, as with other projects with HDD at the landfall, cable protection is required at the exit pit locations • Section 4.7.4 of doc 9.12 it is not clear why the exist pits are so large. | the potential to hinder the conservation objectives for the site both Alone and in-combination | |
| | | APP-238 9.8 | Natural England advises that parameters to determine the dredge disposal criteria other than within the same sediment type have not been included and therefore the WCS may not be realistic. | Natural England advises that in addition to being within same sediment type, commitments should also be made and secured to avoid priority areas and/or key areas of supporting habitats for mobile interest features of designated sites | |
| | | APP-238 9.8 | Natural England highlights that evidence to support VE disposal activities includes those permitted and assessed in 2008 | Natural England highlights that whilst we do not believe it will make a material difference to the assessment for this | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|-----------------------------------|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | and due to the age of this evidence it cannot longer be relied upon e.g. LID OWFs | project, the evidence used would not normally be supported by the SNCBs as set out in the OWF best practice guidance | |
| | | APP-238 9.8 Table 2.1. and 4.2.16 | Natural England notes that there is no differentiation between disposal inside and outside of benthic designated sites. And what is being deposited and how to ensure that mitigation measures are fit for purpose | Natural England advises that as mitigation for within designated sites should include deposition in areas with same sediment size/characterisation and use of a fall pipe rather than surface release. | |
| | | APP-238 9.8 6.2.15, 6.2.24 | Natural England advises that all impact pathways should consider both EIA and HRA issues, with any disposal not interrupting sediment transport. | Natural England advises that mitigation measures should be considered from an EIA and HRA perspective and that monitoring should be secured to assess the residual impacts are as predicted and if not, remedial action is taken | |
| | | APP-242 9.12 4.5.2 | Natural England advises that further mitigation measures should be adopted to differentiate between inside and outside of designated site unless a precautionary approach will be taken to all installation and operation activities within the assessment. | Natural England advises that the impacts from all types of external cable protection should be addressed refine down options and allow for a realistic WCS to be assessed. | |
| Baseline Characterisation - Document(s) Used: [APP-074] 6.2.5 Benthic and Intertidal Ecology | | | | | |
| Survey Data Acquisition | | 6.2.5 | Natural England has no comments to make that would result in a material difference to benthic receptors at this stage of the process. Therefore, unless there is a change in the project design | N/A | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|-------|---|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | parameters, we will provide no further comment on the data during examination | | |
| Data Gaps | | 6.2.5 | Natural England has no comments to make that would result in a material difference to benthic receptors at this stage of the process. Therefore, unless there is a change in the project design parameters, we will provide no further comment on the data during examination | N/A | |
| Analysis, Modelling and Reporting | | 6.2.5 | <p>Natural England has no comments to make that would result in a material difference to benthic receptors.</p> <p>Therefore, unless there is a change in the project design parameters, we will provide no further comment on the data during examination</p> | N/A | |
| Environmental Impact Assessment - Document Used: [APP-074] 6.2.5 Benthic and Intertidal Ecology [APP-243] 9.13 Margate and Long Sands SAC Benthic Mitigation [APP-040] 5.4 Report to Inform Appropriate Assessment | | | | | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|--|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Identified impacts | | APP-074 6.2.5 APP-040 5.4. Para. 11.2.34 | Natural England is concerned that there is a risk of impacting potential Annex I reef features located within MLS SAC and as a NERC (2006) Section 41 Priority Habitats. We highlight that whilst presently Annex I reef is not a listed feature of MLS SAC, there is the potential for it to become a future should its presence be demonstrated. Therefore, we advise that the proposed VE OWF should not preclude its future designation. | Natural England advises that mitigation measures should be adopted to avoid impacts to Sabellaria spinulosa reef from the installation of VE OWF and associated O&M activities. | |
| Methodology | | APP-074 6.2.5 Sections 5.12 and 5.13 (e.g. 55.11.69) | Natural England welcomes consideration of potential impacts on Special Protection Area (SPA) where the benthic habitats serve as supporting habitats for bird features, including the Outer Thames Estuary SPA (OTE SPA) Red-throated diver populations which are present in the project red line boundary and vessel transit route from several local ports which may locate the projects O&M facility. However, we advise that the Applicant's current assessments of pressures/impacts on SPA features is lacks rationale and robustness. | Natural England advises that full consideration of the likely nature, extent, duration, and significance of impacts upon SPA supporting habitats is required to inform a robust assessment of the likely impacts upon designated ornithological features. | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | | APP-243 9.13 | Natural England notes that the Applicant has ruled out the option to adopt High Voltage Direct Current (HVDC) within the Export Cable Corridor (ECC) to mitigate | Natural England advises that that the Applicant considers further mitigation measures to reduce the project impacts | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|--|---|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | Table 2.1 | <p>impacts on sandbank features, which would reduce the number of cables, based on 'project timescales and supplier issues.</p> <p>In addition, we draw your attention to Annex 2 of this Appendix where the progression of a coordinated approach discussed in more detail</p> | from transmission asset installation and maintenance. | |
| Assessment Conclusions | | APP-074 6.2.5 | Natural England disagrees with the Applicant on the significance of the impacts to MLS SAC interest features and priority habitats. | Please see comments on the RIAA. | |
| HRA - Document Used: [APP-040] 5.4 Report to Inform Appropriate Assessment [APP-041] 5.4.1 HRA Site Integrity Matrices [APP-042] 5.4.2 HRA Screening Report [APP-043] 5.4.3 HRA Screening Matrices [APP-044] 5.4.4 Summary of Designated Sites [APP-243] 9.13 Margate and Long Sands SAC Benthic Mitigation | | | | | |
| Screening | | 5.4, 5.4.1, 5.4.2, 5.4.3, 5.4.4. | Natural England advises that all relevant sites have been screened in. | N/A | |
| | | APP-040 5.4 | Please see below, where we disagree with No AEoI we also disagree with the Likely Significant Effect (LSE) screening. | N/A | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Assessment | | APP-040 5.4 Section 3 | Natural notes that the updated Renewable Energy National Policy Statement has not been taken into consideration and neither has the updated Defra Policy to support Best Practice Guidance for benthic compensation in MPAs | Natural England advises that the Applicant give further consideration to these policy documents to support the Secretary of State in their decision making. | |
| | | APP-040 5.4 Table 6.1, Para 11.2.5 4, 11.2.8 8 etc | Natural England notes that the Report to Inform Appropriate Assessment quotes several different figures when describing the worst-case total percentage of Margate and Long Sands SAC predicted to be impacted by the installation of scour protection. Figures range from 0.0008% to 0.02%. It is therefore not clear what figure the assessments and their conclusions have been based upon and what the accurate MDS and WCS figure is. | Natural England advises that further clarification from the Applicant is required (in line with the advice provided within this appendix) to confirm what percentage of the total SAC, as well as percentage of the sandbank feature, has been used to inform the assessments and what the accurate MDS/WCS figures are with appropriate justification provided where relevant. Once this is provided the RIAA and relevant ES should be updated. | |
| | | APP-040 5.4 Section 7.6 | Natural England is concerned that there is not an Operation and Maintenance plan that clearly sets out O&M activities. In addition, there uncertainties set on in this Appendix in relation to requiring more detail on O&M activities before we can advise on the sufficiency of the RIAA in assessing the impacts alone and in-combination. | Natural England advises that further detail is required on O&M activities before we can advise on the scale and significance of impacts. | |
| | | APP-040 5.4 | Natural England queries why there is limited linkage to the conservation objectives for MLS SAC. | Natural England advises that once the draft updates to the conservation advice packages for MLS SAC is available the | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | Para. 11.2.5 Section 12 | Please note that the conservation advice package for MLS SAC is under review and will be updated in draft form in Autumn 2024 with aim to finalise in March 2024 | RIAA and Benthic ES chapter will need to be updated | |
| | | APP-040 5.4 11.2.59 and 11.2.18 | <p>Natural England notes that the application documents, including the Report to Inform Appropriate Assessment provide contradictory information relating to the likely requirement for 'additional' scour protection over and above that stipulated within the maximum design. For example, in paragraph 11.2.59 of the RIAA states 'should additional protection be required', whilst paragraph 11.2.18 states 'Scour will therefore only occur if and where scour protection has not been applied'.</p> <p>It is therefore not clear whether the potential for the addition of further rock protection due to secondary scour has been considered and included within the calculations for the MDS/WCS for scour protection within the SAC. It is therefore not clear whether the RIAA appropriately considers the MDS/WCS</p> | <p>Given inconsistencies in the information provided by the Applicant, Natural England requires clarification as to whether additional scour protection may be required, and whether any such potential requirements have been included when defining worst case and Maximum Design Scenarios.</p> <p>Where there is potential for the requirement of additional scour protection, and such requirements have not been included WCS/MDS, the relevant parts of all benthic EIA/HRA assessment conclusions will require review.</p> | |
| In- combination Assessment | | APP-040 5.4 | Natural England notes that the list of projects that have a benthic compensatory requirement doesn't | Natural England advises that this section of the RIAA is updated to provide the | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | 2.5.2 | <p>include Dudgeon and Sheringham Extension Projects OWFs which have impacts similar to VE.</p> <p>An overarching comment for Section 2 is that East Anglia 1N and East Anglia 2 hasn't been included in the assessment</p> | necessary context for the Secretary of State's HRA | |
| | | APP-040 5.4 Table 9.2 Table 9.5 Para. 12.2.4 | Natural England notes that PINS Advice Note 11 has been used to determine Project TIERs. However, the SNCBs advice that these TIERs do not align with best practice guidance and therefore do on take account of ongoing impacts from some projects. | Please refer to Natural England's Best Practice Guidance Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase III Expectations for data analysis and presentation at examination for offshore wind applications. for the SNCBs advice on using Tiers for scoping project into in-combination assessments | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | | APP-040 5.4 9.13 | <p>Natural England advises that further mitigation measures should be explored.</p> <p>We note that in Table 2.1 of the MLS SAC Mitigation document (9.13) is the same mitigation as included within the derogations case document. We highlight that there is insufficient detail included within name documents to have certainty that cable can be buried and will remain buried without the need for cable</p> | Please see comments in this Appendix where we highlight that further mitigation measures should be considered. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>protection. It is also noted that no cable protection has been excluded consistency across all documents to provide the necessary mitigation and ensure removal at the time of decommissioning.</p> <p>We also advise that the shortest route through the SAC doesn't necessary reduce the impacts. It is important to also consider avoiding the most sensitive habitats and to reduce the impacts and/or enable feature recovery.</p> | | |
| Assessment Conclusions | | APP-040 5.4 Table 11.1 | <p>Natural England advises that the following need further consideration in the table</p> <ul style="list-style-type: none"> - UXO clearance impacts along cable route on benthic receptors - Potential need for cable protection at the HDD exit pits - Details of each cable repair rather than as a collective | Natural England advises that the EIA and RIAA are updated to consider these impacts | |
| | | APP-040 5.4 Para 11.2.3 3 | <p>Natural England welcome that only the northern part of MLS SAC is being impacted rather than the middle of the SAC. But we do highlight that the sandbank feature extends beyond the site boundary and that impacts from outside the site might have indirect impacts to the SAC</p> | Natural England advises that all impacts are reviewed, and the EIA and RIAA assessed accordingly. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | APP-040 5.4 Para. 11.2.3 7 | Natural England notes that the RIAA doesn't fully consider the sediment deposition from sandwave levelling to ensure that deposition is in the same sediment type. | Natural England advises that any proposed mitigation is taken through to RIAA. | |
| | | APP-040 5.4 Para. 11.2.5 4 | <p>Natural England notes that within the RIAA it is argued that the impacts are small.</p> <p>We direct you to Annex 3 of this Appendix where we provide further advice on small scale losses within the SAC.</p> <p>We also draw your attention to the recent Dudgeon and Sheringham Shoal decision (2024) which required MEEB for less cable protection with the Cromer Shoal Chalk Beds Marine Conservation Zone than is proposed for this project within MLS SAC.</p> | Natural England advises that the Applicant and Natural England agree to disagree on this matter and therefore we provide no further advice into examination unless there are changes to the project design parameters | |
| | | APP-040 5.4 Para 11.2.6 0 | Natural England does not agree with the Applicants conclusion of No AEol in relation to MLS SAC which has been designated for Annex I Sandbanks. Natural England consider that any placement of scour prevention/cable protection constitutes a lasting impact | Natural England do not agree with the Applicants conclusion of No AEol in relation to MLS SAC which has been designated for Annex I Sandbanks. As previously advised, Natural England consider that any placement of scour prevention/cable protection constitutes a lasting impact over the lifetime of the | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | over the lifetime of the project which is potentially irreversible. | <p>project which is potentially irreversible. Unless it can be demonstrated otherwise, the scale of impacts is likely to hinder the 'maintain' habitat feature conservation objective of the site whilst the protection is in situ, and potentially beyond, due to limitations in the ability to remove the infrastructure.</p> <p>The Secretary of State decision for Hornsea Project Three, Norfolk Boreas, Norfolk Vanguard and DEP and SEP supports this position with a requirement to provide compensation measures.</p> | |
| | | APP-040 5.4 11.2.9 2 | Natural England notes that the Applicant has concluded that changes to physical processes within Margate and Long Sands SAC because of the installation of cable protection will be localised, small scale and that 'benchmarks for impacts to the features will not be reached', and as a result have concluded no potential for an AEol as a result of this pressure. It is not clear what 'benchmarks' the applicant is referring to here, or what evidence is being used to support the conclusions of insignificant effects. Natural England refers to the Margate and Long Sands SAC Supplementary Advice on Conservation Objectives (SACOs) which | Natural England would welcome any further work the Applicant can do to provide a robust assessment of the potential Worst-Case impact on benthic communities within MLS SAC sandbank feature as a result of changes to physical process from potential parallel lengths of cable protection across all cables. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>include targets relating to supporting processes including "Maintain all hydrodynamic and physical conditions such that natural water flow and sediment movement are not significantly altered or prevented from responding to changes in environmental conditions".</p> <p>Natural England considers that any placement of cable protection and associated changes to physical processes and benthic communities could constitute a lasting impact over the lifetime of the project which is potentially irreversible. Natural England therefore disagrees with the Applicants conclusion and consider that an AEoI cannot be ruled out based on the evidence presented.</p> | | |
| <p>Priority Habitats and Species listed under Section 41 list of the Natural Environmental and Rural Communities (NERC) Act, 2006 - Document Used: [APP-074] 6.2.5 Benthic and Intertidal Ecology [APP-102] 6.2.5.4 Main Array and Export Cable Route – Environmental Features Report [APP-119] 6.5.5.1 Main Array – Benthic Ecology Monitoring Report [APP-120] 6.5.5.2 Export Cable Route and Intertidal Benthic Ecology Monitoring [APP-243] 9.13 Margate and Long Sands SAC Benthic Mitigation [APP-265] 9.32 Offshore in Principle Monitoring Plan</p> | | | | | |
| Potential impact pathways where further info/assessment required | | APP-102 6.5.2.4 and | Natural England notes that the biotope 'A4.231 Piddocks with a sparse associated fauna in sublittoral very soft chalk or clay' has been identified in both | Natural England advises that the Applicants EIA and subsequent proposed Benthic Mitigation and Offshore In-Principle Monitoring Plan would benefit | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | APP-120 6.5.5.2 | the offshore area of the ECC, and in the northern array. This biotope (and peat and clay exposures more generally) is considered likely to be irreplaceable (<u>Defining Irreplaceable Marine Habitats - NECR474 (naturalengland.org.uk)</u>) and is also a priority habitat under Section 41 of the NERC Act 2006. | from appropriately considering the importance and rarity of peat and clay exposures, and every effort should be made to avoid impact to these priority habitats where possible. This is particularly the case where habitats support rare and/or irreplaceable communities such as boring piddocks. | |
| | | APP-102 6.5.2.4 APP-120 6.5.5.2 APP-119 6.5.5.1 | Natural England highlights that the EIA fails to describe how elevation of <i>Sabellaria spinulosa</i> tube structures has been measured in order to inform the 'reefiness' assessment. Photograph 200867_FE4_04_09 within the report appears to show <i>Sabellaria spinulosa</i> structures which are elevated above the seabed potentially in excess of 2 cm and covering an area of seabed > 30% and therefore potentially constituting biogenic 'reef' as defined by Gubbay (2007) which would represent a Priority Habitat under Section 41 of the NERC Act 2006. | Natural England would welcome information on the methods used to determine elevation of biogenic structures to determine 'reefiness'. Where there is subjectivity in the process that cannot be sufficiently minimised, we would welcome the application of a precautionary approach, and subsequent reconsideration of the data and evidence to determine the potential for the presence of 'reef' as defined by Gubbay (2007) (and therefore Priority Habitat under Section 41 of the NERC Act 2006). | |
| | | APP-243 9.13 APP-265 9.32 | Natural England highlights that priority Habitats as listed under Section 41 of the NERC Act 2006 have not been appropriately considered within the EIA, Benthic Mitigation Plan, or the Offshore In-Principle Monitoring Plan. | Natural England advises that the adoption of mitigation measures via the Applicants Benthic Mitigation Plan, and associated monitoring in the Offshore In-Principle Monitoring Plan are further considered in order that impacts (particularly permanent loss), on all Section 41 Habitats are avoided and/or reduced wherever feasible | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | | through mitigation measures such as micro-siting. | |
| Cumulative Impacts Assessment (CIA) | | APP-074 6.2.5 | Natural England advises that in the event that further Priority Habitats are identified during the examination as a result of the above, assessments will require updating. | Natural England advises that in the event that further Priority Habitats are identified as a result of the above comments, and mitigation cannot avoid those habitats, cumulative impact assessments will require updating. | |

Annex 1: Cable protection paper

Natural England advice on cable protection assessment for offshore windfarms and inclusion in marine licenses

Natural England (NE) has drafted this note in order to provide clarity on how we consider cable protection to be covered in marine licences, and what information needs to be provided in an assessment to support those licences. The advice applies to all marine license applications for cable protection, at various stages of the project lifecycle, not just those considered under the NSIP consenting process. Much of the advice is also applicable to interconnector cables. This is intended to complement the Marine Management Organisation's (MMO) position on scour and cable protection licensing requirements during the Operation and Maintenance (O&M) phase.

Section 1: Application stage

In the Environmental Statement (ES) for a project there must be a full assessment of the worst-case scenario for cable protection to enable a decision to be made regarding the impacts of a project over the lifetime and in combination with other impacts and activities. In the case of European Marine sites (SACs and SPAs) the assessment must contain sufficient information to allow it to be ascertained (by the process of "appropriate assessment,"¹ and beyond reasonable scientific doubt) whether the project will have an adverse effect on the integrity of the site. If an absence of adverse effect on integrity cannot be demonstrated – see footnote 2.

It is acknowledged that the worst-case scenario used for lifetime predictions is not the most desirable environmentally and, as more project specifics and environmental data emerge post-consent, the structure of plans and proposals can be amended to allow for the impacts to be reduced. This is in line with the avoid-reduce-mitigate hierarchy, which should be followed in relation to environmental impacts.

Not everything that is assessed in the Environmental Statement is permitted through the Deemed Marine Licence (DML) for the project, as some aspects require further updating and consultation (i.e. requirement to provide a scour and cable protection installation plan pre-construction, which sets out what is actually permitted). However, provision of the full project lifecycle information in the Environmental

Statement at this stage is required to inform and support the decision making for the project and to provide a level of comfort that the lifetime impacts have been considered.

Where cable protection is proposed within an SAC or SPA it should be assumed that there will be a likely significant effect due to lasting habitat loss from the cable protection and an “appropriate assessment” would need to demonstrate that there would not be an adverse effect from the proposal. This is likely to be challenging in an SAC designated for its benthic habitats, therefore all alternatives will need to be fully explored. If it is not possible to avoid an adverse effect, then the derogations route under Article 6(4) of the Habitats Directive² could be considered. Similarly, a Marine Conservation Zone (MCZ) assessment would be requirement where cable protection was proposed in an MCZ. For clarity and to fit with subsequent marine licensing requirements, Natural England advise that this information should be presented separately for the following phases with the impacts assessed for each phase and together in total:

Amount of cable protection to be laid during the construction phase³ of the project.

Amount of cable protection required for the maintenance of that laid during construction over the lifetime of the project.

Amount of additional/ new cable protection that may be required to protect assets that become exposed during operation of the windfarm.

Total amount of cable protection to be left in situ at the time of decommissioning (this may be the total of the above).

For cable protection to be laid during construction under the DML, an in-principle scour and cable protection plan should be provided as part of the application. This should be updated and resubmitted pre-construction and should reflect up to date information informed by any new survey data, the cable burial risk assessment and additional information in relation to a navigation risk assessment and alternatives. Use of cable protection which leads to lasting habitat loss should be the final consideration after other alternatives have been exhausted and must be minimised as much as possible to reduce environmental impacts.

Where impacts are within a Marine Protected Area (MPA⁴), the assessment should consider the total amounts of cable protection proposed to be laid across the phases outlined above as an area and percentage of the MPA feature to be impacted. The significance of the proposal then needs to be considered against the Conservation Objectives for the site. Natural England's position paper on 'Small Scale Losses' sets out what is required by the Applicant to demonstrate that there are no Adverse Effects on site Integrity (AEoI).

Natural England will advise that a condition should be applied to all DMLs with wording similar to that outlined below, which will require return of information in relation to the as-built scenario, including the location, volume, area and coordinates of the cable protection laid.

Not more than 4 months following completion of the construction phase of the authorised scheme, the undertaker must provide the MMO and the relevant statutory nature

conservation bodies with a report setting out details of the cable protection used for the authorised scheme.

(2) The report must include the following information—

(a) location of the cable protection.

(b) volume and area of cable protection; and

(c) any other information relating to the cable protection as agreed between the MMO and the undertaker.

(3) For any subsequent deployments of cable protection following the completion of construction, the undertaker will provide an updated report as defined in (1) and (2) not more than 4 months following deployment of the cable protection.

Section 2: Construction and maintenance

The period of construction finishes when developers notify the MMO of the end of construction. However, there will need to be agreement on what is considered the construction period given that this could stretch several years. The cable protection laid during the period of construction is permitted under the DML and restricted to total volumes within the DML, although every effort should be made to minimise these volumes going into construction through the avoid-reduce-mitigate hierarchy.

As outlined above, the in-principle scour and cable protection plan provided during the application phase should be updated and resubmitted pre-construction and should reflect up to date information informed by any new survey data, the cable burial risk assessment and additional information in relation to a navigation risk assessment and alternatives.

Natural England considers it is permissible to maintain cable protection that was placed at time of construction for the lifetime of the project through an Operations and Maintenance plan by adding additional cable protection to that which was laid during construction. We support the MMO's position that under an operations and maintenance plan submitted under the DCO maintenance material placement cannot exceed the seabed footprint of the cable protection laid during construction. As per the MMO's advice various timescales and information requirements will apply to these plans. A condition requiring return of information in relation to the as built scenario including the location, volume, area and coordinates of the cable protection laid should be secured as part of these plans.

Section 3: Operational phase

Natural England considers that any new/additional cable protection to be laid during the operational lifetime of the windfarm is not permitted under the DML and requires a separate marine licence. We acknowledge that there is a desire for longer term licences and support the MMO's position that 10-year licences can be considered for laying of additional cable protected in areas outside MPAs.

This is not to say that cable protection will not be permitted over the lifetime of the project (out with MPAs); but a separate marine licence process (to that of the DCO/DML) is advised to ensure that proposals can be adequately assessed using up to date information on which to base the assessment (which may be several years after the Environmental Statement data was collected), and enable sufficient transparency of decision making and stakeholder consultation. Data less than 5 years old will be required to support laying of additional cable protection along with descriptions of the seabed habitat and information regarding what cable protection has been laid to date. Justification will need to be made as to why cable protection is necessary considering risk and alternatives and every effort made to minimise amounts required to reduce environmental impact.

The amount of cable protection proposed in the new licence application should not be more than that assessed overall in the ES and should ideally be reduced to reflect the reduction in parameters from the Rochdale Envelope. Any reduction in design parameter should be reflected in this licence e.g. decreased number of cables installed therefore proportionally less cable protection is permitted to reflect this.

Should the volumes proposed be greater than that assessed in the ES at the time of consenting then it will be necessary to redo the assessment for cable protection that was undertaken in the ES with up-to-date information and parameters to inform the licence application.

Section 4: Cable protection within MPA during the operational phase of a project

Natural England considers that replenishment of cable protection/scour prevention over the life time of the projects which doesn't increase the footprint of existing protection and is outside of benthic designated sites may be considered on a case by case basis as part of the DCO/dML.

Natural England advises that a precautionary approach is taken to cable protection within MPAs with each campaign of cable protection requiring a new marine licence along with a full assessment. This is for a number of reasons including that our understanding of impacts, the habitat that is there and its condition evolves over time as well as changes in law. Therefore, each time new cable protection is to be laid it will require a new assessment and an Appropriate Assessment or Marine Conservation Zone assessment.

Where further cable protection is proposed within an SAC or SPA during the operational phase of a project, it should be assumed that there will be a likely significant effect due to lasting habitat loss from the cable protection and an "appropriate assessment" would need to demonstrate that there would not be an adverse effect from the proposal. This is likely to be challenging in an SAC designated for its benthic habitats, therefore all alternatives will need to be fully explored. If it is not possible to avoid an adverse effect, then the derogations route under Article 6(4) of the Habitats Directive (see footnote 2) could be considered. Similarly, a Marine Conservation Zone (MCZ) assessment would be requirement where cable protection was proposed in an MCZ.

Annex 2: Coordinated Approach to Energy Transmission

Natural England has been engaged at a strategic level advising Government and the National Grid through the Offshore Transmission Network Review (OTNR), Holistic Network Design (HND) for Offshore wind, Plan Level Assessments for Offshore Wind lease areas and updates to the Renewable Energy National Policy Statement to further the progression of coordinated approaches to energy transmission in the marine environment. Not only is this likely to reduce the environmental impacts from multiple Green Energy projects in the North Sea seeking grid connection, but it is also likely to help manage grid connection concerns.

However, we note that as submitted the Application doesn't seek to progress a coordinated approach with North Falls and/or any of the inter connectors which would help mitigate the impacts from multiple projects. However, given the following extracts taken from various policy and plans we believe that a coordinated approach should be considered as part of the examination.

1) The Renewable Energy NPS:

Sections 2.8.231 and 2.8.235, intertidal and subtidal, respectively, in the renewable energy NPS states:

'Where cumulative impacts on intertidal/subtidal habitats are predicted as a result of multiple cable routes, applicants for various schemes are encouraged to work together to ensure that the number of cables crossing the subtidal zone is minimised and installation/ decommissioning phases are coordinated to ensure that disturbance is reasonably minimised.'

2) The East Anglia Network Study also references the [joint statement](#) from North Falls, Five Estuaries and National Grid, committing to exploring coordinated network designs in East Anglia (July, 2022) which includes the following:

'Onshore and offshore energy infrastructure are critical to delivering on the ambition for the UK to be Net Zero by 2050. As responsible developers, owners and operators of renewable generation and transmission infrastructure, we strongly support the government's ambition to make the UK the world leader in offshore wind. Delivering government ambitions of 50GW of offshore wind by 2030 will create green skilled

jobs, strengthen UK security of supply, provide clean renewable power to fight climate change and help to reduce energy bills for British consumers.

National Grid Electricity Transmission (Sea Link), National Grid Ventures (Nautilus and EuroLink), North Falls (offshore wind farm) and Five Estuaries (offshore wind farm) are working together and exploring the potential for offshore coordination as part of the Offshore Transmission Network Review (OTNR) “Early Opportunities” workstream, with a view to identifying a future Pathfinder Project.

Offshore coordination of these projects could reduce, but not avoid, the need for coastal onshore infrastructure in east Suffolk and southern East Anglia and significant reinforcement of onshore infrastructure, such as the East Anglia Green project, is key to enabling a clean low carbon future irrespective of where energy comes ashore.

Whilst we welcome the progress the OTNR has made and recent publications from BEIS and the energy regulator, Ofgem, on enabling regulatory and policy changes, currently, the detailed commercial, regulatory and legislative frameworks needed to realise offshore coordination are not yet fully in place. We are working with the Government and Ofgem as they continue to progress the changes needed to enable greater coordination between these projects. So as not to impact the Government’s 2030 offshore wind ambition, we continue to progress, in parallel, consent for grid infrastructure projects based on the existing regime.’

3) [Offshore Coordination Support Scheme](#) (OCSS) from Department of Energy Security and Net Zero, the East Anglia Network Study states:

‘The wind farm developers and NGET are continuing to assess the feasibility of the proposed coordination over the course of 2024. UK Government will then take a view as to whether to continue to fund the exploration of this voluntary coordination. It is important to note that a decision from government to grant OCSS funding does not result in immediate or automatic changes to existing, signed connection agreements between us and offshore wind projects. It is our understanding that all developers in scope of the OCSS are pursuing the exploration of voluntary offshore coordination alongside progressing their existing connection agreements.’

4) Conclusions of the East Anglia Network Study:

'This assessment has set out a side-by-side comparison of different electricity network configurations that transfer electricity across or around the region...we expect NGET to consider the assessment findings as part of their ongoing development of the Norwich to Tilbury circuit route. We also shortly expect the UK Government and relevant OCSS developers to decide upon their progression to the next stage of the OCSS.'

Annex 3 - In relation to consideration of small-scale habitat loss within Special Areas of Conservation (SACs) in relation to cable protection Natural England provides the following advice:

1.1. Natural England will usually consider permanent, long-lasting and irreversible loss to be an adverse effect unless it can be clearly demonstrated otherwise.

1.2. The following points should be considered (but not exclusively) when providing evidence to underpin an assessment of whether an impact is likely to be an adverse effect:

- Location of the predicted loss in terms of whether it sits on a designated or supporting feature of the site.
- Duration of the loss – for loss to be considered temporary it must be clearly time-limited to the point where the impact is predicted to return to the same pre-impact condition and must include a detailed remediation plan using proven techniques as part of the licence.
- Scale of the loss in relation to the feature / sub feature of the site including consideration of the quality and rarity of the affected area.
- Impact on structure, functioning or supporting processes of the habitat.
- Feature condition; and
- Existing habitat loss within the same site/ feature/ sub feature.

1.2. Whilst there are no hard and fast rules or thresholds, in order for Natural England to advise that there is no likelihood of an adverse effect the Applicant would need to demonstrate the following:

- 1) *That the loss is not on the priority habitat/feature/ sub feature/ supporting habitat and/or*
- 2) *That the loss is temporarily and reversible (within guidelines above) and/or*
- 3) *That the scale of loss is so small as to be de minimus alone and/ or*
- 4) *That the scale of loss is inconsequential including other impacts on the site/ feature/ sub feature*

- 1.3. As set out in (C-294/17 Cooperatie Mobilisation for the Environment UA and Others v College van gedeputeerde staten van Limburg and Others) and other case law relating to People over Wind (2018) for a plan/project to be consented within a designated site there needs to be sufficient certainty in the evidence presented and the recoverability of the features and/or absolute certainty that any proposed mitigation measures will remove an adverse effect on integrity.

- 1.4. Therefore, we welcome any further work the Applicant can do to provide more certainty in relation to the Worst-Case Scenario presented and/or minimise the impacts as much as possible.



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

Appendix F to the Relevant and Written Representations of Natural England

Benthic Compensation

For:

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

Planning Inspectorate Reference

21st June 2024

Appendix F Compensation Case - Benthic

As the derogations materially differ in content/structure to a standard Environmental Statement chapter, our comments are provided in a different format to the other Appendices. We have provided a summary table for each compensation measure (**Tables 1 – 4**) and detailed comments on the compensation plans and supporting documents (**Table 5**). The summary RAG table is used to highlight areas of agreement and outstanding concern. The following criteria used to assess each category in the summaries:

| | |
|--------|--|
| Green | Natural England has confidence in this aspect of the measure. |
| Yellow | There are some concerns/uncertainties regarding this aspect of the measure, but they are likely resolvable. |
| Red | Considerable uncertainties remain with this aspect of the measure, which if not resolved would make compensation undeliverable. Natural England cannot be confident at this stage that the measure is deliverable. |

Table 1 Summary position of compensation measure

| Compensation measure: Strategic Compensation - New site designation or Extension for Annex I Sandbanks | | | |
|---|------------|---|---|
| | RAG | Natural England Comment | Recommendation |
| Theoretical merit to deliver compensation. | | <p>Natural England refers the Examining Authority (ExA) to the published ‘Offshore Wind Leasing Round 4 Dogger Bank Strategic Compensation Plan’ (April 2024). In Section 7.1.1 it is stated that <i>‘It is agreed by the Steering Group that new site designation or site extension (new areas or features added to existing sites) is the recommended compensation measure of in this DBSCP and this follows advice received from Defra that this is an available strategic compensation measure that can be used to compensate for habitat loss and damage caused by the Round 4 Plan. It states that any new site/ site extensions will be determined by Defra and be designated as a strategic compensation measure which will benefit multiple projects. This DBSCP recognises that a team in Defra will work to identify potential areas for designating new sites, or extending existing sites, working closely with Natural England and JNCC. The information presented in this report is included as supporting evidence that the measure is appropriate for the specific purposes of the DBSCP, but without prejudice to the future outcome of the Defra-led process.’</i></p> <p>Subsequently, delivery discussions have commenced between DEFRA, JNCC and Natural England. It has been agreed that the scope of the strategic compensation should include all OWF projects in English waters within the pipeline contributing to the Government 2030 target, where benthic compensation is deemed necessary. Due to multiple projects, designated sites, and interest features, it will not be limited to provision of Annex I sandbank compensation.</p> <p>This measure is therefore also the recommended compensation measure for the Five Estuaries Offshore Windfarm project for both Annex I Sandbank and Reef feature. It is the SNCB’s view that this measure has the greatest likelihood from an ecological perspective, of maintaining the coherence of the National Site Network.</p> | <p>If and when further information becomes available during examination, Natural England will update accordingly. However, any assurances in the security of this measure should be sought directly from DEFRA.</p> |

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|-----------------------------------|--|---|--|
| Technical feasibility | | It is Natural England's view that with the Secretary of States support for the compensation measure, it is now technically feasible. The evidence included within the Applicant's documentation and within the Dogger Bank Strategic Compensation Plan supports the SNCBs position that there are areas of seabed not currently protected which if protected and appropriately managed could provide similar ecological function to those Annex I features which are likely to be subject to lasting loss/change and/or disturbance. | No further comment |
| Agreed compensation level. | | <p>Natural England is currently not in agreement with the Applicant on the presented Worse Case Scenario (WCS) of lasting habitat loss/change of Annex I Sandbanks within Margate and Long Sands (MLS) SAC.</p> <p>In addition, due to potential uncertainties with the delivery mechanisms and timeframes for successful delivery of the measure, further discussions are required in relation to individual project contributions and compensatory ratios which may be required.</p> | <p>Natural England advises that the points raised in Appendix E of our Relevant Representations/Written Representations (RR/WR) are addressed.</p> <p>Further feedback on the development of this measure should be sought from DEFRA.</p> |
| Scale/extent of measure. | | <p>Natural England has outstanding concerns in relation to the outcomes of the Impact Assessment and evidence used to support conclusions on scale and significance of potential impacts from cable installation activities and the placement of cable protection from Five Estuaries. Until these issues are resolved we do not agree with the Applicant on the scale and extent of the compensation measures required.</p> <p>As set out in the R4 plan level compensation document, the designation of a new site or existing site extension will be led on by a team in DEFRA in collaboration with interested parties therefore delivery mechanisms, costs and timeframes presented by the Applicant cannot and should not be relied upon.</p> | Natural England advises that the points raised in Appendix E of our RR/WR are addressed. |
| Timing: Deliverable before impact | | Please see above points, where Natural England recognises that there are likely to be time lags between impact occurring and compensation achieving the desired outcomes. In this scenario, Natural England would wish to see the project contribution to the measure to be such that it ensures an overall | If and when further information becomes available during examination Natural |

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| | | environmental net positive outcome for the impacted feature over the lifetime of the project. | England will update accordingly. However, any assurances in the security of this measure should be sought directly from DEFRA. |
| Location of measure | | This is still under consideration by DEFRA, Natural England and JNCC and as yet nothing has been agreed and/or secured. | If and when further information becomes available during examination Natural England will update accordingly. However, any assurances in the security of this measure should be sought directly from DEFRA. |
| Long term implementation | | This is still under consideration by DEFRA, Natural England and JNCC and as yet nothing has been agreed and/or secured. | If and when further information becomes available during examination Natural England will update accordingly. However, any assurances in the security of this measure should be sought directly from DEFRA. |
| Success criteria/Ability to prove additionality. | | This is still under consideration by DEFRA, Natural England and JNCC and as yet nothing has been agreed and/or secured. | If and when further information becomes available during examination Natural England will update accordingly. However, any assurances in the security of this measure should be |

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| | | | sought directly from DEFRA. |
| Suitable as sole measure for target species | | It is the SNCB's view that this measure has the greatest likelihood from an ecological perspective of maintaining the coherence of the National Site Network and even with uncertainties surrounding the project impacts, we believe that sufficient capacity can be built into the design of the measure to compensate for the impacts of this project as a sole measure. | Natural England advises that the points raised in Appendix E of our RR/WR are addressed so that the realistic WCS can be included within the compensation measure. |
| Key uncertainties in addition to those raised above | | | |
| Uncertainty | | Description | |
| Ability to bury cables | | Natural England notes that limited geotechnical and geophysical survey data has been presented with the Cable Burial Risk Assessment [APP-238] and the Cable Specification and Installation plan [APP- 239] to have confidence that the cables can be buried to optimum cable burial depth. In addition, there is limited consideration of the highly dynamic sediment transport/marine processes within MLS SAC which may have implications for cable burial over the lifetime of the project. Therefore, we are concerned that the WCS presented for cable protection within MLS SAC may not be realistic. | Natural England advises that the points raised in Appendix E of our RR/WR |

Table 2 Summary position of compensation measure.

| Compensation measure: Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks | | | |
|--|------------|--|---|
| | RAG | Natural England Comment | Recommendation |
| Theoretical merit to deliver compensation | Yellow | <p>Whilst Natural England is supportive of the removal of redundant surface laid/exposed infrastructure being progressed as a benthic compensation measure for Annex I sandbanks; we note Five Estuaries focus is on the removal of disused telecommunications ‘telecom’ cables.</p> <p>Natural England advises that currently there is no evidence that redundant telecoms cables are causing a significant impact on the Annex I Sandbank feature of the MLS SAC or other benthic designated sites. Unless further supportive detailed evidence is provided, Natural England does not consider their removal to constitute suitable compensation as a primary measure.</p> | Natural England advises that the applicant provide more detail to address Natural England concerns. |
| Technical feasibility | Red | The Applicant has shown that there are redundant telecom cables within the National Site Network, but currently there is limited evidence to demonstrate that the cables are sufficiently present on the surface of Annex I sandbanks at both a spatial and temporal scale to be hindering the conservation objectives of the designated sites and the attributes of Annex I sandbanks. Once this can be demonstrated then commitments with the cable owners will need to be secured. | Natural England advises that the applicant provide more detail to address Natural England concerns. |
| Agreed compensation level | Yellow | Natural England is not in agreement with the Applicant on the presented Worse Case Scenario (WCS) of lasting habitat loss/change of Annex I Sandbanks from the placement of cable protection within MLS SAC. | Please see our comments in Appendix E. |
| Scale/extent of measure | Yellow | Natural England has outstanding concerns in relation the outcomes of the Impact Assessment and evidence used to support conclusions on scale and significance of potential impacts from cable installation activities and the placement of cable protection from Five Estuaries. Until these issues are resolved we do not agree with the Applicant on the scale and extent of the compensation measures required. | Please see our comments in Appendix E. |
| Timing: Deliverable before impact | Green | Unlike other proposed measures the delivery of this measure is less reliant on other parties, therefore Natural England believes that the compensation could | No Comment. |

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| | | and should be delivered before the impact occurs. | |
| Location of measure | | The location of the measure has not been presented in detail and/or agreed with the SNCBs. | Natural England advises that the Applicant provides more detail to address our concerns. |
| Long term implementation - | | Natural England notes in 5.5.2 Outline Benthic Implementation and Monitoring Plan that there is an intention for monitoring and adaptive management to be progressed if this mechanism is taken forward. Ideally, in order to provide the Secretary of State with the necessary comfort that this measure is sufficiently progressed during the consenting phase, this should be set out in more detail. However, we would anticipate as the examination progresses that this measure is either more thoroughly progress or removed as an option if not. | Natural England advises that the applicant provide more detail to address Natural England concerns. |
| Success criteria/Ability to prove additionality | | Please see comments regarding the technical feasibility of this proposed measure. Until this is resolved, success criteria and additionality would be hard to determine. | Natural England advises that the applicant provide more detail to address Natural England concerns. |
| Suitable as sole measure for target species | | While Natural England considers that the removal of redundant infrastructure could be progressed as a sole measure it remains unclear if there are sufficient surface laid/exposed telecom cables on Annex I sandbanks to fully mitigated the potential project impacts. We would be supportive of this proposal being progressed as part of package if not. | Natural England advises that the applicant provide more detail to address Natural England concerns. |
| Key uncertainties in addition to those raised above | | | |
| Uncertainty | | Description | |
| Impacts of telecoms within the National Site Network | | Information on amount and location of surface laid/exposed cables and the spatial and temporal extent of those are required. | Natural England advises that the applicant provide more detail to address Natural England concerns. |
| Please also see those included in Table 1 | | | |

Table 3 Summary position of compensation measure.

| Compensation measure: Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks | | | |
|--|------------|--|--|
| | RAG | Natural England Comment | Recommendation |
| Theoretical merit to deliver compensation | | Natural England is supportive of the option for a percentage buyout of aggregate licence(s) as a compensation measure for Annex I sandbank as reduction of existing pressure on Annex I sandbanks would help restore Annex I sandbanks, prior to any licence renewal. We therefore encourage further detail to be included within the Application of any agreements with Aggregates industry that this measure has potential. | Natural England advises that the Applicant provides more detail to address our concerns. |
| Technical feasibility | | Natural England believes this is technically feasible as there are active Aggregate licences within the National Site Network which interact with Annex I sandbanks. However, there is currently no certainty that this measure can be secured. | Natural England advises that the Applicant provides more detail to address our concerns. |
| Agreed compensation level | | Natural England is not in agreement with the Applicant on the presented Worse Case Scenario (WCS) of lasting habitat loss/change of Annex I Sandbanks from the placement of cable protection within MLSSAC. | Please see our comments on Appendix E. |
| Scale/extent of measure | | The scale/extent of the measure has not been presented in detail and/or agreed with the SNCBs. | Please see our comments on Appendix E. |
| Timing: Deliverable before impact | | It is unclear if this measure can be delivered prior to the impacts occurring. | Natural England advises that the Applicant provides more detail to address our concerns. |
| Location of measure | | The location of the measure has not been presented in detail and/or agreed with the SNCBs | Natural England advises that the Applicant provides more detail to address our concerns. |
| Long term implementation | | Natural England notes in 5.5.2 Outline Benthic Implementation and Monitoring Plan [APP-048] that there is an intention for monitoring and adaptive management to be progressed if this mechanism is taken forward. Ideally, in order to provide the Secretary of State with the necessary comfort that this measure is sufficiently progressed during the consenting phase this should be set out in more detail. We would anticipate as the examination progresses that this measure is either more thoroughly progress or removed as an option | Natural England advises that the Applicant provides more detail to address our concerns. |

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| | | if not. | |
| Success criteria/Ability to prove additionality | | As per long term implementation for this measure, this is yet to be considered in detail and agreed with the SNCBs. | Natural England advises that the Applicant provides more detail to address our concerns. |
| Suitable as sole measure for target species | | While Natural England considers that the buyout of Aggregate licences could be progressed, it remains unclear if there are any options open to the Applicant to deliver this measure either as a sole measure or as part of a package. | Natural England advises that the Applicant provides more detail to address our concerns. |
| Key uncertainties in addition to those raised above | | | |
| Uncertainty | | Description | |
| Active licence areas willing to be bought out | | Information on amount and location of available active licence locations open to being bought is required. | Natural England advises that the Applicant provides more detail to address our concerns. |
| Please also see those included in Table 1 | | | |

Table 4 Summary position of compensation measure.

| Compensation Measure Seagrass Habitat Creation/Restoration for Annex 1 sandbanks | | | |
|---|------------|---|--|
| | RAG | NE Comment | Recommendation |
| Theoretical merit to deliver compensation. | | <p>Natural England refers the ExA to the published 'Offshore Wind Leasing Round 4 Dogger Bank Strategic Compensation Plan' (April 2024).</p> <p>In section 3.4.2 it is stated that '<i>Although lower on the compensation hierarchy than the other measures, seagrass meadows do occur on some sandbanks within coastal subtidal and intertidal zones and seagrass is a sub-feature of other designated Annex I sandbanks, such as those within Fal and Helford SAC and Plymouth Sound and Estuaries SAC (Natural England, 2023a; Natural England, 2023b). Suitability as compensation for sandbank is supported by the listing of seagrass as a flora associated with sandbank in Natura 2000 (now National Sites Network) guidance habitat guidance (European Commission, 2013). Nonetheless, seagrass restoration is a lower preference measure compared to those supporting the same ecological function of the habitat being compensated for.</i></p> <p>We advise the same is true for compensation for impacts to Annex I Sandbank Features of MLS SAC where subtidal seagrass has not been found within the site.</p> | Natural England currently has no further recommendation. |
| Technical feasibility | | <p>Natural England refers the ExA to the published 'Offshore Wind Leasing Round 4 Dogger Bank Strategic Compensation Plan' (April 2024).</p> <p>In section 3.4.3 it is stated that '<i>The Steering Group had significant concerns about the deliverability of seagrass restoration, even on a small scale as there have been no long term successes with seagrass restoration in the UK. Seagrass restoration is included as a potential measure only where it would be a minor part of a wider package in terms of the required compensation. Given the intention to compensate for Annex I sandbank habitat, which is, by definition, a subtidal habitat, seagrass restoration for the purpose of compensation for DBSW and DBSE projects shall be limited to subtidal seagrass. The measure is retained in the DBSCP as an</i></p> | Natural England will provide further comment on the technical feasibility on this measure at Deadline 1. |

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| | | <p><i>additional option which could potentially be employed if the Steering Group considered that it was necessary to supplement other measures, or potentially as an adaptive management response.</i></p> <p>This is also applicable to Five Estuaries compensation. Natural England is in the process of drafting a paper on the current seagrass restoration projects.</p> | |
| Agreed compensation level. | | Natural England is not in agreement with the Applicant on the presented Worse Case Scenario (WCS) of lasting habitat loss/change of Annex I Sandbanks within MLS SAC. | Please see our comments on Appendix E. |
| Scale/extent of measure. | | The scale/extent of the measure has not been presented in detail and/or agreed with the SNCBs. | Please see our comments on Appendix E. |
| Timing: Deliverable before impact | | It is unclear if this measure can be delivered prior to the impacts occurring. | Natural England advises that the Applicant would need to provide more detail to address our concerns. |
| Location of measure | | The location of the measure has not been presented in detail and/or agreed with the SNCBs. | Natural England advises that the Applicant would need to provide more detail to address our concerns. |
| Long term implementation | | Natural England notes in 5.5.2 Outline Benthic Implementation and Monitoring Plan [APP-048] that there is an intention for monitoring and adaptive management to be progressed if this mechanism is taken forward. Ideally, in order to provide the Secretary of State with the necessary comfort that this measure is sufficiently progressed during the consenting phase this should be set out in more detail. However, we anticipate as the examination progresses that this measure is either more thoroughly progressed or removed as an option if not. | Natural England advises that the Applicant would need to provide more detail to address our concerns. |
| Success criteria/Ability to prove additionality | | As per long term implementation for this measure, this is yet to be considered in detail and agreed with the SNCBs. | Natural England advises that the Applicant would need to provide more detail to address our concerns. |

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| Suitable as sole measure for target species | | Natural England advises that this measure could only be considered as part of a package providing <10% of the required compensation and/or potential adaptive management for part delivered compensation. There would also be a requirement for the provision of subtidal seagrass, not intertidal. | Natural England advises that other measures are progressed first. If other projects are being progressed, then there is an expectation this compensation will not be taken forward. |
|---|--|---|---|

Key uncertainties in addition to those raised above

| Uncertainty | | Description | |
|-------------------------------------|--|--|---|
| Details on project to be progressed | | Further details on following should be provided: <ul style="list-style-type: none"> • the particular project/s to be supported by VE, • how this will be secured in the DCO, • the location, and in what format the Applicant will provide the compensation; and • how it will be demonstrated to be additional to what the seagrass project already has entrained. It is also unclear how success will be demonstrated. | Further details to be provided into examination should this option be progressed. |

Please see those included in Table 1

Table 5 Natural England's Detailed Advice (not incorporated above) on specific compensation documents/plans which have been submitted.

| NE Ref | Doc Ref. | Natural England Comment | Recommendation | Risk |
|--|---|--|--|------|
| Document Used: As Listed in table below. | | | | |
| F1 | APP- 046 EN010115 5.5 HRA Derogations Case | Natural England advises that a more substantive consideration of 'Alternatives' is required to ensure that the Alternatives Test can be met. | An updated Derogations case should be provided with a more substantive consideration of 'Alternatives'. | |
| F2 | APP-047 5.5.1 Benthic compensation Strategy Road Map Table 1.1 (1) | Natural England advises that there needs to be more transparency over the project lifetime impacts and not just a focus on the Application and Examination. | Natural England advises that there is still a lot to secure and agree on the checklist and would welcome further updates being submitted during examination | |
| F3 | APP-047 5.5.1 Benthic compensation Strategy Road Map Paras 2.2.2, 2.2.4, 2.2.7 and 2.2.8 | Natural England advises that the conservation advice package for Margate and Long Sands SAC is in the process of being updated. With draft updates being published in Autumn 2024 and finalisation in March 2025. Within these updates there is relevant context on existing impacts to the site to help inform the in-combination assessments. Initial intelligence on the conservation advice package update is many of the Attribute conservation objectives are changing to restore rather than maintain. | Natural England advises that the RIAA and subsequent derogation case documents are updated to take account of the new conservation advice package. In particular, Table 2.1 on page 17. In addition, the Favourable Condition Status of UK sandbanks is likely to be published during the VE Examination and similarly this will need to be taken into account by the Applicant in any updated derogations case documents | |
| F4 | APP-047 5.5.1 Benthic compensation | Natural England is unsure how the Applicant has determined that sandbank recovery is a few months following sandwave levelling. Please see | Natural England advises that all statements are adequately referenced and where that is not possible a more precautionary approach it taken in relation to | |

| NE Ref | Doc Ref. | Natural England Comment | Recommendation | Risk |
|--------|--|--|---|------|
| | Strategy Road Map Paras 2.3.1 and 2.3.2 | Annex 1 to this Appendix for further advice | sandwave/bank recovery and derogation case documents updated accordingly | |
| F5 | APP-047 5.5.1 Benthic compensation Strategy Road Map Para 2.3.6 | Natural England advises that further geotechnical data is require pre-determination to inform the likelihood of cables being buried and thus the need for cable protections and therefore compensation. This is consent with Hornsea Project Three, Norfolk Vanguard, Norfolk Boreas and Dudgeon and Sheringham Extensions | Natural England advises that the Applicant collects this data and then updates the assessment pre-determination. | |
| F6 | APP-047 5.5.1 Benthic compensation Strategy Road Map Paras 2.3.8 and 2.3.10 | Cable Protection: Natural England advises across all documents that further detail is required on cable protection parameters during installation and project lifetime, before we can have any certainty on the proposed 5,400m ² . | Natural England advises that the Applicant provide the updated assessments requested here and in Appendix E | |
| F7 | APP-047 5.5.1 Benthic compensation Strategy Road Map Paras 2.3.11 and 2.3.12 | Compensation Requirements. Natural England disagrees with the applicant that compensation should not be agreed until it is determined post installation that it is definitely required. | Natural England highlights that a similar argument was raise by the Applicant for Norfolk Vanguard and Norfolk Boreas and both Secretary of State decisions letters required compensation to be being delivered prior to impacts occurring. | |
| F8 | APP-047 5.5.1 Benthic compensation Strategy Road Map | Mitigation: Natural England provides the following advice (1) Why hasn't combined/coordinated approach been taken forward? | Natural England refers the Applicant to Appendix D where more detail is provided to help improve confidence in the mitigation measures. | |

| NE Ref | Doc Ref. | Natural England Comment | Recommendation | Risk |
|--------|--|---|--|------|
| | Table 3.1 | <p>(2) Avoidance of sensitive habitats: - could cable route around sandbank features in SAC?</p> <p>(3) A Cable Burial Risk Assessment from an ecological perspective is key to determining mitigation.</p> <p>(4) Expectation that from an ecological perspective some cable protections will be ruled out pre-determination.</p> <p>(5) Natural England requests further information as to why the use of a jack up barge cannot be excluded from MLS SAC when other developers have adopted this as mitigation.</p> <p>(6) Natural England queries if low ordnance detonation can be used in MLS SAC to minimise the seabed impacts.</p> | | |
| F9 | APP-047 5.5.1 Benthic compensation Strategy Road Map Paras 4.6.3-4.6.7 | Natural England highlights that the information taken from other projects examination document often refers to mitigation not necessarily compensation. And does not align with final positions. | Natural England draws the ExA attention to the recent Secretary of Decisions where the actual benthic compensation required for each project is set out. | |
| F10 | APP-048 Outline BIMP | Natural England notes that this document is a skeleton document of what will be included post consent. Therefore, we are unable to provide | | |

| NE Ref | Doc Ref. | Natural England Comment | Recommendation | Risk |
|--------|----------|---|----------------|------|
| | | comment at this time on its content. It is not clear if this is the most appropriate approach if Strategic Compensation is taken forward. | | |

Annex 1: Sandwave Recovery

We consider that the Larsen *et al.* 2019 paper provides useful evidence from the Race Bank Offshore Windfarm (OWF) to indicate that complete natural regeneration of different types of dynamic sandbanks may be achieved within 3 years after levelling.

However, Natural England highlights that there remains a gap in the evidence to demonstrate that this has fully occurred, due to the lack of further monitoring of the recovery trajectory at Race Bank OWF after the 303 days of monitoring. Even though there remains some uncertainty as to the exact timeframes for sandbank regeneration, Natural England's experience suggests that complete regeneration is likely to occur on dynamic sandbank systems. Natural England highlights that there is a lack of evidence to suggest that this would be the case in more static sandbank systems e.g. Dogger Bank.

Therefore, we believe that there is a low risk of adverse effects arising due to the proposed sandwave levelling/sweeping by the ODOW projects. But this is not the case if additional external cable protection be progressed in swept area.

Given the need for evidence to improve our understanding of the timescales for recovery and address this outstanding uncertainty, Natural England advises that monitoring similar in scope to the Larsen *et al.* 2019 surveys is undertaken of all areas where sandwave sweeping/levelling occurs within IDRBNR SAC and is secured in the In Principle Monitoring Plan. The initial survey of the impacts should be repeated until such time that the sandbanks are considered by the regulator (in consultation with Natural England) to have satisfactorily

regenerated and are providing the same structure and function as to the surrounding sandbanks.



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

Appendix G to the Relevant Representations of Natural England
Fish and Shellfish Ecology

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix G – Fish and Shellfish Ecology

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

- [APP-075] 6.2.6 Fish and Shellfish Ecology,
- [APP-124] 6.5.6.3 Spawning Herring Heatmaps – International Herring Larval Survey Data
- [APP-125] 6.5.6.4 Herring Seasonal Restriction Note

1. Natural England’s Advice and Recommendations

A summary of Natural England’s key concerns in relation to Fish and Shellfish Ecology is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

Glossary of Acronyms and Abbreviations

| | |
|-----|----------------------------------|
| EIA | Environmental Impact Assessment |
| SSC | Suspended Sediment Concentration |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement contained within our Relevant Representations.

Table 1 Summary of Key Issues – Fish and Shellfish Ecology.

| NE Ref | Summary of Key Concerns | Natural England's Recommendations to Resolve Issues. | Risk |
|--------|--|---|------|
| G1 | Natural England welcomes the inclusion of modelling of fish as stationary receptors however it is not clear whether conclusions of magnitude are based on either the modelling of fish as stationary or fleeing receptors. | Clarity should be provided as to whether conclusions are based on a static or fleeing receptor model. | |
| G2 | Natural England welcomes the implementation of additional mitigation measures, namely a seasonal piling restriction and sediment disposal restriction provided that these mitigations are secured through appropriate conditions on any consent issued. However, we defer to Cefas in regard to the appropriateness of these mitigation measures and associated buffers. | Please refer to advice from Cefas for further actions. | |

Table 2 Natural England's Detailed Advice and Recommendations – Fish and Shellfish Ecology.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|-----|--|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Project Parameters - Document(s) Used: N/A | | | | | |
| Project Description | | | We have no comments to make at this stage. | None. | |
| Natural England's Position on Worst Case Scenario or Scenarios | | | We have no comments to make at this stage. | None. | |
| Baseline Characterisation - Document(s) Used: N/A | | | | | |
| Survey Data Acquisition | | | We have no comments to make at this stage. | None | |
| Data Gaps | | | We have no comments to make at this stage. | None. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Analysis, Modelling and Reporting | | | We have no comments to make at this stage. | None. | |
| Environmental Impact Assessment - Document Used: [APP-075] 6.2.6 Fish and Shellfish Ecology, [APP-124] 6.5.6.3 Spawning Herring Heatmaps – International Herring Larval Survey Data [APP-125] 6.5.6.4 Herring Seasonal Restriction Note | | | | | |
| Identified impacts | G3 | Table 6.22 | Spawning Herring We do not agree that the sensitivity of spawning herring to noise impacts would be medium during the construction phase of the Project. | We would advise that the sensitivity of spawning herring to underwater noise impacts should be assessed as greater than medium. | |
| | G4 | 6.11.54 | The potential for mortality does not equate to a low magnitude of impact, especially with regard to the current condition of the fishery. | We do not agree with this rationale and recommend this assessment is revised. | |
| | G5 | Section 6.11, impact 1 | Natural England welcomes the inclusion of underwater noise modelling results using a static receptor model. However, they do not appear to have been taken into account during the assessments of magnitude within the Environmental Impact Assessment (EIA). Natural England disagrees with the use of a fleeing receptor model as there is insufficient evidence in the literature to support this in a real-world scenario. | The assessment should consider the results of the underwater noise modelling results for static receptors to inform the conclusions of magnitude and significance. | |
| Methodology | | | We have no comments to raise at this stage | None | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|------------|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | | Table 6.12 | Natural England welcomes the implementation of a seasonal piling restriction during the peak Downs herring spawning period and defer to Cefas regarding the appropriateness of the proposed timing of the restriction and buffer required. | Please refer to advice from Cefas for further actions required. | |
| | G6 | Table 6.12 | Natural England defer to Cefas on the matter of the suitability of the sediment disposal restriction as mitigation for the impacts of high levels of suspended sediment concentration (SSC) on herring (and sandeel). | Please refer to advice from Cefas for further actions required. | |
| Assessment Conclusions | | | We have no comments to raise at this stage | None | |
| HRA - Document Used: | | | | | |
| Screening | | | We have no comments to raise at this stage | None | |
| Assessment | | | We have no comments to raise at this stage | None | |
| In- combination | | | We have no comments to raise at this stage | None | |
| Further Receptor Points | | | We have no comments to raise at this stage | None. | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | | | We have no comments to raise at this stage | None. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-----|--|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Assessment Conclusions | | | We have no comments to raise at this stage | None. | |
| Compensatory measures | | | We have no comments to raise at this stage | None | |



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

Appendix H to the Relevant Representations of Natural England
Marine Mammal Ecology

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix H – Marine Mammal Ecology

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

- [APP-040] 5.4 Report to Inform Appropriate Assessment
- [APP-041] 5.4.1 HRA Site Integrity Matrices
- [APP-042] 5.4.2 HRA Screening Report
- [APP-043] 5.4.3 HRA Screening Matrices
- [APP-076] 6.2.7 Marine Mammal Ecology
- [APP-114] 6.5.4.12 Digital Video Aerial Surveys of Seabirds and Marine Mammals at VE Annual Report March 2019 to February 2021
- [APP-126] 6.5.7.1 Marine Mammal Baseline Characterisation
- [APP-244] 9.14.1 Outline Marine Mammal Mitigation Protocol – Piling
- [APP-245] 9.14.2 Outline Marine Mammal Mitigation Protocol – UXO
- [APP-246] 9.15 Outline Southern North Sea Special Area of Conservation Site Integrity Plan

Glossary of Acronyms and Abbreviations

| | |
|---------|---|
| ADD | Acoustic Deterrent Device |
| AEOI | Adverse Effect on Integrity |
| CEA | Cumulative Effect Assessment |
| CEFAS | Centre for Environment, Fisheries and Aquaculture Science |
| DCO | Development Consent Order |
| EIA | Environmental Impact Assessment |
| ExA | Examining Authority |
| HRA | Habitats Regulations Assessment |
| iPCoD | Interim Population Consequences of Disturbance |
| JNCC | Joint Nature Conservation Committee |
| KJ | Kilojoule |
| MMO | Marine Management Organisation |
| MMObs | Marine Mammal Observer |
| MMMP | Marine Mammal Mitigation Protocol |
| NAS | Noise Abatement Systems |
| OWF | Offshore Wind Farm |
| PAM | Passive Acoustic Monitoring |
| PEIR | Preliminary Environmental Information Report |
| PTS | Permanent Threshold Shift |
| SAC | Special Area of Conservation |
| SCANS | Small Cetaceans in European Atlantic Waters and the North Sea |
| SELcum | Cumulative Sound Exposure Level |
| SIP | Site Integrity Plan |
| SNS SAC | Southern North Sea Special Area of Conservation |
| TTS | Temporary Threshold Shift |
| UXO | Unexploded Ordnance |
| VE | Five Estuaries |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

1. Natural England's Advice and Recommendations

A summary of Natural England's key concerns in relation to Marine Mammal Ecology is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

2. Outline Site Integrity Plan (SIP)

The submission of an Outline SIP offers the opportunity for developers to demonstrate that avoiding an Adverse Effect on Site Integrity (AEol) will be possible through appropriate management and mitigation of impacts. However, this defers the ultimate determination to the Marine Management Organisation (MMO) in the pre-construction phase of the project. Where, it is then anticipated that the SIP will be updated and finalised close to the time (within 1 year) of construction. The extent of noisy activities impacting the designated site at the time of construction should then be better understood and more accurately assessed. This enables the MMO to review the impact of a much-refined, much more realistic worst-case scenario and confirm that the applied for works will not result in an AEol on the SNS SAC in-combination with other plans and projects. Whilst this approach carries risk and uncertainty for all parties, it has been accepted as the most pragmatic way forward at this time.

Whilst recognising the potential utility of SIPs to manage in-combination noise impacts, Natural England is not confident that the current approach to SIP implementation will prevent impact thresholds for significant disturbance from being exceeded in the Southern North Sea SAC. Our concerns are as follows:

- The SIP approach inevitably defers detailed HRA questions to subsequent decisions.
- To be a robust approach going forward, it is essential that a comprehensive review be conducted by MMO once the revised piling SIP is submitted to ensure any potential Adverse Effect on Site Integrity of the SAC can be confidently ruled out.
- There have been instances recently where SIPs have been signed off contrary to Natural England's advice regarding uncertainty in the assessment conclusions.

The final SIP may identify necessary mitigation measures at a time that final project design and financial investment decisions have already been made. As a result, certain mitigation options may no longer be feasible on financial or design grounds (e.g. use of alternatives to impact piling; use of pin piles instead of monopiles; use of noise abatement systems; seasonal or other timing restrictions). In particular, feedback from developers is that by the time that revised SIPs are submitted to MMO for consideration, it is too late to procure Noise Abatement Systems (NAS) should they be required.

The consequence of this is that piling for offshore wind developments can account for substantial parts of the daily and/or seasonal thresholds which SIPs operate to. This, in turn, may constrain the ability of subsequent projects to operate without exceeding the thresholds. Other industries and activities typically have shorter lead-in times for their licences, meaning their applications are submitted closer to or during the SNS SAC season (summer/winter) they will impact. This means that offshore wind piling SIPs may therefore be signed off in advance of up-to-date information on other projects that may act in-combination being available. An inaccurate revised in-combination assessment may lead to the need for

mitigation not being identified at the time of the offshore wind piling SIP and a risk of AEol being identified too late for appropriate mitigation to then be put in place.

The management measures implemented through SIPs thus far have been limited to coordination measures to ensure that activities on a given day do not exceed the daily thresholds. This measure does not reduce the risk of exceeding the seasonal thresholds. Indeed, the seasonal threshold in the Southern North Sea SAC was almost exceeded in summer 2022 and 2023, and there is considerable concern regarding summer 2024. The most robust measure to reduce the contribution to the seasonal disturbance is to reduce the impact to the SAC from the project; however, such measures have not yet been implemented through SIPs. Accordingly Natural England has low confidence in appropriate measures being secured to ensure the seasonal threshold is not exceeded.

In any event, the number of offshore wind projects due to undertake piling in the SNS SAC from now to 2030 means that the disturbance impact thresholds are likely to be exceeded by offshore wind piling alone without further mitigation and management. Other industries or activities will only increase this risk, particularly given the aspirations for a range of development types in the Southern North Sea (oil and gas, carbon capture and storage etc.).

We strongly advise that the Applicant commits to specific mitigation measures at this stage, particularly the implementation of NAS, rather than relying on the SIP identifying the requirement for them. Taking this approach would minimise the risk of an Adverse Effect on Site Integrity as far as possible, with the outcome of the revised SIP determining pre-construction if the mitigation measures are still necessary or can be removed. We consider that relevant mitigation options are available to the Applicant and would be happy to engage further with them on the merits of this approach.

Table 1 Summary of Key Issues – Marine Mammal Ecology.

| NE Ref | Summary of Key Concerns | Natural England's Recommendations to Resolve Issues. | Risk |
|--------|---|---|------|
| H1 | <p>Natural England does not agree with several conclusions in the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) because they lack robust evidence supporting the conclusion (see detailed comments below). In such cases, Natural England recommends population modelling be conducted, for example Interim Population Consequences of Disturbance (iPCoD), to understand the impacts of the project alone and in-combination with other plans and projects at a population level and consequently inform the conclusions of the EIA and HRA.</p> | <p>Natural England recommends the Applicant uses population modelling, for example iPCoD, to understand the impacts of the project alone and in combination with other activities at a population level.</p> | |
| H2 | <p>The Applicant has not committed to using Noise Abatement Systems (NAS) at this stage. Natural England strongly advises the Applicant to commit to using noise abatement as mitigation should driven or part-driven piles be used during construction. Further detail regarding our advice on NAS can be found in the detailed comments below.</p> | <p>We expect noise abatement to be committed to in the Outline/Draft Marine Mammal Mitigation Plan (MMMP) and Site Integrity Plan (SIP) submitted at the Development Consent Order (DCO) Application stage. The effect of noise abatement systems in reducing noise impacts should be included in the assessment.</p> | |
| H3 | <p>Natural England is concerned that the current approach to implementing Site Integrity Plans (SIPs) for piling impacts to the Southern North Sea SAC from offshore wind development does not allow sufficient time for mitigation methods, such as NAS, to be procured by the Applicant prior to construction, should they be required, therefore increasing the risk that an Adverse Effect on Site Integrity (AEoI) cannot be avoided. Further detail regarding our concerns around SIPs can be found in the detailed comments below.</p> | <p>We strongly advise that the Applicant commit to the use of specific mitigation measures at this stage, which may be removed at a later date if the revised SIP demonstrates they are not required.</p> | |

Table 1 Natural England's Detailed Advice and Recommendations – Marine Mammal Ecology.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|---------------------------------|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| <ul style="list-style-type: none"> • Project Description • Natural England's position on Worst Case Scenario or Scenarios • Baseline Characterisation Data Gaps • HRA Assessment, Further Receptor Points & Compensatory measures | N/A | N/A | We have considered these factors and advise that no comments are required. Natural England does not have any significant issues with these parts of the application that have not been addressed in other comments. | N/A | |
| <p>Baseline Characterisation - Document(s) Used: [APP-126] 6.5.7.1 Marine Mammal Baseline Characterisation [APP-114] 6.5.4.12 Digital Video Surveys of Seabirds and Marine Mammals at VE Two Year Report March 2019 to February 2021</p> | | | | | |
| Survey Data Acquisition | H4 | APP-126 Sec 5.1 Pg. 26-30 | <p><u>Marine Mammal Baseline Characterisation:</u> Natural England advice is that the proposed densities to be used in the quantitative assessment should be an average monthly density estimate of 1.82 porpoise/km² based on data obtained from the two-year baseline survey. We note that additional densities are put forward for the quantitative assessment of wider scale</p> | We advise that the Applicant should apply an average monthly density estimate obtained from the 2-year baseline survey for all quantitative assessments. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|-----|---|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>impacts - the SCANS III density surface (ranging between 0.607 and 0.78) and the SCANS IV block wide densities (0.3096). Natural England does not support the use of these densities as it is not realistic to expect that the densities would drop so significantly outside of the VE project area. Furthermore, SCANS surveys were conducted during summer months thus representing only a snapshot of species densities at this time and are <u>not</u> representative of the whole year. Given that the project lies within the winter portion of the Southern North Sea SAC, where harbour porpoises are present in higher densities, low densities obtained by SCANS are <u>not</u> representative neither are they precautionary. This is in line with our advice that the most precautionary density estimate should be selected for the assessment as stated within our Best Practice Guidance Phase III.</p> | | |
| Analysis, Modelling and Reporting | H5 | N/A | See comment above in relation to densities. | N/A | |
| <p>Environmental Impact Assessment - Document Used: [APP-076] 6.2.7 Marine Mammal Ecology [APP-244] 9.14.1 Outline Marine Mammal Mitigation Protocol – Piling [APP-245] 9.14.2 Outline Marine Mammal Mitigation Protocol - UXO</p> | | | | | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| Methodology | H6 | APP-076 Sec 7.3 Table 7.2 Pg. 26-49 & Sec 7.5 Table 7.8 Pg. 69 | <p>Natural England does not agree that a combination of medium sensitivity and medium magnitude should result in a non-significant effect. As such, the Cumulative Effects Assessment (CEA) for disturbance to harbour porpoise and harbour seals should result in moderate effect, which is significant in EIA terms opposed to the current conclusion of 'minor.' Otherwise, the Applicant needs to provide robust evidence to justify the conclusion of not significant for such scenarios.</p> <p>Natural England recommends the Applicant uses population modelling such as iPCoD to quantitatively assess if these scenarios would have a significant impact at a population level.</p> <p>Natural England notes the Applicant's comments to our Section 42 responses. However, the Applicant's comments relating to harbour porpoise sensitivity to underwater noise, assigned magnitude and sensitivity scores and minimising of impacts, do not adequately address the issues raised. No further evidence has been provided to support the Applicant's rationale for</p> | To justify the conclusion of not significant for scenarios which have medium sensitivity and medium magnitude, the applicant should use population modelling, such as iPCoD, to quantitatively assess if these scenarios will have a significant impact at a population level. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>the assessment. For example, the Applicant renamed the sensitivity categories by only changing their names (from Negligible/Low/Medium/High to Low/Medium/High/Very High) which is not sufficient to address our comments related to the assigned scores for sensitivity and magnitude. Thus, we do not consider that our comments have been addressed and we retain the same position in regard to the significance matrix and the outcomes of the assessment.</p> | | |
| | H7 | APP-076 Sec 7.10 Tables 7.22, 7.23, 7.27, 7.28, 7.29, 7.30, 7.31, & 7.32 Pg. 115-145 | <p>Natural England does not support inclusion of SCANS III and IV densities in the quantitative assessment for PTS-onset, TTS-onset and behavioural disturbance from piling for harbour porpoise.</p> <p>As an example (Table 7.22), the instantaneous PTS from piling for harbour porpoises was estimated at maximum 730m, therefore, site survey densities are more appropriate than wider block densities from SCANS. The maximum SEL_{cum} for piling is estimated as 8.6km (180km²) and given the size of the site and the buffer zones, the</p> | Use only site survey densities for the quantitative assessment of PTS and TTS arising from the piling at the project site in relation to harbour porpoise. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|---|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | majority of the impact range is within the survey area, thus site-specific densities remain most appropriate. | | |
| | H8 | APP-076 Sec 7.10 Para 7.10.76; 7.10.86; & 7.10.97 Pg. 119-112 | The wording in these paragraphs is tentative (e.g. " <i>If noise reduction methods are used (leading to a 10 dB reduction in source level..)</i> "), thus Natural England is not confident in the level of commitment to using this mitigation method, nor does it support robust conclusions of the assessment that relies on this type of mitigation. Natural England strongly advises that the Applicant should commit to using NAS at this stage to ensure the conclusion that the significance of mitigated PTS from piling is Negligible. | The Applicant should fully commit to using NAS to support the conclusions of the assessment that rely on this mitigation technology. | |
| | H9 | N/A | Natural England defers to Cefas as the underwater noise specialists to comment on the Underwater Noise Technical Report. | To note. | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | H10 | General | <u>Outline Marine Mammal Mitigation Protocol – Piling</u> Natural England notes that the Outline Marine Mammal Mitigation Plan (MMMP) provides a summary of potential mitigation measures and is not intended to identify specific mitigation measures that will be implemented during pile-driving operations. | We expect noise abatement to be committed to in the Outline/Draft Marine Mammal Mitigation Plan and Site Integrity Plan submitted at the DCO Application stage. The effect of noise abatement systems in reducing noise impacts should be included in the assessment. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-----|---|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>However, Natural England strongly advises that the Applicant should commit to using noise abatement as mitigation, should driven or part-driven piles be used during construction.</p> <p>NAS are proven to reduce the level of noise generated by piling and its propagation through the marine environment. As the noise levels are reduced at or close to the source, the range and area over which noise-related impacts occur will be reduced significantly.</p> <p>We are aware that Defra will be publishing a marine noise policy paper soon (announced at an MMO workshop, 13th March 2024) which will include the expectation from the MMO that all offshore wind pile driving activity in English waters should demonstrate that they have utilised best endeavours to deliver noise reductions through the use of primary and/or secondary noise mitigation methods in the first instance from January 2025.</p> | | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-----|---|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>Therefore, we expect that the majority of piling from 2025 onwards will not be able to go ahead without noise abatement in place, for the following reasons:</p> <ul style="list-style-type: none"> The overall level of noise in the Southern North Sea SAC is increasing due to increasing levels of offshore wind construction and other noisy marine activities taking place. Therefore, it will be increasingly difficult to determine no Adverse Effect on Site Integrity (AEol) from cumulative noise disturbance. Projects that do not use noise abatement systems risk contributing to cumulative noise disturbance that could exceed the daily and seasonal thresholds for significant disturbance leading to AEol on the SNS SAC, and therefore may not be able to construct as planned. The large-scale piling campaigns for offshore wind projects risk causing injury and disturbance offences to marine mammals of European | | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>Protected Species (EPS), therefore developers typically apply for a wildlife licence to exempt them from an offence under the regulations. A licence can only be granted where the regulator is satisfied that the required legislative tests are met, such as that there is no other satisfactory alternative.</p> <ul style="list-style-type: none"> We expect it to be increasingly difficult for projects to demonstrate that noise abatement is not a satisfactory alternative. Projects that do not use noise abatement therefore risk not meeting the legislative test needed to be granted a wildlife licence. | | |
| | H11 | APP-244 Sec 4.2 Para 4.2.1 Pg. 14 | <p><u>Outline Marine Mammal Mitigation Protocol – Piling</u></p> <p>Natural England notes that the Applicant proposes to start piling with a soft start at 15% (1050KJ) of the maximum hammer energy (7000KJ). We do not consider this to be the adequate low energy for the commencement of piling and advise that the soft star is initiated with 10% of</p> | We advise the Applicant should commence the soft start with 10% of the maximum hammer energy. If this is not possible due to the engineering constrains, then use of NAS would aid the noise reduction. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---|--|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | the maximum hammer energy i.e. 700KJ. | | |
| | H12 | APP-244 & APP-245 Sec 4.2 Para 4.2.1 Pg. 14 | <u>Outline Marine Mammal Mitigation Protocol – Piling and UXO</u> Natural England supports the Applicant's decision to define the mitigation zone as the maximum potential PTS-onset impact range. It is important for the final MMMP to consider how this zone can be effectively monitored to ensure all marine mammals can be detected. This may require using more MMObs and implementing stricter limits on workable weather conditions. | To note. | |
| | H13 | APP-244 Sec 4.3 Para 4.3.2 Pg. 15 | <u>Outline Marine Mammal Mitigation Protocol – Piling</u> Natural England recommends that, if a marine mammal is not observed leaving the mitigation zone, a delay of 20 minutes from the last sighting should be implemented before commencement of soft start. | Update the outline MMMP to include this mitigation advice. | |
| | H14 | APP-244 Sec 4.3 Para 4.3.4 Pg. 15 & | <u>Outline Marine Mammal Mitigation Protocol – Piling and UXO</u> The Passive Acoustic Monitoring (PAM) guidance was updated in December 2023 (JNCC 2023). This updated version should be used to inform the | Updated PAM guidance should be used to inform the final MMMP and the outline MMMP should be updated to note the most up to date PAM guidance will be used: JNCC guidance for the use of Passive Acoustic Monitoring in UK waters | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|--|---|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | APP-245 Sec 4.3 Para 4.3.4 Pg. 14 | final MMMP and the outline MMMP should be updated to note this expectation. | for minimising the risk of injury to marine mammals from offshore activities JNCC Resource Hub | |
| | H15 | APP-245 Sec 4.1 Para 4.1.1 Pg. 13 | <u>Outline Marine Mammal Mitigation Protocol- UXO</u> Natural England does not support the use of scare changes as a suitable mitigation measure thus we advise that this measure is not considered in the outline MMMP. | Update the outline MMMP to remove the use of scare charges. | |
| | H16 | APP-245 Sec 4.5 Para 4.5.1 Pg. 16 | <u>Outline Marine Mammal Mitigation Protocol- UXO</u> Natural England notes that there is a misunderstanding around the concept of 'breaks in UXO detonations'. Given the nature of detonations as an instantaneous activity, breaks in detonations are not possible. Time periods between subsequent detonations should not be considered as breaks and any time prior to a new detonation should be adequately monitored during the pre-denotation search. Post-detonation search is not considered as a 'break,' but it is a standard monitoring protocol following the detonation. | We advise the Applicant renames the section, removes mention of the breaks in detonation, and only focuses on the post-detonation protocol. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---|---|-----------------------------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | H17 | APP-244 Sec 4.6 Para 4.6.1 Pg. 19 & APP-245 Sec 4.6 Para 4.6.1 Pg. 16 | <p><u>Outline Marine Mammal Mitigation Protocol- UXO and Piling</u></p> <p>Natural England has concerns related to this statement within the MMMP for UXO and piling: <i>"If UXO detonation [or piling] is delayed, there would be a risk of animals re-entering the mitigation zone when ADDs are switched off. However, turning on ADDs for extended periods may lead to habituation. Therefore, ADDs would be promptly turned off during delays and reactivated when detonation is ready to commence."</i> Protocol for delays should be carefully thought through taking into account maximum duration of the Acoustic Deterrent Device (ADD), time of the delay and expected time of the detonation.</p> <p>Natural England recommends the break in ADD use should be more than 20 minutes to ensure a startle and flee response once reactivated in circumstances when the commencement of piling is delayed for a sufficient time to warrant the ADD being turned off.</p> | Include advice in the final MMMP. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--|--------------------------|---|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | H18 | APP-244 & APP-245 Sec 4.3 Pg. 14-15 | <u>Outline Marine Mammal Mitigation Protocol- UXO and Piling</u> Visual marine mammal watches should commence at least 30 minutes before ADD activation. This might require the visual watch to be longer than 1 hour when the ADD activation time is longer than 30 minutes. | Update the outline MMMP to reflect this advice. | |
| Assessment Conclusions | H19 | N/A | We do not agree with the assessment conclusions in some cases. Please refer to above comments. | N/A | |
| HRA - – Document(s) Used: [APP-042] 5.4.2 HRA Screening Report; [APP-043] 5.4.3 Screening Matrices; [APP-040] 5.4 Report to Inform Appropriate Assessment (RIAA) | | | | | |
| Screening | H20 | APP-042 Sec 4, Table 4.2 Pg. 51 | Harbour porpoise has been screened out from sites that are more than 26 km from the project based on a lack of evidence to suggest connectivity. However, harbour porpoises within the North Sea Management Unit are considered to be a part of the continuous population. Thus, as wide-ranging animals, any designated site with harbour porpoise as a named feature within the North Sea Management Unit should be screened in. | Screen in all designated sites with Harbour porpoise as a feature within the North Sea Management Unit. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---------------------------------------|---|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| In-combination | H21 | General | It is not clear if seismic surveys have been included in the in-combination assessment due to the contradicting text throughout the document. It is also not clear which tier they have been assigned to (tier 6 (Table 9.6) or tier 7 (Table 12.3, & 12.3.30)). | Natural England recommends that seismic surveys are assessed in the in-combination assessment. | |
| Assessment Conclusions | H22 | APP-040 Sec 12.3 Para 12.3.35 Pg. 622 | Natural England is concerned by the high proportion of the Southern North Sea SAC estimated to be disturbed by the project in-combination with other activities. This percentage is 86.47% at the highest and is far greater than the 20% daily noise threshold for the SAC. Consequently, Natural England cannot agree to the conclusion of no AEol for in-combination impacts of the project for disturbance of harbour porpoise in the SNS SAC unless the applicant fully commits to NAS within the SIP. | We advise the Applicant to revise the conclusion to the assessment and commit to mitigation measures which will reduce the sound at source, for example, NAS. | |
| | H23 | APP-040 Sec 12.3 Para 12.3.43 Pg. 626 | <p>Natural England does not agree to the conclusion of no AEol for in-combination impacts of the project for disturbance of harbour porpoise in the SNS SAC across a season.</p> <p>Since the mitigation committed to in the MMMP (following the JNCC guidelines for MMObs, PAM and ADD use) is designed to reduce the likelihood of</p> | We advise the Applicant to revise their conclusion to the assessment and commit to mitigation measures which will reduce the sound at source, for example, NAS. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-----|---|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>injury caused by underwater noise not to reduce disturbance, it cannot be used as a justification to support no AEol.</p> <p>To reduce disturbance to harbour porpoise alone and in-combination, the applicant needs to commit to NAS to significantly reduce the sound at source.</p> | | |



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

Appendix I to the Relevant Representations of Natural England
Seascape Landscape and Visual

For:

The construction and operation of the Five Estuaries Offshore Wind Farm located approximately 37km from the Suffolk Coast in the Southern North Sea.

Planning Inspectorate Reference EN010115

21 June 2024

Appendix I – Seascape Landscape and Visual

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

- [APP-079] 6.2.10 Seascape, Landscape and Visual
- [APP-197] 6.7.10.1 Seascape, Landscape and Visual Methodology
- [APP-198] 6.7.10.2 Seascape, Landscape and Visual Viewpoint Assessment
- [APP-199] 6.7.10.3.1 Seascape and Landscape Visual Figures 10.1 - 10.5
- [APP-200] 6.7.10.3.2 Seascape and Landscape Visual Figures 10.6 - 10.10
- [APP-201] 6.7.10.3.3 Seascape and Landscape Visual Figures 10.11 - 10.15
- [APP-202] 6.7.10.3.4 Seascape and Landscape Visual Figures 10.16 - 10.20
- [APP-203] 6.7.10.3.5 Seascape and Landscape Visual Figures 10.21 - 10.25
- [APP-204] 6.7.10.3.6 Figure 10.26 Viewpoint 1 Southwold - Gun Hill
- [APP-205] 6.7.10.3.7 Figure 10.27 Viewpoint 2 Dunwich Beach
- [APP-206] 6.7.10.3.8 Figure 10.28 Viewpoint 3 Dunwich Heath - Coastguard Cottages
- [APP-207] 6.7.10.3.9 Figure 10.29 Viewpoint 4 Sizewell Beach
- [APP-208] 6.7.10.3.10 Figure 10.30 Viewpoint 5 Thorpeness
- [APP-209] 6.7.10.3.11 Figure 10.31 Viewpoint 6 Aldeburgh
- [APP-210] 6.7.10.3.12 Figure 10.32 Viewpoint 7 Orford Castle
- [APP-211] 6.7.10.3.13 Figure 10.33 Viewpoint 8 Burrow Hill - Suffolk Coast Path
- [APP-212] 6.7.10.3.14 Figure 10.34 Viewpoint 9 Orfordness - Bomb Ballistics Building
- [APP-213] 6.7.10.3.15 Figure 10.35 Viewpoint 10 Shingle Street
- [APP-214] 6.7.10.3.16 Figure 10.36 Viewpoint 11 Old Felixstowe
- [APP-215] 6.7.10.3.17 Figure 10.37 Viewpoint 12 The Naze - Walton
- [APP-216] 6.7.10.3.18 Figure 10.38 Viewpoint 13 Walton Pier
- [APP-217] 6.7.10.3.19 Figure 10.39 Viewpoint 14 Walton - Mill Lane
- [APP-218] 6.7.10.3.20 Figure 10.40 Viewpoint A Covehithe
- [APP-219] 6.7.10.3.21 Figure 10.41 Viewpoint B Southwold Pier
- [APP-220] 6.7.10.3.22 Figure 10.42 Viewpoint C Bawdsey Manor
- [APP-221] 6.7.10.3.23 Figure 10.43 Viewpoint D Landguard Fort
- [APP-222] 6.7.10.3.24 Figure 10.44 Viewpoint E Harwich
- [APP-223] 6.7.10.3.25 Figure 10.45 Viewpoint F Clacton on Sea
- [APP-224] 6.7.10.3.26 Figure 10.46 Viewpoint G Foreness Point

Glossary of Acronyms and Abbreviations

| | |
|---------|---|
| EA2 | East Anglia TWO |
| ES | Environmental Statement |
| EIA | Environmental Impact Assessment |
| ExA | Examining Authority |
| HFoV | Horizontal Field of View |
| LURA | Levelling Up and Regeneration Act |
| MDS | Maximum Design Scenario |
| NE | Natural England |
| PEIR | Preliminary Environmental Information Report |
| SCHAONB | Suffolk Coast and Heaths Area of Outstanding Natural Beauty |
| SHC | Suffolk Heritage Coast |
| SLVIA | Seascape, Landscape and Visual Impact Assessment |
| SoS | Secretary of State |
| SVIA | Seascape Visual Impact Assessment |
| VE | Five Estuaries |
| WTG | Wind Turbine Generator |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

1. Natural England's Advice and Recommendations

A summary of Natural England's advice in relation to Seascape, Landscape and Visual is set out in Table 1. Our advice is supported by Table 2, which details the apparent heights of Five Estuaries' (VE) wind turbine generators (WTGs) at select viewpoints for illustrative purposes.

This advice is offered without prejudice and relates only to the seascape and visual effects associated with the statutory purposes of the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (SCHAONB), the special character of the Suffolk Heritage Coast (SHC), and their seascape settings. We wish to emphasise the following points:

1. The statutory purpose of a designated landscape extends beyond its boundary to include its setting, where this contributes to the natural beauty of the designation. The seascape component of the setting is fundamental to the character and natural beauty of the SCHAONB and the special character of the SHC. Within the SCHAONB, the presence and special character of the SHC serves to highlight the stretch of coastal edge most sensitive to the potential seascape and visual effects from VE.
2. Based on the information presented within the Environmental Statement (ES), and with awareness of typical visibility conditions along the Suffolk Coast, Natural England **disagrees** with the conclusion of '*some not significant effects*' on the SCHAONB special qualities and that this would '*not compromise the purposes of designation*' (paragraph 10.16.27). **Natural England's advice is that there would be significant effects on the SCHAONB special qualities.** As detailed in Table 1, we advise that the Applicant should apply the design principles provided to them during pre-application to reduce the potential impacts.
3. Natural England advises that Section 245 (Protected Landscapes) of the Levelling Up and Regeneration Act (LURA) 2023 places a duty on relevant authorities in exercising or performing any functions in relation to, or so as to affect, land in a National Park, the Broads or an Area of Outstanding Natural Beauty (AONB) ("National Landscape") in England, to seek to further the statutory purposes of the area. The duty applies to local planning authorities and other decision makers in making planning decisions on development and infrastructure proposals, as well as to other public bodies and statutory undertakers. It is anticipated that the government will provide guidance on how the duty should be applied in due course.

In the meantime, and without prejudicing that guidance, Natural England advises that:

- the duty to 'seek to further' is an active duty, not a passive one. Any relevant authority must take all reasonable steps to explore how the statutory purposes of the protected landscape (A National Park, the Broads, or an AONB) can be furthered.
- The new duty underlines the importance of avoiding harm to the statutory purposes of protected landscapes but also to seek to further the conservation and enhancement of a protected landscape that goes beyond mitigation and like for like measures and replacement. A relevant authority must be able to demonstrate with reasoned evidence what measures can be taken to further the statutory purpose.
- The proposed measures to further the statutory purposes of a protected landscape should explore what is possible in addition to avoiding and mitigating the effects of the development, and should be appropriate, proportionate to the type and scale of

the development and its implications for the area and effectively secured. Natural England's view is that the proposed measures should align with and help to deliver the aims and objectives of the designated landscape's statutory management plan. The relevant protected landscape team/body should be consulted.

We advise that the Applicant should provide details to demonstrate how it will assist the Secretary of State (SoS) and the Examining Authority (ExA) in fulfilling the duties, following the guidance outlined above.

Table 1 Summary of Key Issues – Seascape Landscape and Visual.

| NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
|--|---------------------------|--|--|------------|
| Document(s) Used: [APP-079] 6.2.10 Seascape, Landscape and Visual | | | | |
| I1 | Table 10.3, Pages 63 & 64 | Natural England notes that the Applicant has introduced a definition of what an “ <i>immediate setting</i> ” is (“ <i>the foreground seascape</i> ”), allowing them to assert that the project is a ‘ <i>horizon development</i> ’. However, Natural England advises that the special qualities of the SCHAONB, particularly the wildness and tranquillity special qualities, are highly sensitive to changes in views out to sea and will be affected by the proposed VE development. | The assessment of impacts should focus on the specific impacts of the proposal in question on the special qualities and how they might be mitigated, rather than seek to arbitrarily segment the setting of the SCHAONB. | |
| I2 | Table 10.3, Pages 64-67 | <p>The apparent heights (expressed in degrees) at which the proposed WTGs will be perceived from key viewpoints sited within the SCHAONB and the SHC are updated in Table 2 below. This evidence is based on the new WTG design parameters presented (the reduction in maximum turbine height to blade tip from 420m as proposed at pre-application to 399m). Natural England advises that this design change suggests that landscape and visual impacts from viewpoints at Dunwich Beach are no longer likely to be significant.</p> <p>These apparent heights values and the lateral spread values (also expressed in degrees) of the Wind Turbine Generators (WTGs) across the perceived horizon should be used to inform judgements on the significance of effects, rather than a simple reliance on separation distance. However, these distances cannot be used to justify ‘negligible harm’ to the SCHAONB and SHC, since distance does not negate the following:</p> <ul style="list-style-type: none"> • The VE WTGs, even the ~320m blade tip height design option, will appear significantly taller than the | Further consideration is required of the implication of the apparent heights for the special qualities of the SCHAONB and SHC, as well as Natural England’s advice on this matter. | |

| NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
|--|---------------------------|---|---|------------|
| Document(s) Used: [APP-079] 6.2.10 Seascape, Landscape and Visual | | | | |
| | | <p>Greater Gabbard Offshore Wind Farm (OWF) and Galloper OWF turbines.</p> <ul style="list-style-type: none"> The VE WTGs, especially the ~320m design option, will increase the lateral spread of turbines across the horizon, and introduce the presence of a new object on the horizon (the most northerly 8 WTGs) from key viewpoints. <p>The VE WTGs, especially the ~320m design option, will create a densification effect across the horizon when seen in conjunction with the Greater Gabbard and Galloper array turbines.</p> | | |
| I3 | Table 10.3, Pages 64-67 | <p>The Applicant's view is that effects from an increase in WTG density is "<i>considered preferable</i>" to an increase in Horizontal Field of View (HfOV) (Page 66 of APP-079). Natural England cannot find where the evidence supporting this assessment is set out within the Seascape, Landscape and Visual Impact Assessment (SLVIA), particularly in relation to the most northerly grouping of WTGs. Natural England advises that WTG apparent height, turbine density, and turbine lateral spread are three separate parameters that may be used to inform judgements on the significance of effects to the SCHAONB and SHC.</p> | <p>Evidence should be submitted to support the Applicant's assessment that effects from an increase in WTG density is "<i>considered preferable</i>" to an increase in HfOV, and what this outcome means for the assessment of harm to the SCHAONB and SHC.</p> | |
| I4 | Table 10.3, Pages 67 & 68 | <p>Natural England disagrees with the Applicant's submitted position (Pages 67 & 68 of APP-079) on the "curtaining" effect created by VE WTGs, which Natural England considers as significant. Natural England does not agree that the potential seascape and visual effects of the 16 WTGs, that form the northern array of VE, on the SCHAONB and the SHC, are insignificant in Environmental Impact Assessment (EIA) terms.</p> | <p>The Applicant should carefully consider Natural England's advice on embedded mitigation (see I7) to identify ways to reduce these impacts on the SCHAONB and SCH.</p> <p>We also advise that the Applicant should provide the HfOV expressed in degrees of the gap remaining between the proposed VE array</p> | |

| NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
|--|-----|--|---|------------|
| Document(s) Used: [APP-079] 6.2.10 Seascape, Landscape and Visual | | | | |
| | | <p>Within the northern array area of VE, the most northerly 8 WTGs have the greatest potential to affect the special qualities of the SCHAONB and the special character of the SHC. This relates to their lateral spread, combined with their apparent height, which from some viewpoints will bridge the gap between Galloper OWF and the consented East Anglia TWO (EA2) array. While the remaining 8 WTGs are, from most views, partially masked by the Galloper WTGs, their sheer size will create a harsh juxtaposition on the horizon with the existing arrays. Natural England advises that further embedded mitigation is required.</p> <p>We offer advice on the following statements within the assessment:</p> <ul style="list-style-type: none"> • <i>“the retention of some gap between VE and East Anglia TWO in the majority of views”</i>. Natural England advises that the Applicant provides the HFoV expressed in degrees of the gap remaining between the proposed VE array and the East Anglia TWO (EA2) array, to facilitate an understanding of what an <i>“apparent gap”</i> means. • <i>“the relatively narrow additional increase in lateral spread of the VE WTGs”</i>. Natural England advises that the gap between Galloper OWF and the consented EA2 array will be bridged from some viewpoints, which will remove unhindered views out to sea through the current gap. • <i>“their introduction as elements that are similar to those that are present or consented”</i>. Natural England advises that the sheer size of the VE turbines | and the EA2 array to facilitate an understanding of what an “apparent gap” means. | |

| NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
|--|---------------------------|---|--|------------|
| Document(s) Used: [APP-079] 6.2.10 Seascape, Landscape and Visual | | | | |
| | | <p>(northern array) will create a harsh juxtaposition on the horizon with the existing arrays.</p> <ul style="list-style-type: none"> • <i>“their very long distances from the SCHAONB on the sea skyline”</i>. We refer the Applicant to Table 2 below for examples of viewpoints from which the apparent size of the VE WTGs is likely to be significant. | | |
| 15 | Table 10.3, Pages 69 & 70 | Natural England welcomes the reduction in the maximum blade tip height to 399m in the submitted proposal. | N/A | |
| 16 | Table 10.3, Page 70 | <p>Natural England considers that the ~320m blade tip height design is more acceptable, although the apparent heights of the WTGs do not become completely insignificant. The greater northward lateral spread of WTGs combined the densification effects associated with the greater number of WTGs would also result in some significant effects. The ~320m turbines will still appear to be significantly taller than the existing turbines (Gallopier and Greater Gabbard arrays), albeit partially obscured. Therefore, the need to consider Natural England’s Design Principles remains even for this design.</p> <p>Please note that the illustrative apparent heights of the VE WTGs given the updated 324m height design are presented by Natural England in Table 2 of this response.</p> | N/A | |
| 17 | Table 10.3, Pages 68 & 69 | We note that the Natural England proposed Design Principles 1, 2 and 3 have not been adopted by the Applicant as embedded mitigation within the submission. Natural England proposed these Design Principles to assist in fulfilling the need for Good Design as outlined in the Overarching National Policy Statement for Energy (EN-1). The Design Principles are as follows: | Further consideration of Natural England’s proposed Design Principles, followed by integration of the principles into amended designs. | |

| NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
|--|--|--|---|------------|
| Document(s) Used: [APP-079] 6.2.10 Seascape, Landscape and Visual | | | | |
| | | <p>Design Principle 1: Maintain a clear visual gap between VE and the consented EA2 by limiting northward lateral spread of the array.</p> <p>Design Principle 2: Locate as many turbines as possible on the eastern side of the Northern Development Area in order to increase the separation distance and therefore reduce the apparent height of the WTGs when seen from the SCHAONB and SHC.</p> <p>Design Principle 3: Ensure that the layout does not create a new distinct object on the far horizon visible from the SCHAONB and SHC (see Figure 10.29e with respect to the most northerly 8 WTGs).</p> <p>We do not agree that the evolution of the project design is acceptable embedded mitigation, or that Design Principles 1, 2 and 3 have been fully considered within the project design.</p> | | |
| 18 | Table 10.3, Page 71 and Para 10.11.231 | In relation to the assessment of the sense of enclosure and isolation special quality, we do not agree with the description (Page 71 of APP-079) of the VE array as “ <i>relatively permeable</i> ”, nor that it “ <i>does not create enclosure</i> ”, or that “ <i>the apparent height of the VE WTGs is relatively small</i> ” (Paragraph 10.11.231 of APP-079). | Further consideration of Natural England’s Design Principles is required to reduce the impacts on the special quality to acceptable levels. | |
| 19 | Table 10.3, Page 71 | Page 71 of APP-079 states that “ <i>Visualisations of the ~320 m design scenario (79 turbines) are shown in Figure 10.47 – Figure 10.67.</i> ” Natural England has been unable to locate these visualisations within the submission material. | The Applicant should ensure all visualisations are provided and submit any omitted into the Examination. | |
| 110 | Table 10.3, | We note that the ES presents a revised indicative Maximum Design Scenario (MDS) layout assessed in the SLVIA. This | The SLVIA should be updated to consider the implications of removing the remaining gap | |

| NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
|--|-----------------------------------|--|---|------------|
| Document(s) Used: [APP-079] 6.2.10 Seascape, Landscape and Visual | | | | |
| | Pages 71 & 72 | <p>layout also results in a distinct grouping of 8 WTGs in the remaining gap between the proposed VE array and the EA2 array. We cannot see where the assessment considers the potential effect of this. Therefore, Natural England disagrees with the statement that <i>'VE will entirely occur in the context of the existing developments'</i>.</p> <p>We also disagree that the VE WTGs can be considered as <i>'generally in keeping'</i> with existing arrays given the starkly differing apparent heights between Galloper / Greater Gabbard arrays and VE (see Table 2 below).</p> | between the existing/proposed OWF arrays in this area. | |
| I11 | Table 10.3, Page 72 & Table 10.36 | <p>Natural England welcomes the assessment of the Cumulative Effects on SCHAONB Special Qualities presented in Table 10.36 (APP-079). The assessment recognises the potential for further cluttering effects impacting the "landscape quality" special quality.</p> <p>However, Natural England disagrees with the assessment that the additional cluttering effects from the VE project are appropriately mitigated by the measures set out in the Scenic Quality section in Table 10.36 and we advise that the potential effects on the SCHAONB and SHC from the distinct grouping of 8 WTGs in the remaining gap between the proposed VE array and the EA2 array have not been addressed.</p> <p>We advise that new developments are still being introduced into the seascape setting of the SCHAONB and SHC. The assessment does not explain what the additional impact of VE is in terms of the cluttering effect identified.</p> | The assessment needs to be updated to consider the additional impact of VE in terms of the <i>'cluttering'</i> effect identified, the implications for the special qualities, and potential mitigation measures in line with the Natural England Design Principles. | |
| I12 | Table 10.3, | Natural England advises that the most northerly 8 WTGs will create and draw focus to a new distinct object on the horizon, | The Applicant should assess the harm from the most northerly 8 WTGs on the statutory purpose | |

| NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
|--|---------------------|--|--|------------|
| Document(s) Used: [APP-079] 6.2.10 Seascape, Landscape and Visual | | | | |
| | Pages 72 & 73 | and that the resulting harm from this new object on the statutory purposes of the SCHAONB and the special character of the SHC has not been fully considered in the assessment. | of the SCHAONB and special character of the SHC and identify potential mitigation in line with the Natural England Design Principles. | |
| I13 | Table 10.3, Page 73 | Natural England disagrees with the Applicant's assessment on the " curtaining " effect created by VE WTGs , and the justification presented on Page 73 of APP-079. The assessment of the sense of openness and exposure special quality has not properly considered the effect of VE closing of gap between the existing Galloper and Greater Gabbard OWF arrays and the to be built EA2 array. Based upon the evidence provided by the Applicant there is a likelihood that VE would close the last 'gap without turbines' in direct views out to sea along a ~20km stretch of SCHAONB and SHC coastline (Orford Ness to Dunwich). | The Applicant should revisit their assessment of the 'curtaining' effect with respect to the special qualities of the SCHAONB and SHC. | |

Table 1 Apparent heights of select viewpoints for illustrative purposes given the WTG maximum height parameters presented in the VE PEIR and ES, in comparison to the apparent heights of Greater Gabbard and Galloper from Orford Ness.

Natural England consider apparent heights of above 0.4 degrees as being potentially significant. Apparent heights which NE considers to be significant are shown in **bold**.

In particular, we draw the Examiners' attention to the value for the viewpoint located on **Orford Ness**, which should be considered in the context of the highly sensitive nature of this location, principally in terms of potential for significant adverse effects to the SCHAONB wildness and tranquillity special qualities.

| Viewpoint | Apparent height of closest WTG for ~420m scenario (PEIR) | Apparent height of closest WTG for 399m MDS scenario (ES) | Apparent height of closest WTG for ~320m scenario (PEIR) | Apparent height of closest WTG for 324m MDS scenario (ES) | Greater Gabbard consented array | Galloper consented array |
|----------------------|--|---|--|---|---------------------------------|--------------------------|
| Southwold (Gun Hill) | 0.398 | 0.367 | 0.271 | 0.276 | | |
| Dunwich Beach | 0.404 | 0.372 | 0.273 | 0.278 | | |
| Dunwich Heath | 0.487 | 0.454 | 0.351 | 0.356 | | |
| Sizewell Beach | 0.493 | 0.458 | 0.347 | 0.353 | | |
| Thorpeness | 0.512 | 0.475 | 0.360 | 0.366 | | |
| Aldeburgh | 0.515 | 0.478 | 0.362 | 0.368 | | |
| Orford Ness | 0.566 | 0.529 | 0.410 | 0.416 | 0.268 | 0.300 |



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

Appendix J to the Relevant Representations of Natural England

Onshore Ecology

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix J – Onshore Ecology

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

- [APP-040] 5.4 Report to Inform Appropriate Assessment
- [APP-041] 5.4.1 HRA Site Integrity Matrices
- [APP-042] 5.4.2 HRA Screening Report
- [APP-043] 5.4.3 HRA Screening Matrices
- [APP-044] 5.4.4 Summary of Designated Sites
- [APP-045] 5.4.5 Lesser Black Backed Gull Compensation Site – Habitats Regulation Assessment
- [APP-061] 6.1.1 Introduction
- [APP-063] 6.1.3 Environmental Impact Assessment Methodology
- [APP-064] 6.1.3.1 Cumulative Effects Assessment Methodology
- [APP-083] 6.3.1 Onshore Project Description
- [APP-086] 6.3.4 Onshore Biodiversity and Nature Conservation
- [APP-087] 6.3.6 Hydrology, hydrogeology and Flood Risk
- [APP-129] 6.6.1.1 Obstacle Crossings Register
- [APP-132] 6.6.4.1 Great Crested Newt Survey Report – Additional Ponds
- [APP-139] 6.6.4.8 Roosting Bats Tree Survey Report – South of A120
- [APP-149] 6.6.4.18 Onshore Biodiversity Net Gain Indicative Design Stage Report
- [APP-150] 6.6.4.19 Statutory Designated Sites Qualifying or Notified Features
- [APP-151] 6.6.4.20 VE OWF – GCN District Level Licensing Impact Assessment and Conservation Payment Certificate – unsigned – and associated documents
- [APP-152] 6.6.4.21 Protected Species Report and Figures (Confidential)
- [APP-225] 6.8.1 Lesser Black Backed Gull Compensatory Areas Environmental Assessment
- [APP-242] 9.12 Outline Cable Specification and Installation Plan
- [APP-253] 9.21 Code of Construction Practice
- [APP-254] 9.22 Outline Landscape Ecological Management Plan Revision B
- [APP-261] 9.28 Outline Landfall HDD Methodology

1. Natural England's Advice and Recommendations

A summary of Natural England's key concerns in relation to Onshore Ecology is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

Glossary of Acronyms and Abbreviations

| | |
|-------|---|
| AEol | Adverse Effect on Integrity |
| BNG | Biodiversity Net Gain |
| CIEEM | Chartered Institute of Ecology and Environmental Management |
| DCO | Development Consent Order |
| DLL | District Level Licensing |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| GCN | Great Crested Newt |
| GLTA | Ground Level Tree Assessment |
| HRA | Habitats Regulations Assessment |
| HDD | Horizontal Directional Drilling |
| LEMP | Outline Landscape and Ecological Management Plan |
| LIMP | Lesser Black Backed Gull Implementation Plan |
| LSE | Likely Significant Effect |
| OLEM | Outline Landscape and Ecological Management Plan |
| O&M | Operation and Maintenance |
| OWF | Offshore Wind Farm |
| RTD | Red-throated Diver |
| NSIP | Nationally Significant Infrastructure Project |
| SAC | Special Area of Conservation |
| SPA | Special Protection Area |
| SSSI | Site of Special Scientific Interest |
| TCPA | Town & Country Planning Act |

Please note: This appendix should be read in conjunction with Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

Table 1 Summary of Key Issues – Onshore Ecology.

| NE Ref | Summary of Key Concerns | Natural England’s Recommendations to Resolve Issues. | Risk (RAG) |
|--------|---|--|------------|
| J1 | Natural England’s confidence in mitigation proposals for protected species is reduced due to limitations of survey results caused by the timing of the surveys. | Natural England advises that surveys should be undertaken at the optimum time as per the relevant guidelines for each species, and appropriate mitigation implemented. This will need to be secured in the Outline Landscape and Ecological Management Plan (OLEM). | |
| J2 | Natural England does not agree with the use of an arbitrary time period for the definition of duration in relation to impact assessment for protected species, as it doesn’t consider the life cycle of the species being assessed, including invertebrates of particular conservation concern. | Natural England advises that the definition of ‘short’ term’ in relation to impacts on protected species should be reconsidered, based on the lifecycle of the species being assessed, and the impact assessment amended accordingly. | |
| J3 | Natural England advises that there are possible disturbance and visual impacts for users of King Charles III England Coast Path (ECP) depending on timing of opening of ECP. | Natural England advises that possible confirmation of the King Charles III ECP in this area will be made by summer 2025 at the earliest. We require information relating to any impacts on the associated margins, in addition to any restrictions required and impacts on the line of the path. | |
| J4 | Natural England advises that there is the potential for impacts to designated sites & features at the Lesser Black Backed Gull (LBBG) compensation site on Orford Ness. | <p>Natural England advises that an adequate environmental baseline for the predator exclusion fencing site on Orford Ness should be established pre-determination, to inform avoidance/mitigation measures and allow ongoing monitoring. To achieve this, seasonally appropriate baseline surveys should be carried out in summer 2024 to allow assessment of impacts to the shingle vegetation areas and invertebrates.</p> <p>Impacts to the shingle sediment morphology and structure need to be considered and assessed further. Geomorphological change trends should be assessed using historical and contemporary evidence of coastal retreat/advancement. Further consideration should be given to potential impacts to the saline lagoons within the compensation area over the lifetime of the project. as</p> | |

| NE Ref | Summary of Key Concerns | Natural England's Recommendations to Resolve Issues. | Risk (RAG) |
|--------|--|--|------------|
| | | <p>should to the potential for repeated damage caused by maintenance checks and works. Climate change impacts and coastal vulnerability also need to be adequately assessed. All the above should be factored into an updated assessment of potential impacts.</p> <p>Once an updated assessment has been carried out, appropriate mitigation should be applied to minimise impacts to the shingle morphology, sediment structure, vegetation and communities and similarly for the saline lagoons present in the compensation area.</p> | |
| J5 | <p>Natural England notes that no consideration has been given in the ES to the potential impacts from the operational port for this project. Given this extension project is an extension of the Galloper Offshore Wind Farm (OWF), can it therefore be assumed that the same Operation and Maintenance (O&M) facility will be used adjacent to Harwich port within the Scour and Orwell Special Protection Area (SPA)? If so, what will be the disturbance impacts of increased boat traffic to the bird features of the SPA? Will additional berths be required, and will that result in the loss of supporting habitat for SPA interest features?</p> <p>In addition, vessel movement from the Scour and Orwell SPA will all transit the Outer Thames SPA and therefore further consideration will need to be given to potential disturbance to red-throated diver (RTD). Please see comments in Appendix C Offshore Ornithology.</p> | <p>Natural England advises that impacts from the operation port should be assessed as part of the Development Consent Order (DCO) at the consenting phase to ensure that a Holistic approach can be taken to the Habitats Regulations Assessment (HRA). It should also be noted that the impacts to Annex I birds are greater than were predicted for Galloper O&M facility and there is a risk that if this location is taken forward an Adverse Effect on Integrity (AEoI) may not be excluded.</p> | |

Table 2 Natural England's Detailed Advice and Recommendations – Onshore Ecology.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|-----|--|----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| <p><u>Project Parameters:</u></p> <ul style="list-style-type: none"> • Project Description • Worst Case Scenario <p><u>Baseline Data:</u></p> <ul style="list-style-type: none"> • Analysis, Modelling and Reporting <p><u>Environmental Impact Assessment:</u></p> <ul style="list-style-type: none"> • Methodology <p><u>Marine Conservation Zones</u></p> <p><u>Habitats Regulations Assessment:</u></p> <ul style="list-style-type: none"> • Further Receptor Points • In-combination <p><u>SSSI:</u></p> <ul style="list-style-type: none"> • Assessment <p><u>Priority Habitats</u></p> <p><u>Other Onshore Matters:</u></p> | N/A | N/A | <p>Natural England does not have any significant issues with these parts of the Environmental Impact Assessment (EIA) that have not been addressed in other comments. Therefore, unless the design parameters significantly change, we will not be providing further advice on this matter during examination.</p> | N/A | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|---|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| <ul style="list-style-type: none"> • Connection People with Nature • Landscape and Nature Recovery | | | | | |
| Baseline Characterisation - Document(s) Used: [APP-086] 6.3.4 Onshore Biodiversity and Nature Conservation, [APP-132] 6.6.4.1 ES Annex Great Crested Newt Survey Report – Additional Ponds, [APP-045] 5.4.5 Lesser Black Backed Gull HRA | | | | | |
| Survey Data Acquisition | J6 | APP-132, Sec 4.5.22 & 4.5.23 & 2.1 | Natural England advises that sufficient survey data is available for all accessible ponds within 250m from 2022 and 2023, which is appropriate for a District Level Licensing (DLL) application. | Natural England will not be providing any further advice in relation to Great Crested Newt (GCN) into examination. | |
| | J7 | APP-045, Sec 2.2.2, 2.2.4, 4.2.6, & Table 4.2 | <p><u>Lesser Black Backed Gull Compensation Site at Orford Ness</u></p> <p>As stated in 2.2.4, January 2024 was outside the optimal season for habitat/botanical surveys which limits the results and support for the conclusions made regarding impacts to the proposed compensation site at Orford Ness. With Table 4.2 (Ramsar Plant Species) based on literature rather than survey data. Moreover, Section 4.2.6 acknowledges that the presence of uncommon species could not be ruled out along the proposed fence line.</p> <p>Natural England is therefore concerned that the potential for Orford Ness – Shingle Street Special Area of</p> | <p>Natural England advises that seasonally appropriate vegetation and invertebrate surveys should be carried out prior to determination, in order to ensure that SAC, SSSI and Ramsar site features are taken into account when designing the installation/removal and maintenance of the fence.</p> <p>These surveys should be carried out to inform consent and as soon as possible, but no later than the start of September.</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---------|--|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p>Conservation (SAC), Alde-Ore Estuary Site of Special Scientific Interest (SSSI) and Alde-Ore Estuary Ramsar site features (including rare plants or invertebrates) could be impacted by installation/removal of the predator fencing which has not been adequately quantified. In turn, this means that Natural England cannot confirm that the proposed mitigation measures will reduce potential impacts to designated site features to acceptable levels.</p> | | |
| Data Gaps | J8 | APP-045 | <p>Coastal recession/advancement trends at the LBBG compensation site(s) should be adequately assessed using available evidence. Historical and contemporary geomorphological trends should be assessed to understand future site evolution in response to contemporary and future processes. This is relevant not only to site vulnerability over the lifetime of the project, but also to the sensitivities of the protected features and supporting habitats/processes. For example, at Orford Ness, the shingle habitats are likely to be highly sensitive to potential climate change impacts including sea level rise, and increased storminess,</p> | <p>The Applicant needs to fully consider, pre-determination, site vulnerability and sensitivities of protected features and supporting habitat/processes through the lifetime of the development. Historical and contemporary geomorphological trends should be assessed (e.g. historical trend analysis, LiDAR surveys etc). Climate change impacts should be adequately considered.</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | wave heights, temperatures and drought). | | |
| Environmental Impact Assessment – Document(s) Used: [APP-086] 6.3.4 Onshore Biodiversity and Nature Conservation Chapter, [APP-151] 6.6.4.20 ES Annex VE OWF - GCN District Level Licencing Impact Assessment and Conservation Payment, [APP-225] 6.8.1 Lesser Black Backed Gull Compensatory Areas Environmental Assessment | | | | | |
| Identified impacts | J9 | APP-151 | Natural England previously agreed that the Red Line Boundary used for the GCN DLL could be reduced to remove areas to the north of the A120 as no impacts to GCN were predicted here. We can confirm that submitted information is in line with what has previously been agreed. | Natural England advises that unless there are significant changes in design parameters will not be providing further comment on GCN DLL during examination. | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | J10 | APP-225 | Natural England advises that further consideration is needed regarding appropriate mitigation measures for impacts on the Orford Ness – Shingle Street SAC from the LBBG compensation site(s) once more a more robust baseline characterisation (and pre-determination surveys) has been undertaken. | Natural England advises that mitigation measures may need to be updated following updating of baseline characterisation and survey data. | |
| Assessment Conclusions | J11 | APP-225, Sec 1.11.54-56 | Natural England does not agree with the EIA conclusions for construction and management/monitoring/maintenance/ impacts to habitat within and adjacent to the fence line at the LBBG compensation site at Orford Ness. It is concluded that <i>'no significant effects are likely on perennial vegetation on coastal</i> | Natural England advises that seasonally appropriate baseline vegetation and invertebrate surveys need to be carried out prior to determination and the impact assessment updated. Appropriate mitigation should be applied, and every effort made to avoid damage to | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p><i>shingle</i>'. Vegetated shingle communities are highly dependent upon factors relating to the sediment structure. If installation is not carried out sensitively, destabilisation of the sediment profile has the potential to cause a long-term, if not permanent, shift towards a secondary form of vegetation. Please refer to NE Ref J7 above and J12 below.</p> | <p>the coastal shingle and vegetation features of the designated sites in this area.</p> | |
| | J12 | APP-225 | <p>Natural England notes that the EIA does not consider impacts to the shingle morphology and sediment structure. Recoverability of damaged shingle is slow, particularly where it is more static and active geomorphological processes no longer have a major role in shaping shingle morphology. Typically, shingle morphology land ward of the seaward ridge never fully recovers. There is also the risk of further repeated damage occurring through regular maintenance/monitoring/ management of the fence line.</p> | <p>Natural England advises that the EIA should be updated to include an assessment of impacts to the shingle morphology and sediment structure.</p> | |
| | J13 | APP-225 | <p>Natural England notes that the EIA has not considered impacts to the Saline lagoons at the Orford Ness compensation site due to the presence of the fence through the lifetime of the project in terms of blockage to</p> | <p>The Applicant needs to fully consider impacts to the saline lagoons over the lifetime of the project for the compensation site on Orford Ness and update the EIA, with mitigation</p> | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | overtopping events and the transfer of new shingle to their eastern edge and subsequent implications to the lagoon biodiversity. Furthermore, the impacts of climate-related changes (including water levels and coastal stability) need to be further considered. | measures brought forward and secured where a need is identified. | |
| HRA – Document(s) Used: [APP-040] 5.4 Report to Inform Appropriate Assessment; [APP-042] 5.4.2 HRA Screening Report; [APP-045] 5.4.5 Lesser Black Backed Gull Compensation Site – Habitats Regulation Assessment | | | | | |
| Screening | J14 | APP-042, Sec 3.6.1 | <p>Natural England advises that the site selection for onshore ecology is precautionary and acceptable for project parameters included as part of the Application.</p> <p>However, Natural England notes that no consideration has been given in the Environmental Statement (ES) to the potential impacts from the operational port for this project. Given this extension project is an extension of the Galloper OWF, can it therefore be assumed that the same Operation and Maintenance facility will be used adjacent to Harwich port within the Scour and Orwell SPA? If so, disturbance impacts of increased boat traffic to the bird features of the SPA will need to be assessed as loss of supporting habitat for SPA interest</p> | Natural England advises that impacts from the operation port should be assessed as part of the DCO at the consenting phase to ensure that a Holistic approach can be taken to the HRA. It should also be noted that the impacts to Annex I birds are greater than were predicted for Galloper O&M facility and there is a risk that if this location is taken forward an AEol may not be excluded. | |

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| | | | features, should further berth dredging be required. | | |
| | J15 | APP-042, Table 4.8 | Natural England is satisfied that our previous onshore ecology comments on the HRA Screening (October 2021) have been appropriately actioned. | Natural England advises that unless there are significant changes in design parameters will not be providing further comment on HRA Screening during examination. | |
| | J16 | APP-040, Table 38, Sec. 9.1.11 | Natural England notes that Marsh Harrier populations at the Alde Ore Estuary SPA and Minsmere-Walberswick SPA were screened out of the HRA. The Applicant suggests there is no risk of collision on migration during the O&M phase because the birds only enter and leave the SPAs in a north/south direction during migration, citing an article by Wright (2012) as evidence but without listing it in the bibliography. | Natural England advises that, for clarity, all references are cited. Until the Applicant provides evidence in support of the migratory behaviour of Marsh Harrier Natural England cannot agree that the species can be screened out of the HRA. And, until an assessment of the impacts on Marsh Harrier at the AOE SPA and Minsmere-Walberswick SPA are given, Natural England cannot agree no Likely Significant Effect (LSE) on this qualifying feature. | |
| | J17 | APP-040, Table 38, Sec 9.1.12 | Natural England notes that Nightjar populations at the Minsmere-Walberswick SPA were screened out of the HRA. The Applicant suggests there is no risk of collision on migration during the O&M phase because the birds only enter and leave the SPAs in a north/south direction during migration, citing an article by Wright (2012) as | See comment above (NE Ref J16). | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| | | | evidence, but without listing it in the bibliography. | | |
| Assessment | J18 | APP-040, Table 8.1 | Natural England notes that mitigation for Onshore Ecology and Biodiversity is listed in Table 8.1, but that no mitigation has been included in the details column. | Natural England advises that the table is updated accordingly with the chapter number for Onshore Ecology and Biodiversity we are unable to advise the likely success of mitigation measures in reducing impacts to an acceptable level | |
| | J19 | APP-040, Para 11.6.98 | Natural England requests clarification on the Applicant's intended course of action should the agreed proposed buffer zones for Schedule 1 bird species and other breeding species be unsuccessful. | Natural England advises that further detail on the intended methodology in the event that the proposed buffer zones for Schedule 1 bird species and other breeding species fail is required. | |
| | J20 | APP-040, Para 11.6.191 | Natural England notes that the Applicant does not intend to include mitigation measures for black-tailed godwit, a designated feature of Hamford Water SPA & Ramsar; Stour and Orwell Estuaries SPA & Ramsar; and Blackwater Estuary SPA & Ramsar, on the basis that ' <i>disturbance of a relatively small number of birds could not undermine the conservation objectives or have an adverse effect on site integrity, for the sites where black-tailed godwit is in favourable condition, even without mitigation.</i> ' Natural England does not agree that mitigation is not | Natural England advises that 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. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | required in the event that unscheduled maintenance is required, due to the potential for both noise and visual disturbance. We and advise that a precautionary approach should be implemented. | | |
| | J21 | APP-040, 11.6.343 | Natural England requests clarification on the Applicant's assessment of the cumulative effect of both disturbance and temporary habitat loss to dunlin, a designated feature of Stour and Orwell Estuaries SPA & Ramsar, and Blackwater Estuary SPA & Ramsar . | Natural England advises that clarification is provided on the assessment of cumulative effects for dunlin. | |
| Have the impacts been avoided/reduced by the use of appropriate mitigation? | J22 | APP-225, Sec 4.4 | Whilst Natural England considers the mitigation for vegetation maintenance for the LBBG compensation site to be broadly acceptable, we advise that best practice should be employed for maintaining vegetation community and diversity. Natural England would welcome the opportunity to discuss this further with the Applicant. Existing trackways should be used for access to the compensation site during construction and maintenance/ management, to minimise disturbance and further damage to affected shingle sediment, morphology and vegetation. | Natural England advises that best practice should be employed for maintaining vegetation community and diversity. Further details to be provided in the Lesser Black Backed Gull Implementation and Monitoring Plan (LIMP). | |

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| | J23 | App-225, Sec 4.4.6 & 4.1.9 | Natural England notes that it is stated that if increased nutrients arise due to a gull colony being established (at the Orford Ness compensation site), that affect features within the site, then consideration may be given to removing cut vegetation from the compensation site and the designated site. The aim being to help reduce potential additional nutrients arising from nesting LBBG. It is also stated that this will be detailed in the LBBG IMP. However, this is laid out in the Monitoring, Management, and Maintenance section (4.1.9), as part of 'Habitat Management'. This states that it <i>'will comprise cutting vegetation with a strimmer and removing the arisings to create a mosaic of short and long sward heights, to create optimum nesting habitat for LBBG'</i> . Thus, this would not be additional mitigation to compensate for nutrient increases. | Natural England advises that this should be clarified. And further details should be provided in the outline LIMP. | |
| Assessment Conclusions | J24 | APP-225, Table 4.18 | Natural England does not agree with the assessment conclusions for the LBBG compensation site on Orford Ness with regards to impacts to the shingle morphology due to construction/removal and maintenance of the predator exclusion fencing. It is stated that <i>"the Project could change the shingle</i> | Natural England advises that the Applicant needs to establish a more robust baseline in terms of the shingle morphology and habitats/species present at the proposed compensation site prior to determination, in order to fully consider and assess impacts to the | |

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| | | | <p><i>morphology along the fence alignment [if excavated material is not returned to its original location].</i>" We advise that recoverability of damaged shingle is slow, particularly where it is more static and active geomorphological processes no longer have a major role in shaping the shingle morphology. In addition, machinery and plant will need to be transported from the boat landing to the site which will cause compaction of the substrate and physical damage to vegetation (c. 0.13ha). Undisturbed vegetated shingle communities are dependent on a precise matrix of coarse sediment infilled with fine sediment, which in many cases have developed over long periods of time. These communities could be damaged through the installation of fence posts. Furthermore, unless conducted sensitively and in line with a mitigation strategy, vegetation control could result in a permanent loss of the Annex I habitat, whilst repeated damage is likely to occur through regular maintenance checks and works.</p> | <p>site through installation/removal and maintenance of predator fencing, Future site evolution should also be considered fully in terms of climate change and the sensitivities of the priority habitats.</p> | |
| | J25 | APP-225, Table 4.16 | Natural England is unable to agree with the HRA conclusions for coastal lagoons at Orfordness-Shingle Street | Natural England advises that the Applicant needs to fully consider all potential impacts to the coastal | |

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| | | | SAC. The HRA has not considered whether the presence of the predator exclusion fence over the lifetime of the project could interfere with overtopping and sediment transfer processes, which may in turn alter the flora and fauna in the saline lagoons present within the compensation area for LBBG. Furthermore, climate change-related impacts (including to water level and coastal stability) need to be considered over the lifetime of the project. | lagoons within the Orford Ness LBBG compensation site, over the lifetime of the project and the HRA should be updated accordingly. | |
| Compensatory measures | J26 | APP-255 5.5 | We note that compensatory measures have been proposed for Lesser Black backed gull at Alde-Ore Estuary (AOE) SPA. | We refer the Applicant to our advice in Appendices C & D regarding the avian features of the AOE SPA. | |
| Assessment of SSSI impacts – Document(s) Used: [APP-040] 5.4 Report to Inform Appropriate Assessment, [APP-044] 5.4.4 Summary of Designated Sites, [APP-083] 6.3.1 Onshore Project Description, [APP-261] 9.28 Outline Landfall Methodology, [APP-150] 6.6.4.19 Annex Statutory Designated Sites Qualifying or Notified Features | | | | | |
| Screening | J27 | APP-150 | All relevant sites have been screened in. | Natural England advises that unless there are significant changes in design parameters will not be providing further comment on SSSIs during examination | |
| | J28 | APP-044 | This is titled – Summary of Designated Sites but does not include references to SSSI. | Clarify in title - Maybe it should be state this is for European and Internationally Designated Sites only | |
| | J29 | APP-261, Sec 2.2.1 | Section 2.2.1 of the Outline Landfall Methodology states: <i>The HDD</i> | We are content with the proposed outline landfall methodology and have no concerns regarding the | |

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation | Risk (RAG) |
| | | | <p><i>alignments pass under the Holland Haven Marshes SSSI and the Frinton Golf Club. No surface works are planned in these areas, although non-intrusive survey / monitoring operations may be undertaken in these areas.'</i></p> <p>However, Natural England notes that Mitigation measures have been included within 9.21 Code of Construction Practice should potential impacts occur especially in relation to bentonite frac-out.</p> <p>Whilst these measures are welcome as is consideration in 6.10.56-80 of [APP 87] Environmental Statement - 6.3.6 Hydrology, Hydrogeology and Flood Risk, we note that the Environment Agency ('EA') has previously commented that <i>'Holland Haven Marshes SSSI may be a complex location to achieve the ideal safe drilling through impermeable geology and this will need careful consideration.'</i> We advise that any comments made by the EA in relation to HDD at this location should be given due consideration.</p> | <p>installation across the SSSI, dependent on the proposed mitigation being successfully implemented. However, successful installation is contingent on the assessments. Therefore, we advise that further pre-determination consideration is given to the impacts from bentonite frac-out. We would welcome further risk assessment detailing the likelihood of a frac-out occurring specifically at Holland Haven Marshes SSSI and potential impacts with reference to the features that the SSSI is notified for.</p> | |

Other Onshore Related Matters

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| Other Onshore Related Matters – Document(s) Used: [APP-254] 9.22 Outline Landscape Ecological Management Plan Revision B, [APP-086] 6.3.4 Onshore Biodiversity and Nature Conservation, [APP-152] 6.6.4.21 Protected Species Report and Figures (Confidential), [APP-139] 6.6.4.8 Roosting Bats Tree Survey Report – South of A120, | | | | | |
| | J30 | General | Natural England notes that, based on the information provided by the Applicant, Protected species licences and therefore Letters of No Impediment will not be required. | Natural England advises that impacts to onshore protected species do not warrant a LONI owing to the limited number of protected species licensable. The Local Planning Authority (LPA) will need to ensure that this continues to be the case prior to construction of the development. Consequently, we advise that the following advice and recommendations in our detailed comments below will need to be committed to by the Applicant. | |
| Onshore Protected Species | J31 | APP-086, Drawing 4.1 | Natural England notes that the limitations of protected species surveys include areas that were not surveyed due to access restrictions | Natural England advises that areas should be fully surveyed prior to the commencement of works. If access restrictions remain, a reasonable worst-case scenario should be considered, and appropriate mitigation implemented. | |
| | J32 | APP-086, 4.6.10 | Natural England highlights the duration of impacts refers to short term as <5 years. As per the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for | Natural England advises that the definition of 'short' term' in relation to impacts on protected species should therefore be reconsidered and the impact assessment amended accordingly. | |

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| | | | <p>Ecological Impact Assessment in the UK and Ireland:</p> <p><i>"5.14 Duration should be defined in relation to ecological characteristics (such as the lifecycle of a species) as well as human timeframes. For example, five years, which might seem short-term in the human context or that of other long-lived species, would span at least five generations of some invertebrate species."</i></p> | | |
| | J33 | APP-152, 2.1 | Natural England advises that surveys followed standard methods and refers to Scottish guidance, but surveys were not undertaken during the optimum time for badger surveys. | Natural England advises that where inconclusive evidence is noted, further surveys should be secured and undertaken during the optimum time to ensure confidence in the survey results. | |
| | J34 | APP-152, Table 3-1 | Natural England notes that the survey results lack information relating to badger main setts despite observations of numerous associated setts. | Natural England advises that clarification regarding the location and impacts to main setts is required, and where inconclusive evidence is noted, further pre-commencement surveys should be undertaken during the optimum recommended survey period. | |
| | J35 | APP-139, 1.1 | Natural England notes that trees within exclusion areas have only been subject to Ground Level Tree Assessment (GLTA) surveys. | Natural England advises that Appropriate buffers and/or other mitigation measures secured pre-determination where there is potential for roosts to be present. And that | |

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| | | | We advise that there is a risk of tree roots within exclusion areas being subject to disturbance by works. | pre-construction surveys are secured and implemented. | |
| | J36 | APP-254 | Natural England have approved the use of DLL prior to construction to ensure compliance with the legal status of GCN and mitigate for potential impacts on this species. | <p>Please note that full procurement of the DLL should be undertaken within no more than 12 months prior to the commencement of onshore construction works.</p> <p>The DLL has been applied for on the basis of temporary impacts. Therefore, when the final LEMP is produced post-DCO determination, this must include details to re-instate all terrestrial habitats within the DLL boundary like for like or of better quality for GCN within 12 months of the completion of works.</p> <p>Natural England advises that unless there are significant changes in design parameters will not be providing further comment on GCN during examination.</p> | |
| Biodiversity Net Gain | J37 | APP-149 | <u>Biodiversity Net Gain (BNG) Indicative Design Stage Report</u> BNG requirements for NSIPs are not yet mandatory (currently expected November 2025). Whilst we expect the BNG policy approach for NSIPs to broadly follow that of Town & Country | Natural England advises that the BNG committed is secured in the DCO. | |

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| | | | <p>Planning Act (TCPA) development, the detailed policy requirements are yet to be established. We are expecting a government consultation on the policy to be published shortly which will help to address some current areas of uncertainty regarding NSIPs (including baselining across the entire Order Limits, and the temporary acquisition of land).</p> <p>Therefore, our advice is provided to help the Applicant align their proposals with current BNG best practice, and to maximise the environmental opportunities delivered by the scheme. We note the applicant's commitment to delivering a minimum of 10% BNG (section 1.2.2, pg.2) and advise that this should be secured by requirement in the DCO.</p> | | |
| | J38 | APP-149 | <p><u>Defining 'On-Site' and 'Off-Site'</u> Natural England notes the Applicant's position on the determination of the boundary (Section 2.2.3, pg.7). Taking this suggested approach is acceptable prior to mandatory BNG but does not reflect best practice or</p> | <p>Natural England advises that, for consistency, everything within the Red Line Boundary (Order Limits) should be included in the BNG baseline calculations, including any retained habitats. Furthermore, any deviation from BNG best practice and principles should continue to be justified and clearly reported. Ultimately, BNG</p> | |

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| | | | <p>the approach used for TCPA development.</p> <p>As stated in Section 2.2.2 (pg.6), the baseline area will likely be refined over time and subsequent iterations of the metric calculations can then be used. We agree that updating metric calculations over time is required to reflect design iterations and we encourage developments to continue to maximise their potential biodiversity outcomes throughout the detailed design process.</p> | metric inputs should accurately reflect the built development. | |
| | J39 | APP-149 | <p><u>Mitigation and Compensation</u> Current government guidance is that mitigation or compensation for protected species or designated site impacts can contribute up to "no net loss", with 10% BNG being additional.</p> | We would advise that a clear audit trail is kept of any land assigned for compensation, mitigation and BNG to distinguish what is being delivered for which purpose and where. Relevant guidance on mitigation and compensation in regards to BNG can be found here: What you can count towards a development's biodiversity net gain - GOV.UK (www.gov.uk) | |
| | J40 | APP-149, Sec 2.2.4 | <p><u>Defining Strategic Significance</u> Guidance on assigning strategic significance was updated with the introduction of mandatory BNG in</p> | We advise that the list of biodiversity strategy documents (pg.7) could also include draft habitat maps linked to the emerging Greater Essex Local Nature Recovery Strategy (LNRS). We understand these are still in preparation | |

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| | | | February 2024 (see Statutory Metric User Guide, pg.26). | and will be subject to public consultation before they are published. Once available, they could help ensure that any offsite habitat creation aligns with strategic nature priorities in the wider area. | |
| | J41 | APP-149, Sec 3.2.1 | <p><u>Consideration of Metric Principles and Rules</u></p> <p>Natural England notes that there is no irreplaceable or very high distinctiveness habitat on-site, although it does occur within the Order Limits (pg.11).</p> | <p>As an advisory note, the latest guidance on Irreplaceable Habitat and Very High Distinctiveness Habitat can be found online and in the Statutory Metric User Guide^[1].</p> <p>^[1] See: Irreplaceable habitats - GOV.UK (www.gov.uk) and pg.34: The Statutory Biodiversity Metric - User Guide .pdf (publishing.service.gov.uk)</p> | |
| | J42 | APP-149, Sec 4.1.1 | <p><u>'All Areas'</u></p> <p>Natural England notes the proposed approach to hedgerows outlined in Section 4.1.1 (pg.13) with hedgerows subject to post-reinstatement visits for a period of 5 years after completion. Whilst this approach is acceptable prior to mandatory BNG, it does not reflect best practice, or the approach used for TCPA development.</p> <p>We are awaiting clarity around the policy approach for any land that is temporarily acquired for Nationally</p> | <p>Best practice would be to maintain all replaced hedgerows for a minimum of 30 years in line with BNG regulations. Therefore, Natural England would advise that where the long-term management of hedgerows for this period cannot be secured, they should be treated as "habitat loss" within the BNG metric. Once BNG is mandatory, then a legal agreement would be required to secure the management for thirty years where habitats will be lost.</p> <p>We also advise that for cropland and agricultural grassland, that the correct risk multiplier should be applied to BNG</p> | |

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| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| | | | <p>Significant Infrastructure Projects (NSIPs). As noted previously, we are expecting a government consultation on the policy to be published shortly which will help to address current areas of uncertainty such as this.</p> <p>With regards to cropland and agricultural grassland, we note the points raised and advise that the correct risk multiplier is applied within BNG calculations.</p> <p>As a general note on watercourses, we advise that the riparian zone also includes 10m from the bank top. Please refer to the Statutory Biodiversity Metric User Guide for further information.</p> | <p>calculations, in line with the Statutory Biodiversity Metric User Guide (e.g. pg 34, 'Accounting for temporary losses').</p> <p>Regarding the policy on land acquired temporarily for NSIPs, we refer the Applicant to a government consultation that is due to be published shortly. Although, this may be a matter for the Examining Authority to decide upon.</p> <p>With regards to watercourses, we advise that the riparian zone should extend to 10m from the bank top, however, this is for the Environment Agency to comment on.</p> | |



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES

2010

Appendix K to the Relevant Representations of Natural England
Landscape and Visual Impact Assessment

For:

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

Planning Inspectorate Reference EN010115

21 June 2024

Appendix K – Landscape and Visual Impact Assessment

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

- [APP-064] 6.1.3.1 Cumulative Effects Assessment Methodology
- [APP-083] 6.3.1 Onshore Project Description
- [APP-084] 6.3.2 Landscape and Visual Impact Assessment
- [APP-197] 6.7.10.1 Seascape, Landscape and Visual Methodology
- [APP-198] 6.7.10.2 Seascape, Landscape and Visual Viewpoint Assessment
- [APP-180] 6.7.2.1 Landscape and Visual Impact Assessment Figures
- [APP-181] 6.7.2.2. Figure 2.16a-c VP1 Ardleigh Road near Normans Farm
- [APP-182] 6.7.2.2.2 Figure 2.16d-g VP1 Ardleigh Road near Normans Farm
- [APP-183] 6.7.2.2.3 Figure 2.17a-c VP2 Barn Lane PRoW
- [APP-184] 6.7.2.2.4 Figure 2.17d-g VP2 Barn Lane PRoW
- [APP-185] 6.7.2.2.5 Figure 2.18a-c VP3 Grange Road PRoW
- [APP-186] 6.7.2.2.6 Figure 2.18d-g VP3 Grange Road PRoW
- [APP-187] 6.7.2.2.7 Figure 2.19a-g VP4 Ardleigh Road near Jennings Farm
- [APP-188] 6.7.2.2.8 Figure 2.20a-c VP5 Barlon Road near Little Bromley
- [APP-189] 6.7.2.2.9 Figure 2.20d-g VP5 Barlon Road near Little Bromley
- [APP-190] 6.7.2.2.10 Figure 2.21a-c VP6 Badley Hall Road
- [APP-191] 6.7.2.2.11 Figure 2.21d-g VP6 Badley Hall Road
- [APP-192] 6.7.2.2.12 Figure 2.22a-g VP7 Little Bromley PRoW
- [APP-193] 6.7.2.2.13 Figure 2.23a-f VP8 Lillleys Farm
- [APP-195] 6.7.2.2.15 Figure 2.25a-c VP10 Waterhouse Lane
- [APP-196] 6.7.2.2.16 Figure 2.26a-c VP11 Bounds Farm Hungerdown Lane
- [APP-234] 9.4 Onshore Substation Design Principles Document
- [APP-254] 9.22 Outline Landscape and Ecological Management Plan

1. Natural England's Advice and Recommendations

A summary of Natural England's key concerns in relation to Landscape and Visual Impact Assessment is set out in Table 1. Our detailed advice and recommendations are presented in further detail in Table 2.

Below, Natural England highlights the requirements on decision makers brought about by LURA 2023 which have informed the advice we provide in this Appendix. Natural England advises that S245 LURA 2023 places a duty on relevant authorities in exercising or performing any functions in relation to, or so as to affect, land in a National Park, the Broads or an Area of Outstanding Natural Beauty ("National Landscape") in England, to seek to further the statutory purposes of the area. The duty applies to local planning authorities and other decision makers in making planning decisions on development and infrastructure proposals, as well as to other public bodies and statutory undertakers.

It is anticipated that the government will provide guidance on how the duty should be applied in due course.

In the meantime, and without prejudicing that guidance, Natural England advises that:

- the duty to 'seek to further' is an active duty, not a passive one. Any relevant authority must take all reasonable steps to explore how the statutory purposes of the protected landscape (A National Park, the Broads, or an AONB) can be furthered;

- The new duty underlines the importance of avoiding harm to the statutory purposes of protected landscapes but also to seek to further the conservation and enhancement of a protected landscape. That goes beyond mitigation and like for like measures and replacement. A relevant authority must be able to demonstrate with reasoned evidence what measures can be taken to further the statutory purpose;
- The proposed measures to further the statutory purposes of a protected landscape, should explore what is possible in addition to avoiding and mitigating the effects of the development, and should be appropriate, proportionate to the type and scale of the development and its implications for the area and effectively secured. Natural England's view is that the proposed measures should align with and help to deliver the aims and objectives of the designated landscape's statutory management plan. The relevant protected landscape team/body should be consulted.

Glossary of Acronyms and Abbreviations

| | |
|------|---|
| ES | Environmental Statement |
| LVIA | Landscape and Visual Impact Assessment |
| NL | National Landscape |
| NSIP | Nationally Significant Infrastructure Project |
| OWF | Offshore Wind Farm |
| PINS | Planning Inspectorate |
| VE | Five Estuaries |
| VP | Viewpoint |

Please note: This appendix should be read in conjunction with the Principal Areas of Disagreement Summary Statement (PADSS) contained within our Relevant Representations.

Table 1 Summary of Key Issues – Landscape and Visual Impact Assessment.

| NE Ref | Summary of Key Concerns | Natural England’s Recommendations to Resolve Issues. | Risk |
|--------|---|---|------|
| K1 | Owing to insufficient evidence on the Norwich-Tilbury substation design/impacts at this stage, Natural England is concerned that there is a potential for in-combination/cumulative impacts between this project, the Five Estuaries (VE), and North Falls substations. | Natural England understands that further detail on the Norwich-Tilbury substations is likely to become available during the VE examination. Therefore, we advise that potential in-combination/cumulative impacts between VE, North Falls, and Norwich-Tilbury substations should be fully considered and assessed, when further evidence is available regarding the latter project. In addition, we advise that appropriate mitigation measures should be applied, if necessary. | |

Table 2 Natural England's Detailed Advice and Recommendations – Landscape and Visual Impact Assessment.

| Natural England's Key Considerations | Natural England's Advice | | | | |
|---|--------------------------|---------|---|---|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| National designated landscapes - Document Used: As listed above. | | | | | |
| National designated landscapes | | | | | |
| | K2 | General | We welcome the collaboration between the VE and North Falls Offshore Wind Farm (OWF) Projects to co-locate, and design the layout of, their substations, planted screening and landscape mitigation. This is a positive development in terms of their landscape approach, and we therefore provide no further comment on this matter during examination and defer to the LPA. | None. | |
| | K3 | General | Natural England is concerned that there is the potential for in-combination/cumulative impacts between VE, North Falls and Norwich-Tilbury NSIP substations. The Norwich-Tilbury project is at an earlier stage of design development. Therefore, there has been less co-ordination with this project. Consequently, there is a potential risk for landscape and visual impacts arising from all three projects in combination. While we believe the likelihood of a significant impact to the purposes of the national landscapes is | We advise that potential in-combination/cumulative impacts across the VE, North Falls and Norwich-Tilbury Projects should be fully considered and assessed, when more information is made available. Any Relevant Reps made concerning in-combination/cumulative impacts to National Landscapes arising from all three projects should be considered in all three project submissions and during examination. In addition, Appropriate mitigation measures should be applied, if necessary. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|-----------------------------------|---|--|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| | | | low, there is currently insufficient evidence regarding the Norwich – Tilbury substation design to be able to rule out in-combination effects across all three projects. | | |
| | K4 | P111 VP9 | Natural England agrees with the Applicant that there will be no effect on visual receptors for the Dedham Vale / Essex Way Viewpoint (VP) for both VE alone and VE delivered alongside the North Falls substation. This judgment appears to be consistent with the visualisations presented in 6.7.2.2.14 Figure 2.24a-c VP9 Essex Way Dedham Road, which show that the top of the ONSS as being more or less level with the field boundary hedgerow, and therefore even in winter when the trees are not in leaf, the substation would be screened by the field hedgerow boundary from this VP, plus any intervening vegetation or buildings beyond the field and the site at a distance of approx. 2km. Therefore, Natural England will not provide further comment on NLs during the examination | N/A | |
| | K5 | P113 VP11 Annex 2.2.16: | Natural England notes that Bounds Farm V11 is approximately 1km south of the Dedham Vale National Landscape boundary. While we agree that there is unlikely to be a change to the baseline | Natural England advise that the Applicant considers additional mitigation measures which may address the winter visibility whilst mitigation screening is established. | |

| Natural England's Key Considerations | Natural England's Advice | | | | |
|--------------------------------------|--------------------------|---|---|-----------------|------------|
| Relevant and Written Representations | NE Ref | Ref | Comment | Recommendation. | Risk (RAG) |
| | | Figure 2.26a-c VP11 Bounds Farm Hungerd own Lane | view and therefore no effect on visual receptors for at Bounds Farm, for both VE alone and VE delivered alongside the North Falls substation; there it is a possibility that there may be some visibility in winter at year 0 before mitigation screening is established. | | |
| | K6 | Sec 2.6 | <p>Natural England advises that the above two visualisations, along with the screened Zone of Theoretical Visibility (ZTV) and conclusions within the LVIA provide reassurance that the proposed VE substation, both as a standalone project, and in combination with the North Falls substation, will not be visible from Dedham Vale or Suffolk and Essex Coasts and Heaths National Landscape. Therefore, we agree with the Applicant that there is unlikely to be any significant adverse landscape and visual effects arising to either National Landscape because of the terrestrial aspects of the project.</p> <p>Therefore, Natural England will not provide further comment on NLs during the examination</p> | N/A | |

