FIVE ESTUARIES
OFFSHORE WIND FARM

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10.4.1 APPLICANT RESPONSE TO NATURAL ENGLAND RELEVANT REPRESENTATION

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In preparation of this document Five Estuaries Wind Farm Ltd has made reasonable efforts to ensure that the content is accurate.

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CONTENTS

1 Introduction 4
1.1 Purpose of this document 4
2 Applicant's Response to Relevant Representations: 5
3 Appendix A 133

TABLES

Table 2.1 Applicant's response to Natural England – Main Letter 5
Table 2.2 Applicant's response to Natural England Appendix A – DCO 9
Table 2.3 Applicant's response to Natural England Appendix B – Marine Geology, Oceanography and Physical Processes 16
Table 2.4 Applicant's response to Natural England Appendix C – Offshore Ornithology 27
Table 2.5 Applicant's response to Natural England Appendix D – Ornithology Compensation Case 42
Table 2.6 Applicant's response to Natural England Appendix E – Benthic and Intertidal Ecology 55
Table 2.7 Applicant's response to Natural England Appendix F – Benthic Compensation 75
Table 2.8 Applicant's response to Natural England Appendix G – Fish and Shellfish Ecology 89
Table 2.9 Applicant's response to Natural England Appendix H – Marine Mammal Ecolo 91
Table 2.10 Applicant's response to Natural England Appendix I – Seascape Landscape and Visual 102
Table 2.11 Applicant's response to Natural England Appendix J – Onshore Ecology 113
Table 2.12 Applicant's response to Natural England Appendix K – Landscape and Visual Impact Assessment 130

1 INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

1.1.1 Five Estuaries Offshore Wind Farm (hereafter VE) is a proposed extension of the existing Galloper Offshore Wind Farm located in the southern North Sea, off the coast of Suffolk. Five Estuaries Offshore Wind Farm Limited (hereafter 'the Applicant') is developing the Project.

1.1.2 VE will be located 37 km for the Suffolk Coast in the southern North Sea. VE's turbines will be up to 399 m blade tip height. Up to two inter-array cables will connect the WTGs to up to 2 offshore substations and up to two offshore export cables from these substations will transfer the electricity onshore.

1.1.3 The offshore export cables will transmit the power generated to a landfall compound located at Sandy Point, to the north west of the golf course, adjacent to Short Land between Holland-on-Sea and Frinton-on-Sea on the Essex Coast. The onshore parts of VE comprise of an export cable configuration that will include up to two cable circuits connecting the offshore substation to the proposed Onshore Substation (OnSS) and into the proposed National Grid East Anglia Connection Node Substation (EACN).

1.1.4 For ease of referencing and to facilitate future cross-referencing, the Applicant has included references for the Relevant Representations (RR)s:

- Where RRs were broken down into numbered paragraphs or sections by the respondent, the Applicant has retained the existing references (e.g. NERR-01)

2 APPLICANT'S RESPONSE TO RELEVANT REPRESENTATIONS:

Table 2.1 Applicant's response to Natural England – Main Letter

Ref	Relevant representation comment	Applicant's responses
NE-RR01	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.	The Applicant acknowledges Natural England's concerns in relation to the sites listed in Table 5.1 of their relevant representations but stands by its conclusions on Adverse Effect on Integrity. As outlined in 5.4 Report to Inform Appropriate Assessment [APP-040] and 5.5 Habitats Regulations Derogation Case [APP-046], the Applicant has conceded a derogation case for Lesser Black Backed Gull (LBBG) at the Alde Ore Estuary Special Protected Area (SPA) and Ramsar site and developed 'without prejudice' cases for kittiwake, guillemot and razorbill features of the Flamborough and Filey Coast SPA, and also the sandbank feature of the Margate and Long Sands SAC. Specific responses to Natural England's comments on the methodology and conclusions of the RIAA are dealt with in subsequent sections. The measures which have been developed by the Applicant for both the conceded and 'without prejudice' cases are outlined in the following documents: > 5.5.1 Benthic Compensation Strategy Roadmap [APP-047] > 5.5.2 Outline Benthic Implementation and Monitoring Plan [APP-048] > 5.5.3 Lesser Black Backed Gull Compensation - Evidence, Site Selection and Roadmap [APP-049] > 5.5.4 Kittiwake - Evidence, Site Selection and Roadmap [APP-050] > 5.5.5 Guillemot and Razorbill - Evidence, Site Selection and Roadmap [APP-051] > 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plans [APP-052] > 5.5.7 Kittiwake Implementation and Monitoring Plans [APP-053] > 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plans [APP-054] > 5.5.9 Lesser Black Backed Gull Compensation Site Suitability Report [APP-055] The Applicant believes that the measures outlined in these documents for all species will compensate for any adverse effects on integrity the Secretary of State concludes.
NE-RR02	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.	As outlined in 6.1.3 Environmental Impact Assessment Methodology [APP-063] and section 3.6.3 of this document, the EIA Guidance for Offshore Renewable Energy Project – Guide (BSI,2015) has been followed and as acknowledged by Natural England is commonly used across other projects. The significance of an effect, either adverse or beneficial, is determined using a combination of the impact magnitude and receptor sensitivity. A matrix approach is used throughout the EIA to ensure a consistent and comparable approach. Whilst the ES describes the conclusion of significant and not significant effects, the precautionary approach taken within both the alone and cumulative assessments ensures that impacts are addressed fully and adequately. With regards to cumulative effects and this "cut-off", the cumulative effects assessment considers all effects regardless of if they are significant for the project alone, therefore it is considered there is no risk of errors is assessing cumulative effects adequately.

Ref	Relevant representation comment	Applicant's responses
NE-RR03	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 (ZoI) 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. Natural England notes that PINS Advice Note 10 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.	The Applicant disagrees with Natural England and believes that utilising a tiered approach, as highlighted within PINS Advice Note Ten, for the cumulative effects assessment is a robust and valid method for determining whether development should be included in the assessment and provides sufficient granularity of cumulative projects. With regards to the use of a Zone of Influence, and the consideration of the mobility of the receptor the Applicant takes this into account within the cumulative effects assessment. This is particularly true for receptors such as marine mammals and birds, which are by their very nature mobile species and are thus more likely to be exposed to cumulative impacts. This is reflected in the greater number of projects which are screened in within the cumulative effects assessment for these species. In addition to this, within 6.2.7 Marine Mammal Ecology [APP-076] the tiered approach does align with Natural England's Best Practice Guidance, this is due to the need to consider greater levels of uncertainty in the degree and timing of overlap of activities which will generate significant levels of underwater noise during the construction phase of projects.
NE-RR04	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	This is noted by the Applicant and any relevant protected species licences will be submitted to Natural England, as necessary. Further information is included in the Applicants document 5.8 Details of Other Consents and Licences [APP-060]. The Applicant has submitted and accepted a provisional licence for GCN which was submitted 6.6.4.20 VE OWF - GCN District Level Licencing Impact Assessment and Conservation Payment Certificate - unsigned - and associated documents [APP-151].
NE-RR05	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.	Noted by the Applicant.
NE-RR06	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	Noted by the Applicant and any relevant protected species licences will be submitted to Natural England, as necessary.

Ref	Relevant representation comment	Applicant's responses
	standing advice for protected species which includes links to guidance on survey and mitigation.	
NE-RR07	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.	The Applicant notes that NE provides additional detail in respect of NE-RR07 in J37 - J42 (included within this document). Responses to J37 – J42 should therefore be referred to. The Applicant recognises that the applied method of the BNG metric, to an NSIP project, is a reasonable worst case assessment as outlined in Document 6.6.4.18 Five Estuaries Offshore Wind Farm Biodiversity Net Gain Indicative Design Stage Report [APP-149] please see section on "4.1.2 Cable Corridor" and "4.1.3 OnSS" as to how the metric has been applied the project footprint which would realistically be implemented at construction.
NE-RR08	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.	The Applicant has undergone an extensive site selection process for the Project which has involved incorporating environmental considerations in collaboration with the engineering design requirements. A principle of the site selection process was to avoid Best and Most Versatile (BMV) land where possible. This approach is aligned with NPS EN-1 para 5.10.8, which advises that BMV land should be avoided where possible except where it would be inconsistent with other sustainability considerations and sensitive receptors (including but not limited to infrastructure, residential and archaeology). Approximately 86% of Essex County is provisionally mapped as Grades 1, 2 and 3 (undifferentiated). Generally areas of poorer quality land are located in coastal areas, associated with watercourses or mapped as urban land. The provisional ALC mapping indicates that 89% of the onshore Order Limits are mapped as ALC Grade 1, 2 or 3 (undifferentiated). The Order Limits have been refined and temporary and permanent land take areas are reduced as far as practicable. Therefore opportunity to site the Project within areas of poorer quality land are limited as there is limited availability of poorer quality land within the vicinity of the Project. Regarding protecting soils during development, as set out in 9.21 Code of Construction Practice [APP-253] a Soil Management Plan will be developed by the Principal Contractor, this is secured through a Requirement in the draft Development Consent Order [APP-024]. The Applicant also has a requirement as part of the Development Consent Order to reinstate all land which is used temporarily for construction of the onshore works and not ultimately incorporated in permanent works or approved landscaping post-construction.
NE-RR09	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.	Effects on the National Cycle Network (NCN) and ECP where they intersect with the Project (FP29 167) are considered within the 6.3.8 Traffic and Transport Chapter of the ES [APP-090] and mitigation secured in the Outline Public Access Management Plan (9.25 Outline Public Access Management Plan [APP-258]. The ES sets out that the footpath has a high sensitivity as it is nationally designated and regularly used: England Coast path, very well used, particularly in the summer months. It would be crossed by vehicles accessing the

Ref	Relevant representation comment	Applicant's responses
		beach. The offshore export cable would be installed under the path using HDD /trenchless technique. The proposed route of the England Coast Path (ECP) will not be physically affected via cable installation, owing to the use of a trenchless technique, such as Horizontal Directional Drilling (HDD) that will feed the cables through ducts underground. The use of a trenchless crossing avoids the more sensitive coastal landscape elements, including the beach, sea wall, dunes, marshland, coastal path, sea bank and access track. A field of coastal farmland at a minimum of c. 200 m to the west of the ECP will be disturbed where construction for landfall compound and transition joint bay is planned. However, the visual effects will be limited by the separation distance from the ECP, the relatively small scale and low level of construction, the existing land use of this field for agricultural production, the limited duration of the construction period at 18 months and the ease with which the land will be reinstated. As set out within set out within Table 8.36 of the Traffic and Transport Chapter of the ES [APP-090] a section of the England Coast Path would be used by VE construction vehicles should access to the beach be required. The footpath would be kept open and managed through warning signage and possible segregation (as set out in in the Outline Public Access Management Plan (9.25 Outline Public Access Management Plan [APP-258]). Appropriate signage would be provided advising of an alternative local rerouting. The frequency of the vehicle movements associated with the construction phase of VE that would use this PRoW would be **negligible** therefore very short delays, if at all. Further details on the design of control measures and line of the path, margins etc are included in the OPAMP (9.25 Outline Public Access Management Plan [APP-258]) and would be subject to further design prior to implementation and is secured by the subsequent PAMP.

Table 2.2 Applicant's response to Natural England Appendix A – DCO

Ref	Relevant representation comment	Natural England's recommendation to resolve issues	Applicant's response
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.	This is noted and the Applicant has responded at A11.
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.	The M&LS SAC Benthic Mitigation Plan has been submitted as final as it secures key commitments in relation to the use of cable protection within the designation. The final details of cable protection within the SAC will be set out in the final CSIP. The requirement to follow the commitments set out in the mitigation plan is secured in Schedule 11, Part 2, Condition 13(1)(g)(iv).
A3	Schedule 14 compensation only 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.	Without prejudice schedules will be provided for other species at a later deadline.
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.	The Applicant refers Natural England to the outline landscape and ecological management plan [APP-254] where the detail requested is set out. The Applicant considers it unnecessary to specify these points in the requirement when it can be addressed in detail and secured in the outline plan.
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	The requirement should be amended.	The 9.21 Code of Construction Practice [APP-253] submitted with the application is final not an outline. It is not proposed to submit a later version for approval. No amends are required.

Ref	Relevant representation comment	Natural England's recommendation to resolve issues	Applicant's response
	outline CoCP. Further the requirement refers to sub paragraph (3) of the requirement which does not exist.		
A6	Schedule 2 Requirement 12 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.	The requirement should be amended.	The Applicant is proposing to seek clarification with Natural England on consultation on the LEMP. It is contrary to the aim of allowing pre-commencement works to require plans to be discharged to allow them to commence. ECoW advice would be sought, and supervision as required for pre-commencement works, this is set out in 3.4.1 of the OLEMP [AS-006].
A7	Schedule 2 Requirement 20 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 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.	Consider if the requirement should move.	These requirements relate to the methodology for carrying out works not the provision of compensation and the Applicant considers that they are properly controlled by the LPA not the SoS as they are practical planning matters, not habitats regulations issues.
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.	The Applicant notes that BNG is not a statutory requirement for this project. The Applicant considers that the detail requested should be included in the strategy itself and not in the requirement.
A9	Schedule 10 Part 2 Condition 12 (1) (j)	Natural England recommends that the condition should require the SIP no sooner than 9 months and	The Applicant does not agree with Natural England's proposal as it is too restrictive and may adversely affect the construction programme. The MMO require a minimum of 6 months for the approval of pre-

Ref	Relevant representation comment	Natural England's recommendation to resolve issues	Applicant's response
	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.	no later than 6 months prior to commencement of piling.	construction plans, and where the Applicant has the necessary detail in place ahead of this time, it is prudent to submit in advance to reduce the potential for delays. Piling programmes for projects (to level required for planning under the SIP) will be known greater than 9 months in advance, and therefore it is not reasonable to restrict the submission of the SIP in this way.
A10	Schedule 10 Part 2 Condition 16 and 18 Natural England notes that the monitoring conditions only cover benthic monitoring. However, we consider that Ornithological and Marine Mammal monitoring should also be requirements due to the potential for impact. Please see our comments in Appendices C and H.	Amend to include requirements for ornithological and marine mammal monitoring.	The Applicant has committed to significant ornithological monitoring of potential compensation measures. The Applicant has not identified any obvious monitoring options that would considerably increase the certainty of assessment outcomes, although initial proposals are set out in the Offshore In-Principle Monitoring Plan [APP-265] However, the Applicant is open to continuing to engage with Natural England on this matter.
A11	Schedule 10 Part 2 Condition 17 This condition does not 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: (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. (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 timetable, unless otherwise agreed in writing with the MMO in consultation with the relevant statutory nature conservation bodies. (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	Amend the condition to include the requirement to stop should the noise impacts of the works be significantly in excess of those assessed.	The Applicant is considering this point and reviewing recent precedents and will propose drafting on this point at a later Deadline.

Ref	Relevant representation comment	Natural England's recommendation to resolve issues	Applicant's response
	mitigation, all piling activity must cease until an update to the marine mammal mitigation protocol and further monitoring requirements have been agreed.		
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 and included the condition below for your reference. (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 (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 agreed adaptive management or mitigation, the undertaker shall only be required to undertake the adaptive management or mitigation once the consent is granted.	Natural England requests that a similar condition is included within all dMLs.	The Applicant does not agree with the inclusion of the proposed condition. The EIA process is carried out to ensure that likely significant effects are identified and assessed for the purposes of decision making. Where uncertainty of effects or the efficacy of mitigation or compensation remains, the Applicant has committed to appropriate monitoring and, if necessary, adaptive management. However, it is not appropriate to widen this out to any and all effects, and essentially leave the EIA as an open-ended process. By their very nature, effects that have not been anticipated cannot be assessed. The Applicant through scoping, expert topic groups, statutory consultation and its own expert assessment has sought to identify as far as reasonably possible all likely effects as required by the EIA regulations. The Maximum Design Scenario ensures a precautionary approach is applied and conclusions of significance can be relied upon. The condition proposed holds the Applicant open to responding to any, even non-significant effects, that were unanticipated at the time of its EIA. In the unlikely event that unanticipated impacts are found through monitoring (and it is noted that monitoring is not mandatory and should be focus on areas of uncertainty or predicted significant adverse effects), this should be used for making better and more informed decisions in later EIA processes, not as an opportunity to reassess a project that has already been through the statutory process. This open-ended condition also introduces long term liabilities and reduces certainty of delivery, potentially reducing the commercial viability of the project and introducing unnecessary programme and cost risk.
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	Noted by the Applicant.
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	Consider inclusion of a condition securing the submission of an updated Margate and Long Sands Benthic Mitigation Plan.	The Margate and Long Sands SAC Benthic Mitigation Plan [APP-243] has been submitted as final to ensure the commitments made within it are fixed. Final details of any cable protection to be used in the SAC will be set out in the CSIP. It is considered that compliance with the plan is appropriately secured in Schedule 11, Part 2, Condition 13(1)(g)(iv), and that the detail requested will be provided in the final CSIP.

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	date mitigation techniques. Therefore, we consider that an updated plan should be secured through condition.		
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 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.	Amend the condition to exclude the area of the site within the Margate and Long Sands SAC.	This condition restricts the use of cable protection to being deployed within 10 years from the granting of the Order, not the start of construction or operation, therefore the deployment is already significantly time limited. The Order must be implemented within 7 years of granting, and sometime after implementation must be allowed for construction activities otherwise the condition would be incompatible with the wider DCO. The Applicant considers this restriction appropriate as at allows reasonable flexibility in the timing of construction, whilst restricting deployment of cable protection during operation.
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.	Without prejudice schedules will be provided for other species at a later deadline.
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.	The Applicant has reviewed this for the Deadline 1 revision of the dDCO.
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 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.	Update to include provision of terms of reference, timetable for the preparation and delivery of the LBBG, and a dispute resolution mechanism.	The Applicant considers that this level of detail is unnecessary in the schedule as requirements for forming the OOEG are set out in 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plans [APP-052].
A19	Schedule 14 Para 3 (1)	Recommend amending this provision and consideration of how to appropriately implement a	The Applicant will review this when updating the relevant schedule of the dDCO.

Ref	Relevant representation comment	Natural England's recommendation to resolve issues	Applicant's response
	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.	provision allowing strategic compensation options. This could also be applied to other compensation schedules provided on a without prejudice basis.	
A20	Schedule 14 para 3 (2) (d) and (g) The list of requirements to include in the LIMP is lacking in detail when compared to 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.	Consider amendment to the provision.	As the schedule requires the final LIMP to be in accordance with the outline LIMP submitted with the application (and due to be updated at Deadline 2), the Applicant considers that these are already appropriately secured as part of the outline LIMP and subsequent detailing in the dML is not necessary. The final LIMP is subject to approval by the Secretary of State following consultation with Natural England and other stakeholders, therefore this is the mechanism to ensure all relevant points are addressed before the compensation measure is implemented.
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.	The Applicant is not proposing to increase this period at this time.
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 decommissioning in consultation with the relevant SNCB.	Amend the provision to require the approval of the SoS and consultation with the SNCB.	The Applicant considers it appropriate to link the compensation to the period of impact, which in this case is operation.
A23	[APP-248] 9.17 Outline Offshore Operations and Maintenance Plan Appendix A Natural England notes there are several activities within the table that will require a new marine licence, but are recorded	Suggest this should be amended to reflect the appropriate colour marking.	

Ref	Relevant representation comment	Natural England's recommendation to resolve issues	Applicant's response
	as amber, whereas the traffic light coding provided within the plan indicates that these should be considered red. For example, foundation replacement.		The Applicant notes that these activities are marked amber as they only require a new marine licence if they exceed the parameters included in the MDS (Table 1.31 APP-070). Of the Amber activities only foundation replacement is not present in Table 1.31 MDS for O&M activities; this is because the number of activities is expected to be 0. The Applicant can appreciate the logic of changing this item to red, however the others shall remain Amber.
A24	[APP-248] 9.17 Outline Offshore Operations and Maintenance Plan 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.	The Applicant notes this and will update with the appropriate cross references. An updated document will be submitted at a future deadline.

Table 2.3 Applicant's response to Natural England Appendix B – Marine Geology, Oceanography and Physical Processes

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
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.	The Applicant has undertaken a detailed assessment of the potential for cable protection measures to interrupt sediment transport pathways within and nearby to MLS SAC. This is underpinned by a robust understanding of baseline sediment transport processes, developed through analysis of high-resolution geophysical datasets and complemented by numerical modelling of sediment transport pathways. The assessment set out in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071] draws upon all relevant and available data (to the Applicant's knowledge), including the evidence base from analogous projects. The Applicant has provided a robust assessment that demonstrates, as far as reasonably possible, that there will not be a significant effect on sediment transport process to the determinant of Annex I features 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.	The Applicant has undertaken a detailed assessment of potential cumulative impacts in Section 2.13 of ES Chapter 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. These include Worst Case Scenario (WCS) construction activities in VE, in combination with WCS other projects and activities that might realistically occur at the same time as VE, including aggregate extraction, dredge spoil disposal, and cable burial (listed in Table 2.13 of the same section). The majority of the cumulative impact types assessed (listed in Table 2.14 of the same section) consider suspended sediment plume and sediment deposition type impacts. The results are interpreted for all seabed areas, including MLS SAC.
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.	The Applicant has undertaken detailed assessments of potential impacts due to WCS construction, operation and decommissioning activities, in Sections 2.10, 2.11 and 2.12, respectively, of 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. Section 2.10 considers potential impacts from all aspects of construction such as drilling, bed preparation and cable burial, etc. Impacts to sandbanks/ sandwaves and other seabed morphology are assessed for any location, therefore, including SPA and SAC supporting habitats, protected habitat and significant bedforms within the arrays. Impacts on prey availability as a result of these effects are considered (where relevant) in other topic chapters, e.g. 6.2.4 Offshore Ornithology [APP-073]; 6.2.5 Benthic and Intertidal

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
			Ecology [APP-074]; 6.2.6 Fish and Shellfish Ecology [APP-075]; 6.2.7 Marine Mammal Ecology [APP-076].
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.	The Applicant has adopted the assumption that up to 100% of material is fluidised and displaced from the trench due to cable installation. This is confirmed in Table 2.2 of ES Chapter 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071], "*it is also confirmed that the combined envelope of results (for all sediment disturbance activity types) also accounts for up to 100% of material ejected from the trench during cable installation.*" The Applicant can confirm that this same assumption has also been applied to the supplementary numerical modelling of sediment plumes and associated deposition which will be submitted at Deadline 1.
B5	6.2.1 We have no comments to raise at this stage.	N/A	Noted by the Applicant.
B6	6.2.1 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. 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 may lead to greater impacts over a longer timeframe.	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.	The Applicant has undertaken a detailed assessment of potential cumulative impacts in Section 2.13 of 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. Physical processes type impacts offshore during the construction phase mainly relate to sediment plumes that are created where and when an activity is undertaken that disturbs the seabed. Plume effects on suspended sediment concentration are relatively rapidly dispersed (within minutes or hours, up to days) of individual activities finishing. Therefore, simultaneous operations are the WCS in this respect, and the Applicant respectfully disagrees with Natural England on this point As such, all relevant impact pathways have been identified and impacts are concluded to be not significant. Other potential effects or impacts (e.g. deposition of sediment to the seabed or changes to seabed morphology) would either similarly rapidly become part of the natural sedimentary environment (within the range of natural variability) or would not present a greater or lesser effect or impact if individual occurrences are at a different time. Any difference in a potential cumulative impact caused to the intertidal and foreshore area (e.g. adjacent to the Holland Haven SSSI) by the relative timing of different projects would be difficult to specifically quantify as it would depend on the degree of physical and ecological interdependency between the two areas and any resulting indirect impact on the rate of recovery of each area. However, given that the spatial footprint of direct impact for two projects are unlikely to significantly overlap, recovery of each area seems more likely to mainly relate to the nature and

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
			magnitude of the impacts in each area, irrespective of relative timing.
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.	Details of the landfall methodology were summarised in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. A more detailed description of the proposed works (including the potential use of sheet piling) is set out in 9.28 Outline Landfall Methodology [APP-261]. This sets out the design envelope for the (up to three) sheet piled exit pits (which may be open simultaneously for up to 2.5 years). It should be noted that if any sheet piled exit pits are installed, this will be seaward of any sea defence structures and therefore would not directly interact with any notified features or the site limits of the Holland Haven SSSI. As 9.28 Outline Landfall Methodology [APP-261] describes the hydrofracture modelling has been undertaken, which indicates a low risk of breakout along the SSSI and golf course, with some potential for breakout immediately adjacent to the offshore end, which is out with the SSSI. Nevertheless, if a breakout does occur in the offshore environment any drilling fluid would be expected to disperse relatively quickly.
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	Noted by the Applicant.
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 'up to 50% of material is actually ejected from the trench. The rest is fluidised but retained as sediment cover within the trench.' 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.	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 should be updated in the assessment of impacts pathways for all receptor groups.	The Applicant has adopted the assumption that up to 100% of material is fluidised and displaced from the trench due to cable installation. This is confirmed in Table 2.2 of 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071], *"it is also confirmed that the combined envelope of results (for all sediment disturbance activity types) also accounts for up to 100% of material ejected from the trench during cable installation."* The Applicant can confirm that this same assumption has also been applied to the supplementary numerical modelling of sediment plumes and associated deposition which will be submitted at Deadline 1.
B10	6.2.2, Table 2.8, Pages 60-61	Natural England advises that the Applicant needs to include all potential construction related impacts in the	The impacts associated with boulder clearance, UXO clearance and/or pre-lay grapnel run activities are all implicitly considered within the envelope of cable installation activities presented in

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	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.	WCS assessment of morphological impacts to sandbanks and designated areas of seabed.	6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]: none of these activities have the potential to cause greater impacts (either in terms of morphological change or increases in SSC) than those activities already assessed (such as sandwave clearance and cable trenching). It is also noted that boulder clearance, UXO clearance and/or pre-lay grapnel run activities would (by their very nature) be undertaken in the exact same locations as that for sandwave clearance and cable trenching. Accordingly, any morphological impacts would not be additive. Given that boulder clearance, UXO clearance and/or pre-lay grapnel run activities would be undertaken in advance of sandwave clearance and cable trenching, it is reasonable to assume that the total duration of time within the construction period over which elevated levels of SSC may be experienced will be slightly longer than for an individual activity. However, there are no marine physical process receptors that are sensitive to elevated levels of SSC. Regarding potential impacts upon benthic receptors from UXO clearance please see E8 and E31.
B11	Section 1.11, Figure 1.12 & Table 1.27 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. 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.	Natural England advises that the Applicant should consider potential (indirect) impacts to MLS SAC due to adjacent cable crossing(s) (e.g. with North Falls, Sea Link and NeuConnect). If required, appropriate mitigation measures should be applied, such as minimising the number and extent of cable crossings adjacent to MLS SAC.	The Applicant has undertaken detailed assessments of potential impacts due to WCS number and dimensions of cable crossings in paragraphs 2.11.52 *et seq.* and 2.11.112 *et seq.* of 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. The WCS includes for 13 export cable crossings per circuit (26 total for all cables). The potential impacts of local areas of cable crossing protection on currents, waves and sediment transport are characterised as localised (within metres of the protection). The protection was assessed as unlikely to (individually or cumulatively) cause any measurable long term interruption to sediment transport, but may have a small local scour footprint. No measurable effects are predicted to extend into the MLS SAC. On this basis, similarly small magnitudes and extents of effect at other cable crossings in other locations (which would not overlap with the VE effects, or likely the MLS SAC), were not scoped in as a cumulative impact scenario.
B12	6.2.2, Table 2.8, Section s 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.	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	Details of the landfall methodology were summarised in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. A more detailed description of the proposed works (including the potential use of sheet piling and spud leg or jack up vessel) is set out in 9.28 Outline Landfall Methodology [APP-

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	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.	installation of the Gunfleet Sands OWF export cable installation at Holland Haven.	261]. Figure 1.1 in that document defines the Landfall Exit Pit Piling Zone: trenching could occur anywhere within this zone, extending seaward from each HDD exit pit. Where required, appropriate mitigation has been secured.
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 Plan which is updated and agreed prior to construction.	The Applicant believes that the number of cable repairs/replacements are realistic and are based on an estimated failure rate from recent offshore wind farm cabling experience. The total impact amounts in Table 1.31 within 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071] were calculated by multiplying the "Seabed disturbance volume per offshore export cable (or array cable) repair event (including vessel anchors) by the number of export cable (or array cable) repairs/ replacements over the project lifetime. For example: > For array cables this is 53,762 m^3 multiplied by 8 = 430,096 m^3; > For export cables this 25,057 m^3 multiplied by 9 = 225,513 m^3 The 'Seabed disturbance volume per offshore export cable repair event (including vessel anchors) (m^3)' figure is determined by adding the disturbance from the vessel anchor to the disturbance volume from the cable installation, which is based on the width of the corridor (18m), the depth of the cable trench (3.5m) and the percentage of sediment which will be fluidised. The Applicant notes that an Outline Offshore Operations and Maintenance Plan was submitted as part of the Application (document reference APP-248), which includes detail around the proposed O&M activities.
B14	9.8, Sections 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.	Table 15 within 6.5.2.1 Physical Processes Baseline Technical Report – [APP-099] sets out the main stratigraphic units within the array area that could be disturbed via drilling. In brief, mud, sand and gravel sized sediment could all be present in varying quantities, depending on the precise location at which drilling occurs. The drilled material may disaggregate during the drilling process and become suspended in the water column and/or remain consolidated, being deposited on the seabed close by to the drilling location as larger clasts. At this stage, it is not possible or realistic to accurately predict the dimensions of the drill arisings as this will depend on

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
			(amongst other things) the precise local geology and type of drilling equipment used. A wide range of possible outcomes are possible, ranging from a thick deposit of drill arisings across a small area to thin deposits of drill arisings across a wider area. This variability in outcome has been accounted for in the assessment by presenting results for defined 'zones of effect,' based on a conservative Maximum Design Scenario, as described in Section 2.6 of the 6.5.2.3 Physical Processes Technical Assessment [APP-101].
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.	The Applicant disagrees that seabed mobility and erosion potential have not been assessed in the EIA. It has been assessed in the context of potential changes to wave and tidal driven sediment transport 6.5.2.3 Physical Processes Technical Assessment [APP-101], Section 5 and in the context of Scour 6.5.2.3 Physical Processes Technical Assessment [APP-101], Section 6. No measurable change in residual sand transport rate or direction is predicted either within the VE array, or elsewhere, at the resolution of the model (approximately 200 m). Seabed mobility has also been considered in the context of sand wave recovery following levelling/ clearance activities. It is recognised that recovery times will be spatially variable, likely ranging from a period of months to timescales of 'at least' 10 years - see paragraph 2.10.34 in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]
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 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.	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 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.	The Applicant recognises that there is slight and variable difference between the observed and predicted values for significant wave height and period. However, overall, there is general agreement between the model and measurements from the West Gabbard wave buoy and there is a high degree of confidence that the high magnitude/ low frequency and low magnitude/high frequency events defined using SEASTATES hindcast data and considered in the assessment adequately characterise the range of conditions that might reasonably be expected to occur during the lifetime of the Project. Importantly, the assessment considers the 'relative' change between the baseline and a 'with project' scenario and therefore both contain the same residual errors and uncertainties with regards to the natural environmental processes being simulated. When the difference between the two data is considered, the majority of the errors and uncertainties are in effect, cancelled out.
B17	6.2.2, Section s 2.11.19 - 2.11.26	Natural England advises that further consideration of potential impacts to seabed morphology (and SAC	The Applicant disagrees that impacts to seabed morphology (i.e. sandwaves) related to changes to the tidal regime due to the

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	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.	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.	presence of WTG and OSP foundation structures has not been considered. Changes to the tidal regime have been assessed using numerical modelling, with results presented in 6.5.2.3 Physical Processes Technical Assessment [APP-101], Section 4. Both absolute and relative changes to tidal current speed and direction are very small and as a result, no measurable change in residual sand transport rate or direction is predicted either within the VE array, or elsewhere, at the resolution of the model (approximately 200 m). This assertion has been verified through the numerical modelling of sand transport 6.5.2.3 Physical Processes Technical Assessment [APP-101], Section 4. It follows that if changes to sediment transport are negligible, any associated changes to seabed morphology (including to sandwaves) will be similarly limited.
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 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.	Natural England advises that the Applicant should consider the likely extent and significance of impacts upon SAC supporting habitats/protected habitat morphology within the Array Areas, due to changes to the tidal regime.	Please see response to Natural England Relevant Representation B17 above. The conclusion of the technical assessment is that there will be no measurable change in the residual sand transport rate or direction is predicted either within the VE array, or elsewhere, at the resolution of the model (approximately 200 m).
B19	6.2.2, Section 2.10.12 and 6.5.23, Section 2.6 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. 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 'sands and gravels may deposit in local thickness of tens of centimetres to several metres…', which is an order of magnitude difference.	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).	The Applicant has undertaken numerical modelling to provide further quantification of SSC and the potential for associated changes in bed levels resulting from construction related activities. The results have been provided at Deadline 1.
B20	6.2.2, Section 2.13 Cumulative Impacts to MLS SAC 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	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.	The Applicant has undertaken a detailed assessment of potential impacts due to WCS construction activities, and of potential cumulative impacts, in Sections 2.10 and 2.13, respectively, of ES Chapter 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071].

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	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.		The potential impacts of construction related activities on sediment type and distribution were assessed to be characterised as a local redistribution or displacement of sediment volume (which would be largely 'kept in the local sedimentary system'). Cable protection was assessed as unlikely to (individually or cumulatively) cause any measurable long term interruption to sediment transport or distribution. Therefore, no measurable effects of VE are predicted on sediment volume, extent or distribution at the regional scale, or extending into the MLS SAC. The cumulative assessments do not explicitly consider impacts on regional scale sediment volume or distribution, because the similar assessments of VE alone result in no likely measurable effect, and this would not change or be made more severe in conjunction with other marine activities.
B21	6.2.2, Tables 2.8 & 2.9 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: > potential long-term impacts to the physical environment and marine processes, of any assets left *in situ*.; > emerging alternatives to decommissioning, including repowering and life extension.	Natural England advises that the outline decommissioning plan is updated to consider emerging alternatives to decommissioning and secure any associated monitoring.	As noted by Natural England, and highlighted within Schedule 2 of the Draft DCO, paragraph 24 [APP-024], and if consent is granted, a written decommissioning programme will be drafted ahead of any offshore works commencing, which is required to be submitted to the Secretary of State prior to construction. The decommissioning plan will consider the options available, however it should be recognised that these will continue to evolve over the expected 40 year life span of the project and will be subject to EIA at the time.
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.	Details of the landfall methodology were summarised in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. A more detailed description of the proposed works (including the potential use of sheet piling) is set out in 9.28 Outline Landfall Methodology [APP-261]. This sets out the design envelope for the (up to three) sheet piled exit pits (which may be open simultaneously for up to 2.5 years.) Landfall works will be controlled through the CEMP which will be in accordance with the 9.21 Code of Construction Practice [APP-253].
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	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	Morphological variability at the landfall is described in Section 5 of 6.5.2.1 Physical Processes Baseline Technical Report [APP-099]. This uses all relevant publicly available data to characterise observed change in beach elevation.

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	infrastructure may become exposed during the lifetime of the project.	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.	It is in the Applicant's interest to ensure cables remain buried throughout the lifetime of the project, with the final cable burial depth determined during detailed design, following further survey where required. The approach to cable burial monitoring will be set out in the Cable Specification and Installation Plan, however it is not intended to undertake project specific monitoring of intertidal elevation change as this is already undertaken by The Anglian Coastal Monitoring Programme, with a continuous and long-running programme extending back to 1987. The Environment Agency also periodically collect and publish LiDAR data in this region. These survey data will be used to monitor elevation change at the Landfall throughout the lifetime of the Project.
B24	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 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.	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 ensure remedial measures will be undertaken should impacts be greater than predicted.	The Applicant recognises that pre- and post-installation surveys are required in relation to sand wave levelling in the Margate and Long Sands SAC. To this end, measures have been proposed in 9.32 Offshore In Principle Monitoring Plan [APP-265] – see paragraph 4.6.6 and 4.6.10 that specifically target the Margate and Long Sands SAC. The Applicant does not intend to undertake any monitoring of sand wave pre-sweeping and recovery outside of the Margate and Long Sands SAC (i.e. in areas not specifically designated for receptors directly sensitive to this effect.) It is the Applicants view that the conclusions of the impact assessments are not subject to a level of uncertainty that warrants any subsequent monitoring. It should also be noted that the Applicant has removed Gravity Base Structures from the MDS, which reduces the worst case seabed preparation.
B25	6.2.2, Section s 2.10.50 & 2.10.53 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. 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	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.	A robust understanding of baseline conditions within the Marine Physical Processes study area has been set out in 6.5.2.1 Physical Processes Baseline Technical Report [APP-099]. This draws upon high resolution Project-specific geophysical survey and grab sample date collected from Array Areas and Export Cable Corridor, as well as a large body of high-resolution bathymetric survey data from this area – which is amongst the most intensively surveyed areas of seabed around the UK. It is also complemented by detailed numerical modelling of sediment transport pathways within and nearby to the Project. The assessment set out in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071] draws upon all relevant and available data known to the Applicant, including the evidence base from analogous projects: further supporting

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	of the conservation objectives further away from their desired trajectory.		information is not available. The Applicant considers the assessment to be thorough and robust and concludes both within the physical processes assessment and benthic ecology assessment there will be no significant effects upon protected habitats. However, the Applicant would welcome the opportunity to review and incorporate the evidence cited by Natural England relating to the 'significant alteration of the sandbanks [within the MLS SAC].'
B26	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 57,600m2 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.	The area of seabed in which laydown areas could be created is defined by the potential maximum extent of trenchless works. This is shown in Figure 1.1 in 9.28 Outline Landfall Methodology – [APP-261]. The potential impacts associated with their installation has previously been described in full - see paragraphs 2.10.74 to 2.10.77 in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. In brief, whilst the footprint of the laydown areas is moderately large, the vertical extent of change is very small (up to 1 m) and within the range of naturally occurring variability. This, coupled with the fact that no mobile material will be removed from the local sedimentary system means that the potential for change to waves, tides and sediment transport is very limited. The Applicant disagrees that the combined sensitivity/importance of the coast should be classified as 'high' rather than 'medium'. Whilst it's importance is fully recognised, the baseline analysis presented in Section 5 of 6.5.2.1 Physical Processes Baseline Technical Report [APP-099] has demonstrated that this shoreline is a dynamic environment and subject to natural change under baseline conditions. Accordingly, it is assessed to have some capacity to recover from (short-term) disturbance.
B27	6.2.2., Sections 2.11.12 8-130, 2.11.78 & 5.4, Section 11.2.92 Impacts to Sediment Transport Regime in MLS SAC due to external cable protection Natural; England notes that it is stated that 'only very minor changes are expected to the sediment transport regime and any associated morphological impacts are also expected to be very limited' due to the presence of 900m (5400m2) of cable protection within MLS SAC. However, we are concerned that MLS SAC has already 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	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 evidence to demonstrate that the presence of cable protection measures within MLS SAC will not affect sediment transport processes operating at the site.	9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243] states that cable protection within the M&LS SAC is a last resort. Paragraph 4.5.1 of 9.12 Outline Cable and Specification and Installation Plan [APP-242] states that '*It should be stressed that cable burial is the preferred method of installation, and additional cable protection will only be used as a contingency where cable burial is not appropriate or achievable*.' Additionally (as described in 9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243]), within the M&LS SAC, the Project has made the mitigation commitment that "Rock dumping using loose rock will not be considered a feasible

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	> 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. However, we advise that there is insufficient evidence to support these conclusions		protection in the M&LS SAC" (due to difficulties in removal during decommissioning). Instead, other types of cable protection, such as mattresses, will be used where necessary. Other types of cable protection (including mattresses) will tend to be of even lower height above the seabed than equivalent rock berms, further reducing the potential for interaction with sediment transport. Should cable protection be required, any associated impacts to sediment transport will be low, as assessed in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. Specifically, the assessment finds that sediment transport pathways towards or away from the M&LS SAC would be not measurably affected (locally or regionally) by the presence of the maximum dimensions and/or extent of external protection proposed (of any type) by the Project. A small amount of sediment accumulation within or adjacent to the protection is theoretically possible (although does not always occur in practice) but the maximum potential effect on sediment transport is fundamentally limited by the relatively low height of the protection above the seabed (typically in the order of tens of centimetres for mattresses). Following any initial period of (limited) sediment accumulation, there is no reason why sediment transport will not then continue over the protection at the natural rate and direction; there is no uncertainty in this conclusion. The maximum seabed area and sediment volume theoretically affected is many orders of magnitude smaller than that of the M&LS SAC (locally and as a whole) and also smaller than the individual sedimentary macro-bedforms within it (sandwaves or sandbanks). Any localised effects around the protection will also be distant from any such individual features and from the majority of the M&LS SAC area.

Table 2.4 Applicant's response to Natural England Appendix C – Offshore Ornithology

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
C1	An Adverse Effect on Integrity (AEoI) 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.	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.	The assessment included the summed collision mortalities of the north and south arrays for LBBG at AOE SPA. The Applicant will update the estimated mortalities and compensation quantum using the Natural England preferred approach for both the north and south arrays and re-run the PVA with five years burn-in for both the project alone and in-combination effects on the AOE SPA qualifying feature. These results will be available at Deadline 1.
C2	PVAs were run without a burn-in period	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.	The Applicant will re-run the PVA with a burn-in of five years and will be presented for all the relevant species at Deadline 1 using the updated in combination numbers. This is anticipated to make no material difference to the conclusions presented within 5.4 Report to Inform Appropriate Assessment [APP-040].
C3	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.	Provide the omitted data so an appropriate assessment can be made of the risk posed to protected Razorbill populations at the Farnes SPA.	The Applicant has not included razorbill impacts on the Farne Islands because the predicted impact from the displacement was 0.00%, with apportioning of adult birds attributed to the SPA less than 0.01% due to the small size of the colony. It should be noted that razorbill is only an assemblage feature of Farne Islands SPA and has a relatively small breeding population (just 0.36% of the regional breeding population).
C4	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.	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. 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.	The Applicant has used site-specific adult proportions using the DAS data for all relevant species. It should be noted that for guillemot, razorbill and kittiwake are screened out during the breeding season and therefore have been assessed by apportioning impacts using the proportions derived from the tables in the Appendix of Furness (2015). Details of this can be found in the Apportioning Appendix to 5.4 Report to Inform Appropriate Assessment [APP-040], which has been updated at Deadline 1.
C5	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.	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.	The Applicant will submit both the Natural England's preferred approach (70% displacement and 2% mortality) to the total in-combination impacts. The Applicant will submit this alongside the Applicants preferred approach of 50% displacement and 1% mortality. These approaches are highlighted in paragraph 11.4.35 of 5.4 RIAA [APP-040]. These updates to 5.4 Report to Inform Appropriate Assessment [APP-040], will be provided at Deadline 1.

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	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.		
C6	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.	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.	The Applicant will present the results using the 70% displacement and 2% mortality for the worst-case scenario for guillemot and razorbill and will run the PVA with 5 years burn-in. The results will be presented for both the project alone and in-combination assessments alongside the Applicants preferred approach of 50% displacement, 1% mortality. These results will be provided at Deadline 1.
C7	6.2.1 and 6.2.4 No comment required	None	Noted by the Applicant.
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.	The Applicant welcomes Natural England's agreement in this improved methodology.
C9	6.2.4 sec 4.4.3, Table 4.2; 5.4, sec 11.4.60 -61; 9.18.1, sec 3.3.2 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. 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	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). Due to the risk posed by vessel movements Natural England strongly recommends all vessel activity within the	The Applicant has committed to a seasonal restriction within the SPA during cable laying and follow Natural England best practice guidelines on vessel movements during all other phases of the development for both the ECC and array. The data from Irwin *et al* shows that the RTD densities within the ECC are not high and shipping data from within the ECC show low to medium vessel traffic. The ECC therefore does not cover areas of unimpacted habitat. Densities of RTD are low in the shipping lanes in the area, however there are high density areas immediately outside of the shipping lanes suggesting that a 2km buffer is overly precautionary in this area. The area of the SPA that the cables go through has lower (but not zero) shipping activity with a medium density RTD. With shipping low to medium density, the addition of a single construction vessel undertaking, for example, surveys, pre-lay grapnel run

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	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.	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.	etc is entirely within normal shipping activity variability and would therefore not increase disturbance in any meaningful way. The Applicant has identified cable laying within the SPA as having greater potential for disturbance, and that is why it has committed to a timing restriction for that activity in that area only. Any other works in the ECC outside the SPA would be largely indistinguishable from background traffic given the already high density and would not lead to additional impacts on the SPA. See Appendix A: Figure 3.1
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.	The Applicant welcomes Natural England's agreement in this improved methodology.
C11	6.2.4, 6.5.4.1 6 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. 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 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).	The Natural England preferred scenarios should be used as the basis of the impact assessment.	The Applicant considers their approach to be evidence driven, which provides a balanced and appropriately conservative assessment of the impacts. Uncertainties in parameters have been included in collision risk modelling and results have been presented with associated confidence intervals. The Natural England approach has also been presented for comparison.
C12	6.5.4.1 0; 6.5.4.8 Natural England welcome the testing and comparison of CRM outputs from the stochLAB	Natural England agree that using stochLAB makes no material difference to the findings of the CRM.	The Applicant welcomes Natural England's agreement on this matter.

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	package with those obtained from the online shiny app tool.		
C13	6.5.4.1 6, sec 2.2.5 The PVA modelling was run excluding a 'burn in' period for all species and sites. 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.	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).	The Applicant has re-run the PVA with a burn-in of 5 years and will be presented for all the relevant species in the updated assessment. These results will be submitted at Deadline 1.
C14	6.1.3.1, Table 3.2, 6.2.4, sec. 4.13.4 and 4.13.9 The Cumulative Effects Assessment (CEA) considers an arbitrary 500km Zone of 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.	Natural England advise that the spatial scale for scoping in other projects for consideration in the CEA (i.e., defining a ZOI) should be based on a suitable evidence base (e.g., the relevant BDMPS). 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.	The Applicant welcomes Natural England's acknowledgement on this matter.
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.	The Applicant will keep abreast of discussions about in-combination assessments and update the assessment at an appropriate time when impacts are agreed.
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 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.	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 advise that for the key input parameters below, uncertainty around the parameter estimates should be considered on an individual parameter basis: > Monthly bird density;	The Applicant has presented collision risk estimates using the upper and lower 95% confidence intervals of seabird density obtained for each month and Natural England has agreed that seabird density varies by the greatest amount and is therefore the most influential source of variation in collision risk estimates. The other parameters which Natural England has noted for consideration of variation, on an individual basis, all vary across much smaller ranges and therefore the collision risk estimates obtained from the requested analysis will simply have the same mean estimates (as those submitted) but with smaller confidence intervals, reflecting the variation in whichever parameter is being varied. This has previously been demonstrated by Masden (2015) and also in previous wind farm applications (e.g. Norfolk Vanguard 2018, from page

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	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	> Flight height; > Avoidance rate; and > Nocturnal activity factor 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.	651). There is therefore limited value in presenting the same mean collision risks but with narrower confidence intervals that merely reflect the narrower ranges of those individual parameters investigated. Masden, E. (2015). Scottish Marine and Freshwater Science Vol 6 No 14: Developing an avian collision risk model to incorporate variability and uncertainty. Published by Marine Scotland Science. DOI: 10.7489/1659-1. http://www.scotland.gov.uk/Resource/0048/00486433.pdf Norfolk Vanguard (2018) Norfolk Vanguard Offshore Wind Farm Appendix 13.1 Offshore Ornithology Technical Appendix Environmental Statement Volume 3 – Appendices [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010079/EN010079-001547-Appendix%2013.01%20Ornithology%20Technical%20Appendix.pdf] – accessed 02/08/2024
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 counterfactual population size or reduction in population size for gannet, kittiwake and LBBG.	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%. Whilst a significant cumulative effect cannot be ruled out for some 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.	PVA for cumulative impacts on gannet, great black-backed gull, lesser black-backed gull, herring gull, kittiwake, guillemot and razorbill will be undertaken using the NEPVA tool as requested. Red-throated diver is not parameterised in the NEPVA tool and therefore it will not be possible to provide a cumulative impact PVA for this species. These updates will be provided by Deadline 6.
C18	6.2.4, secs. 4.10.36 and 4.10.46 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 the array and EC construction is stated as less at 14 birds. The	Clarity should be provided on if the combined impacts on RTD during the construction phases of the EC and turbine array.	The estimated number of red-throated divers displaced within the offshore export cable corridor was up to 142, and at a worst-case mortality rate of 10%, the mean annual mortality would be 14.2 individuals. For the Array Areas, the similar worst-case mortality was 0.2 individuals, leading to a mean annual total of 14.4 individuals. This was rounded down to 14 individuals; however, it should be noted the resultant increase in mortality rate would still be 0.5% for both 14 or 15 individuals. Overall, our conclusions conclude there is no potential adverse effect on integrity to the

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	combined impacts must be more or the same but not less than stated for one phase of the work.		conservation objective to maintain the population levels of the red-throated diver feature of OTE SPA in relation to disturbance and displacement effects in the C&D phase from VE alone and in-combination.
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, '*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*'.	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 and a 2km buffer to ensure risk to RTD are minimised according to best practice.	The Applicant has committed to seasonal restrictions for vessel movements in the SPA during the construction for cable laying activities and will follow the Natural England best practice guidance to ensure that all suitable habitat contained in the SPA will remain undisturbed for red-throated divers in the area.
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 contrasting approaches. Furthermore, we note that the 'NE residual significance' presented does not always align with the Natural England position on EIA scale impacts.	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 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.	An additional CEA note will be provided by Deadline 6.
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 "the distribution of the qualifying features within the site", not RTD mortality. Consequently, if RTD are displaced from an area of the SPA, then the conservation objective is hindered. Appropriate	The Applicant has already committed to seasonal restrictions (1 November to 31 March inclusive) for cable laying vessel movements in the SPA during the construction and decommissioning phases and will follow the Natural England's Red Throated Diver best practice guidance. The Applicant strongly considers this mitigates against impacts in the non-breeding season for the wintering red-throated divers at the OTE SPA and should result in almost a complete reduction in the impacts associated with vessel traffic. The Applicant will also update the description of the scale of impacts, referencing Garthe *et al* 2023, although it should be noted that the array area is over 17 km from the OTE SPA boundary, thus beyond the disturbance footprints of 9-12 km found in Garthe *et al*. The Applicant has also provided further evidence in response C9 above, which strongly demonstrates that a +2km buffer is overly precautionary within this area.

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		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 +2km buffer will be essential to guarantee no AEoI.	
C22	6.2.4, sec. 4.11.73 ; 5.4, sec. 11.4.35 -38 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. 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)	We recommend that the ExA should consider the following alongside the Applicant's assertions: 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). Natural England are not aware of any evidence for habituation, and thus, declining displacement of auks from OWFs over time. Guillemots and seabirds in general also continue to experience multiple human induced pressures that offshore developments are at risk of accentuating. 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.	The Applicant notes there is growing evidence that 50% mortality, 1% displacement is a more appropriate precautionary approach, with evidence from the Beatrice OWF: Year 2 Post-construction Ornithology Monitoring 2021 report (MacArthur Green, 2023) highlighting there was little indication of guillemots responding negatively or positively to the presence of an OWF and that the upper end of the displacement rates currently used in assessment is over estimating the extent of displacement. Despite there being limited data on habituation, habituation to OWFs by auks has been clearly demonstrated at the Thanet OWF where statistically significant auk displacement was demonstrated but only in the short term (Royal Haskoning DHV, 2013). Further evidence is constantly being collected as additional post-construction monitoring continues with reports of auk numbers increasing within the windfarm itself (Leopold and Verdaat, 2018). This would strongly suggest that there is habituation, and the displacement rates will dimmish over the operational life of the OWF.
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 about apportioning birds to FFC SPA.	Within the RIAA and Apportioning Note breeding season impacts were apportioned to FFC SPA (74%) and 26% to the Channel Islands sites for gannet. No impacts were apportioned to any other transboundary sites.

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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.	It should be noted that razorbill is only an assemblage feature of Farne Islands SPA and has a relatively small breeding population (just 0.36% of the regional breeding population). The Applicant has not included razorbill impacts on the Farne Islands because the predicted impact from the displacement was 0.00%, with apportioning of adult birds attributed to the SPA less than 0.01% due to the small size of the colony.
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.	The most relevant results were presented in table form in 5.4 RIAA [APP-040] and therefore for brevity the matrices for the C&D were omitted. Impacts for the full range could have been calculated by the reader from the apportioned abundances presented throughout. Following Natural England's responses the Applicant is content to present the displacement matrices for all relevant species screened into the HRA. This will be presented in an updated RIAA submitted at Deadline 1.
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%).	Noted, the Applicant welcomes this agreement.
C27	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 does not agree with the Applicant's process for adult apportioning subject to HRA, notably the breeding population of gannets at the FFC SPA. 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. 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	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. 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	The Applicant has already presented the Natural England advised approach (using site specific DAS data) for lesser black-backed gull regarding aging of adults in the assessment alongside the Applicants preferred approach, and have followed a similar approach for gannet, see updated 6.5.4.15 Apportioning Note [App-117] at Deadline 1. The Applicant considers the Furness (2015) data to be more appropriate for LBBG as it draws from many studies across many years rather than a snapshot of one day per month over two years, with aging from DAS data not being 100% accurate and over representing the numbers of adults by counting all 'adult-like' birds. Aging for several other species is not required as they are not being assessed for the breeding season e.g. kittiwake, guillemot and razorbill and as with the latter two are not possible to be aged using DAS data.

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
	project area. Furthermore, we believe it should be possible to age a representative sample of gannets from DAS data. 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 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.	also suggest that the apportioning of adult birds should be season-specific to account for any seasonal variations in the use of the site. An updated assessment based on Natural England's advised approach should be submitted into the Examination in due course.	
C28	6.5.4.1 5 sec. 2.2.15- 21 Sabbatical rates were incorporated into the assessment (where they were available). We note that "The sabbatical rates presented align with those recommended by Marine Scotland for the Seagreen Phase 1 Offshore Project (Marine Scotland, 2017)." 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. Further, the use of these rates is not justified or evidenced in the cited document. 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 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. Key issues that currently preclude the proper consideration of sabbaticals but were apparently not considered by the Applicant, are briefly detailed below.	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. We advise that integrity judgements should be based on assessments that do not remove sabbatical birds at the apportioning stage.	The Applicant set out why using sabbatical rates is a more appropriate method for apportioning, in Section 2.2.15 to 2.2.21 of the Apportioning Note (6.5.4.15 Apportioning Note, [APP -117]) and the sabbatical rates presented align with those recommended by Marine Scotland for the Seagreen Phase 1 Offshore Project (Marine Scotland, 2017). Sabbatical rates (representing the proportion of birds not breeding in a given year) were incorporated into the assessment where available to provide a more accurate approach to the number of adults using the array area that are actually breeding in the SPAs that given year. However, the Applicant has presented both Natural England's alongside the Applicants approach in the updated 5.4 RIAA [APP-040], which will be submitted at Deadline 1.

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	> 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. 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. > 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 This section of the ES states that "*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.*" We highlight that the studies referenced in the Horswill & Robinson (2015) review are 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	The Applicant should cite this research so it can be appraised.	The Applicant's approach remains the same because sabbatical rates were incorporated into the assessment, where available, to provide a more accurate approach to the number of adults using the array area that are actually breeding in the SPAs that given year and were advocated by Marine Scotland. Not including sabbatical rates would lead to an over estimate of impacts to breeding birds. The research mentioned by Natural England are cited below: Horswill, C. & Robinson R. A. 2015. Review of seabird demographic rates and density dependence. JNCC Report No. 552. Joint Nature Conservation Committee, Peterborough. Calladine, J. & Harris, M.P. 1997. Intermittent breeding in the herring gull Larus argentatus and the lesser black-backed gull Larus fuscus. Ibis, 139, 259–263.

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	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. 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).	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.	Noted, the Applicant has reviewed and amended Table 11.35 in 5.4 Report to Inform Appropriate Assessment [APP-040] at Deadline 1. The total losses should be 7.48 birds for the north and 3.61 birds for the south during the breeding season using the Natural England's preferred approach. Following the re-run of the PVA with 5 years burn-in, both Table 4.1 in the 6.5.4.16 Population Viability Analysis [APP-118] and Table 12.30 in 5.4 Report to Inform Appropriate Assessment [APP-040] have been amended at Deadline 1 with the new results. These updates do not alter the conclusions of the assessment.
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 incombination 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).	The Applicant will present the results using a 70% displacement and 2% mortality rate for the worst case scenario for guillemot and razorbill and will run the PVA with 5 years burn-in. The results have been presented in both the project alone and in-combination assessments alongside the Applicants preferred approach of 50% displacement, 1% mortality, at Deadline 1. Displacement matrices for guillemot at the Farnes SPA will also be added to the updated assessment.
C32	5.4,sec s. 12.4.2 9, 12.4.4 6 The Applicant has applied their preferred displacement (50%) and mortality (1%) rates to the guillemot and razorbill populations at risk at each	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	Noted, the Applicant has presented the results using the 70% displacement and 2% mortality to the most recent agreed total in-combination impacts. The results will be presented alongside the Applicants preferred approach of 50% displacement, 1% mortality, within an updated 5.4 RIAA [APP-040] at Deadline 1. The results will also be

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	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 impact estimates that were agreed by the SoS for recently consented OWFs. 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.	that Five Estuaries (VE) OWF will be adding to this impact. 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.	presented within the compensation documents for auks which will be updated at Deadline 2.
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.	The Woodward *et al.* (2023) paper mentions 'data from the North Sea suggest that between 25% and 50% of flights may occur at rotor height' for brent goose. Therefore, the Applicant has used the most precautionary recommended rate. It is also the default rate used for this species within the NatureScot mCRM tool.
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 conservation advice (i.e. October to May).	The Irwin et al data falls within these two months and there aren't any other robust datasets outside the migration free season to assess impacts accurately. North Falls OWF baseline survey data found the peak abundances to be within the migration free winter period, therefore the Irwin data was used as representative of this period and a worst case scenario for the full non-breeding season (North Falls OWF 7.1.4 Report to Inform Appropriate Assessment Part 4 Offshore Ornithology) .
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.	The Applicant welcomes Natural England's comment on this matter.
C36	5.4, sec 12.4.1 17-123 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. In particular, the Applicant suggest that if the impacts from Galloper on kittiwake, guillemot and LBBG are	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.	Noted, the Applicant has presented both approaches in an updated 5.4 Report to Inform Appropriate Assessment [APP-040] and the Applicant's position is that projects that are providing compensation should be excluded from in-combination totals because these projects are obligated to fully compensate for their impacts.

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	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. Natural England are actively engaged with industry considering ways that 'as-built' parameters can be used within assessments. However, at present we do not consider it appropriate to reduce impact estimates by considering as-built parameters unless those parameters are legally secured. 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.		
C37	5.4, sec. 11.4.3 4 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 bioseason - 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. 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 assessing displacement of auks in the non-breeding season.	See note above	Noted by the Applicant.
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.	The Applicant has reviewed and updated the text on the 6.5.4.15 Apportioning Note [APP-117] to 40% and submitted these changes at Deadline 1. All analysis were based on 40% apportioned to AOE SPA.
C39	5.4 11.4.3 9	The Applicant should evidence this statement. Natural England consider it entirely reasonable to assume that	Significant numbers of guillemots will be dispersing and migrating south from North Sea east coast colonies during the post-breeding period. It is recognised that some of these birds will use the Five Estuaries array area but the abundance within the array area is

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	The Applicant states that for auk species "*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*".	migrating auks may forage and roost in the array area during migration.	low in comparison with other projects and there is no evidence or clear reason why guillemots would favour foraging within the Five Estuaries array area compared with the wider region. Therefore, the Applicant considers that this area is not an important foraging habitat for guillemot and that the majority of birds in the post-breeding dispersal season will be transiting through the site. For razorbill the majority of birds were recorded in the migration free winter period, with only small numbers recorded during migration periods.
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.	The Applicant has committed to monitoring of potential compensation measures as set out in the Offshore In-Principle Monitoring Plan [APP-265], which has been updated for Deadline 1. The Applicant has not identified any obvious monitoring options that would considerably increase the certainty of assessment outcomes. However, the Applicant will continue to engage with Natural England on this matter.
C41	We are unable to agree the effects of the project on some species subject to HRA. 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.	Seabirds continue to experience multiple human induced pressures 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 AEoSI at FFC SPA for kittiwake and guillemot. 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.	The Applicant has presented the scale of the impacts on guillemot for the Farne Islands and FFC SPA and the LBBG population at AOE SPA in 5.4 Report to Inform Appropriate Assessment [APP-040], which will be updated at Deadline 1. The impact on razorbill at the Farne Islands was 0.00 breeding adults for both at 50/1 and 70/2 but it hasn't been added to the RIAA. Within the updated RIAA, the in-combination assessment and PVA has been updated to include impacts from recently submitted applications. In addition, Natural England's responses from the relevant representations were addressed when updating the assessment. Therefore, the in-combination assessment for guillemot at Farnes SPA, guillemot, gannet and kittiwake at FFC SPA and lesser black-backed gull at AOE now presents the agreed assessment approach using Natural England's preferred methodology and, where appropriate, the Applicant's preferred approach. There are no updates to the assessment conclusions compared to the RIAA [APP-040].
C42	5.5.5. sec 3.1 & 3.2 The Applicant gives an unhelpful and misleadingly brief outline of the current status and recent population trends for guillemot and razorbill.	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 2000), primarily at English and Welsh sites, including the south-west.	The Applicant presented the population change over the past 40 years (23% increase) which is more representative for an English perspective (and where the impacts are being assessed), where increases in populations have continued. The Applicant's outline for the razorbill population trends was taken from the SMP database. The recent numbers from Burrell et al. 2023 show a slightly different trend with populations increasing. These increasing trends further support the Applicants conclusions of no AEoI at FFC SPA for guillemot and razorbill features.

Ref	Relevant Representation comment	Natural England's Recommendations to Resolve Issues	Applicant's Response
C43	Proposed VE compensatory measures	Please refer to our detailed comments on the ornithology compensation in Natural England Appendix D.	Noted by the Applicant.

Table 2.5 Applicant's response to Natural England Appendix D – Ornithology Compensation Case

Ref	Relevant Representation Comment	Applicant's Response
NE-RR10	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.	The Applicant has carried out initial surveys during the 2024 breeding season on all 10 sites and will provide a site survey report at examination. Water-based recreational activities were noted to have caused disturbance at a number of these sites. An updated Guillemot and Razorbill Implementation and Monitoring Plan (GRIMP) [APP-058] will be submitted at Deadline 2, setting out potential measures at the short-listed sites. The GRIMP sets out to need for pre-implementation monitoring. Many of the potential measures do not require secured land, and local stakeholders are being contacted. Wardening is proposed as a potential measure.
NE-RR11	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.	Noted by the Applicant. The Applicant has held regular meetings with Defra regarding the Marine Recovery Fund and as highlighted by Natural England are awaiting further information. However, the Applicant is confident the Marine Recovery Fund may be a suitable option and expect it will become the key mechanism for the delivery of compensation measures for offshore wind projects in the near future.
D1	FFC SPA Guillemot and Razorbill 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.	Noted. The Applicant welcomes the support for this measure. Initial monitoring has been carried out to identify disturbance at the proposed sites [see 10.11 Guillemot and Razorbill – Survey Reports] and will submit an updated GRIMP at Deadline 2 setting out potential measures for further development.
D2	FFC SPA Guillemot and Razorbill	Noted. The Applicant has carried out initial surveys during the 2024 breeding season on all 10 sites and will provide a site survey report at Deadline 1.

Ref	Relevant Representation Comment	Applicant's Response
	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 applicant to update the Examination on any work carried out during the 2024 breeding season. 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.	The survey established the sites that can be easily observed and monitored to establish annual counts and productivity rates. If required, monitoring in future breeding seasons will be focused on the selected site(s) and a robust monitoring programme for the selected site(s) will be implemented. The Applicant will continue to consult with Natural England on progress through examination.
D3	FFC SPA Guillemot and Razorbill 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. 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). We broadly agree with the monitoring approach, however, we emphasise that it is important that as much time as possible is spent observing the	Noted by the Applicant. See answer above at D2.

Ref	Relevant Representation Comment	Applicant's Response
	colonies to record disturbance events and their consequences, and to gather as much data as possible on direct causes of nest failure. 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. 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.	
D4	FFC SPA Guillemot and Razorbill 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.	The Applicant has presented both the Natural England preferred approach (70% displacement and 2% mortality) and the Applicant's preferred approach (50% displacement and 1% mortality) within the updated 5.4 RIAA [APP-040], submitted at Deadline 1. These approaches are highlighted in paragraph 11.4.35 of 5.4 RIAA [APP-040] outlining why the Applicant believes the Natural England preferred method is overly precautionary, with studies showing displacements rates of 31% to 41% at Thanet OWF after year one (Royal Haskoning, 2013).
D5	FFC SPA Guillemot and Razorbill 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.	Noted by the Applicant. The Applicant welcome Natural England's support.
D6	FFC SPA Guillemot and Razorbill 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. 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.	The Applicant has noted this and during baseline data monitoring we will also be investigating the most appropriate compensation measures per site including assessing set-back distances. The Applicant will provide clarity on the implementation timescales at a later Deadline in an updated 5.5.8 Guillemot and Razorbill Implementation and Monitoring Plans [APP-054].

Ref	Relevant Representation Comment	Applicant's Response
D7	FFC SPA Guillemot and Razorbill 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.	Noted by the Applicant. The majority of proposed measures would not require landowner consent or securing of land.
D8	FFC SPA Guillemot and Razorbill 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. 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.	Noted by the Applicant. The Applicant is aware of the monitoring requirements for these sites and has proposed adaptive management measures in the GRIMP. Further monitoring pre-implementation is proposed.
D9	FFC SPA Guillemot and Razorbill 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.	Noted by the Applicant.
D10	FFC SPA Guillemot and Razorbill 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. 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.	Noted by the Applicant. The Applicant is following these avenues including a collaborative approach.
D11	FFC SPA Guillemot and Razorbill	See response to D2. In addition:

Ref	Relevant Representation Comment	Applicant's Response
	> 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. > 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.	> The Applicant has carried out field surveys to the sites during the 2024 breeding surveys to address some of the uncertainties. > The Applicant is in dialogue with stakeholders. > The Applicant has visited each site and assessed the potential for monitoring at each site. > The Applicant has surveyed each site and the selected site(s) will be based on based on the ability to monitor the colony and disturbance issues. > Adaptive management measures will be developed alongside these plans.
D12	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.	Noted by the Applicant. The Applicant welcomes Natural England's support for this without-prejudice compensation measure. Clarity on the approach to apportionment will be provided at a subsequent deadline.
D13	FFC SPA Kittiwake 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.	Noted. The Applicant is in active discussions with DBS OWF to provide further clarity on the matters noted by Natural England. Updates on the progress of this measure will be provided throughout examination.

<table>
<tr><th>Ref</th><th>Relevant Representation Comment</th><th>Applicant’s Response</th></tr>
<tr><td>D14</td><td>FFC SPA Kittiwake

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.</td><td>Noted by the Applicant. See response to D12.</td></tr>
<tr><td>D15</td><td>FFC SPA Kittiwake

The measure is technically feasible. No further comment required.</td><td>Noted by the Applicant.</td></tr>
<tr><td>D16</td><td>FFC SPA Kittiwake

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.</td><td>The Applicant will present both the mean impact value and the 95% UCI impact value for the compensation requirement in the 5.5.4 Kittiwake Compensation – Evidence, Site Selection and Roadmap [APP-050] at Deadline 2. The Applicant’s preferred approach is to use the mean values as they are more representative of the predicted impacts, with the use of the UCI values likely to over compensate for the impacts.

The range of compensation quantum calculated is:
<table><tr><th colspan="7">Kittiwake compensation quantum</th></tr><tr><td></td><td colspan="6">Mortalities = 0.82 (mean) & 2.35 (UCI)</td></tr><tr><td>Methods</td><td colspan="2">HOW4</td><td colspan="2">HOW3 stage 1</td><td colspan="2">HOW3 stage 2</td></tr><tr><td></td><td>Mean</td><td>UCI</td><td>Mean</td><td>UCI</td><td>Mean</td><td>UCI</td></tr><tr><td>1:1</td><td>2.2</td><td>6.3</td><td>2.5</td><td>7.1</td><td>5.3</td><td>15.2</td></tr><tr><td>2:1</td><td>4.4</td><td>12.6</td><td>4.9</td><td>14.2</td><td>10.6</td><td>30.4</td></tr><tr><td>3:1</td><td>6.6</td><td>18.9</td><td>7.4</td><td>21.2</td><td>15.9</td><td>45.7</td></tr></table></td></tr>
<tr><td>D17</td><td>FFC SPA Kittiwake

The scale/extent of the measure has the potential to be proportionate to the predicted losses.</td><td>Noted by the Applicant.</td></tr>
<tr><td>D18</td><td>FFC SPA Kittiwake

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</td><td>Noted by the Applicant. See answer to D12.</td></tr>
</table>

Ref	Relevant Representation Comment	Applicant's Response
	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.	
D19	FFC SPA Kittiwake 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. 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.	Noted by the Applicant. The Applicant welcomes the support of Natural England on this measure.
D20	FFC SPA Kittiwake 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.	The Applicant will commit to relevant adaptive management where it relates to the lack of success of the compensation measure itself.
D21	FFC SPA Kittiwake Success criteria/ability to provide additionality have been established.	Noted by the Applicant.
D22	FFC SPA Kittiwake 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.	This reflects the Applicants preferred approach.

Ref	Relevant Representation Comment	Applicant's Response
D23	FFC SPA Kittiwake 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	Noted by the Applicant.
D24	Alde Ore Estuary Special Protection Area (AOE SPA) Lesser Black Backed Gull (LBBG) 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.	The Applicant concludes that either measure will be more than enough to compensate for the compensation quantum required. The Applicant considers the proposed measures to be mutually exclusive, not complementary, and each option on its own has the potential to compensate many times more than the required compensation quantum.
D25	AOE SPA LBBG 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. 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. There is also uncertainty regarding whether the birds will find and occupy the compensation site at AOE SPA, and until further monitoring is carried	Noted, the Applicant has committed to more ecological surveys and pre-implementation surveys at the AOE SPA site to identify and minimise any impacts from installing the fence. The Applicant will present and updated number of additional breeding pairs required based on both the Applicant preferred approach and Natural England's preferred approach in the Lesser Black Backed Gull Implementation and Monitoring Plan [APP 052] at Deadline 2. Further monitoring is due to take place at the Outer Trial Bank, during the next breeding season. The AOE SPA site is within the red-line boundary of the DCO application, therefore can be secure through compulsory acquisition if required and negotiations into the access and use of Outer Trial Bank is at an advanced stage.

Ref	Relevant Representation Comment	Applicant's Response
	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.	
D26	AOE SPA LBBG 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. 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.	The Applicant is liaising with North Falls about potential collaboration in the compensation measures.
D27	AOE SPA LBBG 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. 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.	The Applicant has carried out further ecological surveys at the proposed AOE SPA compensation site(s) to identify and minimise any impacts from installing the fence. An outline approach into the methodology and schedule of management for the OTB will be submitted during Examination.
D28	AOE SPA LBBG 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	The Applicant will clarify the magnitude of collision mortality for LBBG using both the Applicants preferred approach (Furness, 2015 aging of adults excluding sabbatical rates) and Natural England's recommended approach (site specific aging using DAS data, no sabbaticals) within an updated 6.5.4.15 Apportioning Note [APP-117], which is highlighted in the table below. The Applicant believes not including sabbatical rates would lead to an over estimate of impacts to breeding birds as will using site specific DAS data aging for LBBG as the adult totals include 'adult like' birds that are not adults.

<table>
<tr><th>Ref</th><th>Relevant Representation Comment</th><th>Applicant’s Response</th></tr>
<tr><td></td><td>been resolved, Natural England is unable to agree the number of additional breeding pairs required to achieve compensation.

Furthermore, the compensation requirement so far presented has been derived based on the mean number of mortalities predicted by the 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.</td><td>The Applicant will also present the compensation quantum based on the mean impact value and the 95% UCI in the 5.5.3 Lesser black-backed gull Compensation – Evidence, Site Selection & Roadmap [APP 049], which will be updated at Deadline 2.

<table><tr><th colspan="5">LBBG compensation quantum</th></tr><tr><td></td><td colspan="4">Mortalities = 5.7 and 11.31 (mean) & 26.74 and 53.07 (UCI)</td></tr><tr><td>Methods</td><td colspan="2">HOW4 Applicant</td><td colspan="2">HOW4 NE</td></tr><tr><td></td><td>Mean</td><td>UCI</td><td>Mean</td><td>UCI</td></tr><tr><td>1:1</td><td>21.4</td><td>100.3</td><td>42.42</td><td>199.06</td></tr><tr><td>2:1</td><td>42.8</td><td>200.6</td><td>84.84</td><td>398.12</td></tr><tr><td>3:1</td><td>64.2</td><td>300.9</td><td>127.26</td><td>597.18</td></tr></table></td></tr>
<tr><td>D29</td><td>AOE SPA LBBG

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.</td><td>Noted, the Applicant will present a range of ratios from 1:1 to 3:1 in the compensation quantum calculations, which will be updated at Deadline 2 [APP 049]. Considering the compensation measure is being applied at the impacted SPA a 1:1 ratio is more appropriate, however the size of the site selected (6 ha) has the potential to compensate for 2,400 pairs which equates to a 12:1 ratio and will therefore vastly overcompensate for the impacts. The quantums can be found in the Applicants response to D28.</td></tr>
<tr><td>D30</td><td>AOE SPA LBBG

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.</td><td>Noted by the Applicant, both proposals will be carried forward during examination by the Applicant, however the Applicant considers the proposed measures to be mutually exclusive, not complementary, and each option on its own has the potential to compensate many times more than the required compensation quantums.</td></tr>
<tr><td>D31</td><td>AOE SPA LBBG</td><td>The Applicant notes that conversations with the landowners at the compensation sites are ongoing. The Applicant took the decision to include the AOE site within the Order Limits in order to provide security of delivery with the potential to use compulsory acquisition powers if necessary. Therefore both Natural</td></tr>
</table>

Ref	Relevant Representation Comment	Applicant's Response
	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.	England and the Secretary of State can have confidence in the delivery of the measure at AOE. The OTB site is owned by The Crown Estate, which cannot be the subject of compulsory powers, and is not in the Order Limits.
D32	AOE SPA LBBG 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.	The Applicant provided an outline to the fence maintenance schedule in the 5.5.6 Lesser black-backed gull Implementation and Monitoring Plans [APP-052].
D33	AOE SPA LBBG On site monitoring to assess breeding numbers and productivity are proposed and deliverable.	Noted by the Applicant.
D34	AOE SPA LBBG 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).	Noted by the Applicant. The Applicant is carrying forward both sites into examination, however the Applicant considers the proposed measures to be mutually exclusive, not complementary, and each option on its own has the potential to compensate many times more than the required compensation quantums.
D35	AOE SPA LBBG Key uncertainties: > 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 Applicant has noted the key uncertainties and has tried to address some of these above where possible. Work is ongoing for the compensation measures and any new information that has become available since submission will be reviewed. Updates will be delivered at a later deadline. > There can be confidence of delivery of the AOE measure as it is within Order Limits and will benefit from compulsory acquisition powers, whilst noting the Applicant's strong preference to reach voluntary agreement with landowners.

Ref	Relevant Representation Comment	Applicant's Response
	> 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.	> The Applicant will commit to implementing the measure at least four years in advance of operation, and implementing adaptive management and lessons learnt from the existing Norfolk and Scottish Power Renewables measure as part of establishing the site. > Fence maintenance is described in 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plans [APP-052] (Section 5.4.4) and will form part of the final LIMP for approval. > The Applicant has committed to undertake pre-implementation surveys of the final agreed fence line, in addition to survey data currently being acquired. The works are very small scale in nature and are not predicted to have significant effects on the designated features, as set out in 6.8.1 Lesser Black Backed Gull Compensatory Areas Environmental Impact Assessment [APP-225]. > Negotiations on the OTB site are ongoing with the landowner, lessee and manager of the site. > Presence of rats and signs of predation were noted in the RSPB 2023 survey. Therefore, there can be a high likelihood that the breeding success of the LBBG population is being effected, and that predator eradication would lead to an increase in LBBG numbers. > The Applicant is actively seeking more information on the proposed measures but considers that even with the current evidence it is clear that either measure would be appropriate compensation for the LBBG impact. > The Applicant notes that external factors beyond the project's control may limit LBBG growth, however the measures proposed along with suitable adaptive management will provide the best opportunity availability to increase LBBG numbers.
D36	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	Noted, the Applicant has outlined their status on each of these checklist points in Table 1.2 of the 5.5.3 LBBG Compensation – Evidence, site selection and roadmap [APP-049]. Where applicable this table will be updated at a future Deadline.

Ref	Relevant Representation Comment	Applicant's Response
	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.	

Table 2.6 Applicant's response to Natural England Appendix E – Benthic and Intertidal Ecology

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
E1	In-sufficient evidence 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.	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.	The maximum length of cabling within MLS SAC is 900 m as noted within Table 5.2 (6.2.5 Benthic and Intertidal Ecology – [APP-074]), as Removable cable protection (if required) within the M&LS SAC = 5,400 m^2 (6 m width protection over 900 m). Available data indicates burial within M&LS SAC is likely to be successful, and as such the 900 m is highly precautionary. Figure 6.1 within 9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243] indicates the potential amount of cable protection as 450 m per cable, and a maximum of 900 m. To obtain a reasonable maximum the Applicant has made some assumptions to avoid compounding conservatism. The Applicant has assumed each cable would be 900m in the SAC and would require up to 50% external protection. Use of post protection is unlikely to occur and is seen as a highly conservative assumption. Evaluation of ground conditions is being used for route optimisation for burial to mitigate need for post protection, this adds weight to the assumption that external protection is considered unlikely to be necessary. As such there is confidence that the MDS represents the worst case, and the Applicant's conclusion of no AEoI can be relied upon.
E2	Impacts on SPAs 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.	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.	The Applicant notes that as detailed within the 6.2.5 Benthic and Intertidal Ecology [APP-074] chapter of the ES, the Project will be implementing a seasonal piling restriction to mitigate against impacts from underwater noise from piling operations in the array area on spawning Downs herring, which provides further reassurance against potential impacts to fish as prey items for SPA birds. The Applicant notes that where indirect impacts are predicted to occur to offshore SPAs, this is discussed within the offshore assessment. SPA supporting habitats identified in Table 5.10 are well represented by the biotopes presented and assessed within Section 5.11 to 5.13 of the 6.2.5 Benthic and Intertidal Ecology [APP-074] chapter of the ES. The assessment notes the national importance of the supporting habitat features within the OTE SPA and assigned a medium sensitivity as a result (paragraph 5.11.77). The designated features of OTE SPA are all generally fish feeders and as such, the supporting habitat present within the OTE SPA would primarily be required to support the availability of fish prey. Due to the low-medium

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
			adverse impacts predicted to benthic habitats within the assessment, the Applicant is confident that this would not result in secondary impacts on fish prey availability. In addition, it should be noted that impacts upon prey species are discussed and assessed in 6.2.4 Offshore Ornithology [APP-073] across all phases of the development. Due to the negligible or minor adverse impacts, no significant impacts upon prey availability is expected.
E3	Worst Case Scenario – O&M 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.	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.	The word additional in the context around cable protection as stated in the 5.4 Report to Inform Appropriate Assessment [APP-040] and the 9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243] was with reference to the addition of any volume of cable protection should cable burial without any protection not be feasible. For clarity within the context of the assessments, the word additional has been removed from 5.4 RIAA [APP-040] and will be updated as necessary in relevant documents at future deadlines. The Applicant considers the requirements for cable protection within the SAC has been considered and is covered within the MDS of 5,400 m^2.
E4	RIAA Natural England does not agree with the Applicant's conclusion of No AEoI 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.	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.	The Applicant notes Natural England's position on AEoI in relation to the Annex I Sandbanks associated with the MLS SAC. The Applicant concluded no AEoI based on the negligible area of habitat loss associated with the MLS SAC (5,400 m^2, 0.0008 %), with the Project committing to not exceed this value within the Margate and Long Sands Benthic Mitigation Plan [APP-243] and within Table 8.1 of the 5.4 Report to Inform Appropriate Assessment [APP-040]. The project has adopted robust mitigation measures by committing to only using cable protection after exhausting all options to bury, and where cable protection is used to not used rock dumping and instead use protection that can be removed upon decommissioning, such as concrete mattresses. These measures are secured in the M&LS SAC Benthic Mitigation Plan. Given the assessment and conclusions drawn in the RIAA, the Project is not proposing the implementation of further commitments or changes to project design and therefore no updates to the assessment of the MLS SAC are required.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
E5	Natural England advises that mitigation measures fail to consider the potential presence of Section 41 Natural Environment and Rural Communities (NERC) Act 2006 Habitats	Natural England advises that where possible impacts to Section 41 NERC Habitats are avoided and due consideration is demonstrated	The Applicant has noted that pre-construction surveys will be undertaken to determine the location, extent and composition of any habitats of principal importance (Section 41 of the 2006 Natural Environmental and Rural Communities (NERC) Act) and/or Annex I and impacts to the features will be avoided as far as reasonably practicable (6.2.5 Benthic and Intertidal Ecology [APP-074]). These considerations in cable routing will be set out in the final Cable Specification and Installation Plan.
E6	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.	The Applicant notes that if cable protection is required within MLS SAC outside of the 'construction period', an additional ML and associated assessment may be required. Schedule 10, Part 2, Condition 25 and Schedule 11, Part 2, Condition 26 of the dDCO commits the project to installing cable protection within a 10 year period from the granting of the order.
E7	APP-242 9.12 APP-239 9.9 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. These documents are written from an engineering perspective rather than from an ecological one trying to	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.	The Applicant has set out the justification for the MDS of cable protection within the SAC in response to E1. Outside of the construction period any further cable protection would require an additional Marine Licence.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
	understand the impacts from sub optimally buried cables and potential impacts to designated sites.	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.	
E8	APP-070 6.2.1.1 Natural England advises that without further detail being provided it is hard to determine if the WCS is realistic. For example, > it is not clear if the boulder clearance impacts include depositing of the boulders and if yes in areas with similar boulders. > 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 exit pits are so large.	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 the potential to hinder the conservation objectives for the site both Alone and in-combination.	Where boulders need to be cleared within MLS SAC, boulders will be deposited within areas of similar seabed. Details of the removal of UXO will be provided separately in a Marine Licence application, however 9.14.2 Outline Marine Mammal Mitigation Protocol – UXO [APP-245] has been submitted at application for information. Trial trenching will not be conducted within the MLS SAC, this will be secured within an updated 9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243]. The HDD landfall area is well outside of the MLS SAC area and has no potential to hinder the conservation objectives for the site both alone and in-combination. A detailed description of the proposed landfall works (including the potential use of cable protection) is set out in 9.28 Outline Landfall Methodology [APP-261]. This sets out the design envelope for potential cable protection, which may need to be installed on areas where the target trenching depth isn't achieved. Cable protection will be buried in the intertidal section and out to 1,600 m seaward of MHWS will not consist of loose rock or gravel. Regarding the size of the exit pits, it is considered that they are not large compared to other similar offshore wind projects. The size of the pit is governed by the HDD exit angle (approximately five degrees), the depth of mobile sediments (typically a few meters) and the width of the trenching tool (at least 12 m) that may enter the pit.
E9	APP-238 9.8	Natural England advises that in addition to being within same sediment type, commitments should also be made and	The Applicant considers the MDS to be a robust characterisation of the VE Project's potential impacts on the environment. As described in Section 3.6.3

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
	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.	secured to avoid priority areas and/or key areas of supporting habitats for mobile interest features of designated sites.	of the 9.8 Dredge Disposal Site Characterisation Report [APP-238] disposal of spoil *in situ* is the most environmentally robust approach. The designated sites supporting habitats are presented within Table 2.7 of 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. Qualifying features described in Table 5.10 of 6.2.5 Benthic and Intertidal Ecology [APP-074] are well represented by the biotopes presented and assessed within Section 5.11 to 5.13 concluding Minor Adverse significance which is not significant in EIA terms. The impacts on designated areas of seabed are presented in Impact 2 of 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071] and concluded to be Minor Adverse which is not significant in EIA terms. Additional mitigation is outlined in Table 5.14 of 6.2.5 Benthic and Intertidal Ecology [APP-074] and Table 2.4 of 9.31 Schedule of Mitigation - Routemap [APP-264] as well as within 9.13 Margate and Long Sands Special Area of Conservation – Benthic Mitigation Plan (APP-243).
E10	APP-238 9.8 Natural England highlights that evidence to support VE disposal activities includes those permitted and assessed in 2008 and due to the age of this evidence it cannot longer be relied upon e.g. LID OWFs.	Natural England highlights that whilst we do not believe it will make a material difference to the assessment for this project, the evidence used would not normally be supported by the SNCBs as set out in the OWF best practice guidance.	The Applicant notes this response and agrees it is unlikely to make a material difference to the assessment. Please see supplementary recent evidence supporting the stance of no EIA significant adverse effects from potential VE disposal activities include RPS (2014), PMSL (2019) and EGS (2017) RPS (2014) 'LID Year 3 Post-Construction Monitoring Summary Report.' Document Number: LD-O-CE-013-0000-000000-324-D Precision Marine Survey Ltd. (2019) 'Westermost Rough Offshore Wind Farm Post Construction Benthic Survey (2019). Technical Report' Report Ref: P11050-OWMR-ME-TR-000111-02 EGS (2017) 'Lincs OWF - Post Construction Geophysical Survey 2017' DOC. REF.: 5706_CREL_OPS-R_REV1
E11	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.	The Applicant confirms that mitigation for disposal within and without designated sites have been included as explained below. The disposal of drilled and dredged materials in both Array Areas (Paragraphs 5.1.4 and 5.1.6 of 9.8 Dredge Disposal Site Characterisation report [APP-238]) and OECC (APP-238 9.8 Paragraphs 5.1.9 and 5.1.12) is expected to occur close to the area of disturbance and consequently no change, or slightly change, might occurred concerning sediment size and characterisation. This method corresponds to a mitigation measure to

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
			minimise the change of sediment size and characterisation within the Array Areas and along the OECC. The Applicant highlighted in 9.8 Dredge Disposal Site Characterisation report [APP-238] Paragraph 2.1.4 that subsequent drill arisings from foundation installation will be disposed "at sea adjacent to the foundation location" and give example from post-disposal monitoring that this method did not show "long-term adverse effects on the overall benthic ecology of the study area" (9.8 Dredge Disposal Site Characterisation report [APP-238] Paragraph 2.1.5). Finally, the Applicant mentioned the use of discharge pipes for both foundation and cable installation (9.8 Dredge Disposal Site Characterisation report [APP-238], Paragraphs 2.1.2 and 2.1.7), which will release sediment at the sea bed adjacent to the area of disturbance.
E12	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.	The Applicant explained, in 9.8 Dredge Disposal Site Characterisation report [APP-238] Paragraph 6.2.14, that the levelled area due to disposal "are not considered likely to create barrier to sediment transport" compared to aggregate dredging activities, occurring at much bigger scale (in order of km), which do not influence wave and tidal regime at regional scale and so the associated sediment transport. As such, the Applicant does not agree that monitoring is required, however this will be confirmed in the final Offshore In-Principle Monitoring Plan. The Applicant developed, in 9.8 Dredge Disposal Site Characterisation report [APP-238] Paragraph 6.2.23, that the berms associated with trenching activities will be present for a short period of time (few weeks maximum), which won't change hydrodynamics and sediment transport in long term. Mitigation measures in the intertidal area are presented, 9.8 Dredge Disposal Site Characterisation report [APP-238] Paragraph 6.2.25 to minimise the impact on waves and associated sediment transport.
E13	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.	The Applicant has provided a robust assessment, based on a realistic worse-case scenario that demonstrates, as far as reasonably possible, that there will not be a significant effect on sediment transport process to the determinant of Annex I features of the SAC, or outside of the designated site (6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071]. The final proposals for cable protection will be set out in the Cable Specification and Installation Plan for approval.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
			The Applicant notes that the potential use of cable protection in the MLS SAC are specifically controlled in 9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243].
E14	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	This is noted by the Applicant.
E15	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	This is noted by the Applicant.
E16	6.2.5 Natural England has no comments to make that would result in a material difference to benthic receptors. Therefore, unless there is a change in the project design parameters, we will provide no further comment on the data during examination.	N/A	This is noted by the Applicant.
E17	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.	The Applicant has noted that pre-construction surveys will be undertaken to determine the location, extent and composition of any habitats of principal importance (Section 41 of the 2006 Natural Environmental and Rural Communities (NERC) Act) and/or Annex I and impacts to the features will be avoided as far as reasonably practicable (6.2.5 Benthic and Intertidal Ecology – [APP-074]). This would include avoidance of any *Sabellaria spinulosa* reef that develops and is identified on the pre-construction surveys.
E18	APP-074 6.2.5 Section s 5.12 and 5.13 (e.g. 55.11.6 9)	Natural England advises that full consideration of the likely nature, extent, duration, and significance of impacts upon	Please see the Applicant's response to E2.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
	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.	SPA supporting habitats is required to inform a robust assessment of the likely impacts upon designated ornithological features.	
E19	APP-243 9.13 Table 2.1 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 impacts on sandbank features, which would reduce the number of cables, based on 'project timescales and supplier issues. In addition, we draw your attention to Annex 2 of this Appendix where the progression of a coordinated approach discussed in more detail.	Natural England advises that that the Applicant considers further mitigation measures to reduce the project impacts from transmission asset installation and maintenance.	A reasonable worse case assessment has been made regarding the use of non-HVDC cables within the ECC. A HVDC solution is not financially viable for connecting Five Estuaries given its distance to shore and project capacity. Further, the project is proposing two HVAC cables, with any other solution requiring at least two cables to allow for redundancy, therefore there is no reduction in impact from an HVDC solution in any case. Utilizing HVDC technology also results in significantly larger onshore substation which must be considered. Further mitigation measures are set out in 9.13 Margate & Long Sands SAC Benthic Mitigation Plan [APP-243].
E20	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.	The Applicant has provided a robust assessment, based on a realistic worse-case scenario that demonstrates, as far as reasonably possible, that there will not be a significant effect on sediment transport process to the determinant of Annex I features of the SAC. The Applicant concluded no AEoI based on the negligible area of habitat loss associated with the MLS SAC (5,400 m^2, 0.0008 %), as made in a project commitment.
E21	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	This is noted by the Applicant.
E22	APP-040 5.4	N/A	This is noted by the Applicant.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
	Please see below, where we disagree with No AEoI we also disagree with the Likely Significant Effect (LS) screening.		
E23	APP-040 5.4 Section 3 Natural England 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.	The National Policy Statement for Renewable Energy Infrastructure (EN-3, DESNZ 2024) was referred to in the drafting of the RIAA, as discussed within paragraph 4.1.4. EN-3 informs the approach to the RIAA and the types of impacts considered. Additionally, the Applicant has made reference to and utilised the Defra (2021) draft Best Practice Guidance for Developing Compensatory Measures in relation to Marine Protected Areas (MPAs) within 5.5.1 Benthic Compensation Strategy Roadmap [APP-047]. The guidance forms part of the assessment of options for potential compensation for MLS SAC.
E24	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.	Table 6.1 states a value of 0.02% of the SAC (0.16 km^2) as a direct quote from the Natural England Section 42 comments received on 07/09/2023. As stated in the response to that comment within Table 6.1, the amount of cable protection has been reduced since the initial consultation in 2023. In the assessments, only the 0.0008% (0.0054 km^2) value has been used to determine impacts to the MLS SAC and therefore the Applicant considers that it is clear how the assessments have been undertaken, and no updates to the assessment is required.
E25	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.	The Applicant notes that an Outline Offshore Operations and Maintenance Plan was submitted as part of the Application (document reference APP-248), which includes detail around the proposed O&M activities and is to be updated and submitted at a future deadline.
E26	APP-040 5.4 Para. 11.2.5 Section 12 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 RIAA and Benthic ES chapter will need to be updated.	The Applicant notes that the conservation objectives for the MLS SAC are discussed within each impact assessment, once the updates to advice packages are made public in Autumn 2024/March 2025, the assessments could be updated if it is still appropriate to do so. The Applicant requests that NE provide timescales for when this information will be available.

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	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.		
E27	APP-040 5.4 11.2.5 9 and 11.2.1 8 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'. 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	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. 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.	The word additional in the context around cable protection as stated in the updated 5.4 RIAA [APP-040] was with reference to the addition of any volume of cable protection should cable burial without any protection not be feasible. For clarity within the context of the assessments, the word additional has been removed from the 5.4 RIAA – Revision B [APP-040] which will be submitted at Deadline 1. The applicant considers the requirements for cable protection within the SAC has been considered and is covered within the MDS of 5,400 m^2.
E28	APP-040 5.4 2.5.2 Natural England notes that the list of projects that have a benthic compensatory requirement doesn't include Dudgeon and Sheringham Extension Projects OWFs which have impacts similar to VE. An overarching comment for Section 2 is that East Anglia 1N and East Anglia 2 hasn't been included in the assessment	Natural England advises that this section of the RIAA is updated to provide the necessary context for the SoS's HRA.	Additional text has been added to Section 2.5 of the updated 5.4 RIAA [APP-040] regarding the Dudgeon and Sheringham Extension Projects, East Anglia 1N and East Anglia 2, providing the same context as stated for the other relevant projects. It should be noted that the Dudgeon and Sheringham Extension Projects did not have compensation requirements for benthic impacts, instead they were required to provide Measures of Equivalent Environmental Benefit (MEEB) for impacts on the Cromer Shoal MCZ, with impact occurring at a similar scale on a different habitat.
E29	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	The Applicant disagrees with Natural England and believes that utilising a tiered approach, as highlighted within PINS Advice Note Ten, for the cumulative effects assessment is a robust and valid method for determining whether development should be included in the assessment and provides sufficient granularity of cumulative projects. With regards to the use of a Zone of Influence, and the consideration of the mobility of the receptor the Applicant takes this into account within the cumulative effects assessment. This is particularly true for receptors such as marine mammals and birds, which are by their very nature mobile species and are thus more likely to be

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		Tiers for scoping project into in-combination assessments.	exposed to cumulative impacts. This is reflected in the greater number of projects which are screened in within the cumulative effects assessment for these species.
E30	APP-040 5.4 9.13 Natural England advises that further mitigation measures should be explored. 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 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. 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.	Please see comments in this Appendix where we highlight that further mitigation measures should be considered.	Whilst the Applicant has high confidence the cable will be buried through the M&LS SAC, in recognition of the fact that cable protection could be required this has been assessed and appropriate mitigation committed to.
E31	APP-040 5.4 Table 11.1 Natural England advises that the following need further consideration in the table > 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.	Details of the removal of UXO will be provided separately in a Marine Licence application, however an Outline UXO MMMP has been submitted at application for information (9.14.2 Outline Marine Mammal Mitigation Protocol – UXO [APP-245]). Impacts to benthos from UXO clearance, primarily by low-order detonation, will occur prior to other construction works, such as WTG or cable installation. Impacts to benthos are assessed for all other activities following UXO clearance, which would be in the same location as the UXO that has been cleared. Any impacts from UXO clearance are expected to be within the envelope of impacts assessed as part of the installation works. The HDD landfall area is well outside of the MLS SAC area and outside the OTE SPA and has no potential to hinder the conservation objectives for the sites both alone and in-combination. A detailed description of the proposed landfall works (including the potential use of cable protection) is set out in 9.28 Outline Landfall Methodology – [APP-261]. This sets out the design envelope for potential cable protection, which may need to be installed on areas where the target trenching depth isn't achieved. Cable protection will be buried in the intertidal section and out to 1,600 m seaward of MHWS will not consist of loose rock or gravel.

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E32	APP-040 5.4 Para 11.2.3 3 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.	Natural England advises that all impacts are reviewed, and the EIA and RIAA assessed accordingly.	The assessment presented within the 5.4 RIAA [APP-040] and ES for the sandbank features determines that for all impacts the potential significance was minor adverse at worst, which is not significant. Therefore it is considered that for sandbanks there is no significant risk of any direct impacts and therefore, for the parts of the sandbank outside of the site boundary, the potential residual effects would not be significant enough to result in any material impacts on the SAC. This is further evidenced due to the location of sandbank features from available data, which does not suggest the sandbanks extend beyond the SAC boundary with the exception of the discreet sandbanks further to the East closer to the array, where the distance between that sandbank and the MLS SAC is enough to determine that there is no potential for indirect effects on the MLS SAC. Furthermore, the Applicant considers that the presence of the cable and/or cable protection will not result in any significant effects on the hydrodynamic regime on sandbank features within or outside of the MLS SAC.
E33	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.	Following mitigation measure 53 (as detailed within the 9.31 Schedule of Mitigation – Routemap [APP-264] it is considered that all sediment being removed from the MLS SAC will be deposited back into the SAC or within the same sediment cell, with no sediment being 'lost from the system'. Detail around this commitment has been added to the 5.4 RIAA – Revision B [APP-040] (Table 8.1) which will be submitted at a future Deadline.
E34	APP-040 5.4 Para. 11.2.5 4 Natural England notes that within the RIAA it is argued that the impacts are small. We direct you to Annex 3 of this Appendix where we provide further advice on small scale losses within the SAC. 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.	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.	The Applicant has provided a robust assessment, including a reasonable worst-case for the potential for cable protection within the M&LS that demonstrates, as far as reasonably possible, that there will not be a significant effect on sediment transport process to the determinant of Annex I features of the SAC. The project has adopted robust mitigation measures by committing to only using cable protection after exhausting all options to bury, and where cable protection is used, to not use rock dumping and instead use protection that can be removed upon decommissioning, such as concrete mattresses. These measures are secured in the M&LS SAC Benthic Mitigation Plan. Given the above and the very limited impact on the SAC (0.0008%) we do not consider the project will have an adverse effect on the integrity of the site.

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			The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC and therefore this is likely to be a point of disagreement between Natural England and the Applicant.
E35	APP-040 5.4 Para 11.2.6 0 Natural England does not agree with the Applicants conclusion of No AEoI 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 over the lifetime of the project which is potentially irreversible.	Natural England do not agree with the Applicants conclusion of No AEoI 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 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. 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.	The Applicant notes Natural England's position on AEoI in relation to the Annex I Sandbanks associated with the MLS SAC. The Applicant concluded no AEoI based on the negligible area of habitat loss associated with the MLS SAC (5,400 m^2, 0.0008 %), with the Project committing to not exceed this value within the Margate and Long Sands Benthic Mitigation Plan [APP-243] and within Table 8.1 of the 5.4 Report to Inform Appropriate Assessment (Table 8.1, [APP-040]). The Hornsea Three Project decision was due to the potential of 41.8 ha of potential cable protection within North Norfolk Sandbank and Saturn Reef SAC and for the combined Norfolk projects (Norfolk Boreas and Norfolk Vanguard), due to potential of 40 ha of cable protection. The Proposed Development with the potential of 0.5ha within the SAC is, by comparison, considerable smaller that these other projects where compensation has been required. The project has adopted robust mitigation measures by committing to only using cable protection after exhausting all options to bury, and where cable protection is used to not used rock dumping and instead use protection that can be removed upon decommissioning, such as concrete mattresses. These measures are secured in the M&LS SAC Benthic Mitigation Plan.
E36	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 AEoI 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 include targets relating to supporting processes including "Maintain all hydrodynamic and physical conditions such that natural	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.	The Applicant discusses the considered benchmarks within paragraph 11.2.92 of the 5.4 RIAA [APP-040], which are from the Natural England "Advice on Operations" document dated 18 March 2024. The "Advice on Operations" document determines that only the subtidal sand sub-feature is sensitive to changes in physical processes and that the pressure benchmark for this impact is "A change in peak mean spring bed flow velocity of between 0.1m/s to 0.2m/s for more than 1 year". Wording in paragraph 11.2.92 of the RIAA has been amended to clarify. Furthermore relating to physical processes changes from cable protection, the Applicant considers that the installation of cable protection will not result in any significant effects on the hydrodynamic regime within the MLS SAC. The Applicant acknowledges that the presence of cable protection could lead to a very small volume of sediment being trapped within the rock voids, whilst a similarly small volume of material could also accumulate on the updrift side of the berms, before the slope reaches an equilibrium position

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	water flow and sediment movement are not significantly altered or prevented from responding to changes in environmental conditions". 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.		defined by the angle of repose of the accumulated material. However, thereafter sediment can reasonably be expected to be transported at the same rate (and in the same direction) as under baseline conditions. Any indirect changes to sediment transport arising from modification of tidal currents and waves as they interact with the berms will be highly spatially restricted - order of 10's of metres (maximum) from the feature. Given that only very minor changes are expected to the sediment transport regime, any associated morphological impacts are also expected to be very limited. This is reflected in 6.2.2 Marine Geology, Oceanography and Physical Processes [APP-071] and 5.4 Report to Inform Appropriate Assessment [APP-040].
E37	APP-102 6.5.2.4 and APP-120 6.5.5.2 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 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 (Defining Irreplaceable Marine Habitats - NECR474 (naturalengland.org.uk)) and is also a priority habitat under Section 41 of the NERC Act 2006.	Natural England advises that the Applicants EIA and subsequent proposed Benthic Mitigation and Offshore In-Principle Monitoring Plan would benefit 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.	The Applicant has noted that pre-construction surveys will be undertaken to determine the location, extent and composition of any habitats of principal importance (Section 41 of the 2006 Natural Environmental and Rural Communities (NERC) Act) and/or Annex I and impacts to the features will be avoided as far as reasonably practicable (6.2.5 Benthic and Intertidal Ecology – [APP-074]).
E38	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 Sabellaria spinulosa tube structures has been measured in order to inform the 'reefiness' assessment. Photograph 200867 _FE4_04_09 within the report appears to show Sabellaria spinulosa 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).	The Applicant notes that the guidance used to determine 'reefiness' is set out in 6.5.2.4 Main Array and Export Cable Route - Environmental Features Report [APP-102], that biogenic reefs such as *Sabellaria spinulosa* reefs were assessed in line with the criteria in Gubbay et al. (2007), Hendrick and Foster-Smith (2006) and Limpenny et al. (2010) and the methods in Jenkins et al., (2015) and described fully in Section 3.2.2.5. Table 4.9 provides the overall 'reefiness' assessment for each of the video stills assessed. The Applicant has noted that pre-construction surveys will be undertaken to determine the location, extent and composition of any habitats of principal importance (Section 41 of the 2006 Natural Environmental and Rural Communities (NERC) Act) and/or Annex I and impacts to the features (which would include *Sabellaria spinulosa* reefs) will be avoided as far as reasonably practicable (6.2.5 Benthic and Intertidal Ecology [APP-074]).
E39	APP-243 9.13 APP-265 9.32	Natural England advises that the adoption of mitigation measures via the Applicants	The Applicant has noted that pre-construction surveys will be undertaken to determine the location, extent and composition of any habitats of principal

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	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.	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 through mitigation measures such as micro-siting.	importance (Section 41 of the 2006 Natural Environmental and Rural Communities (NERC) Act) and/or Annex I and impacts to the features will be avoided as far as reasonably practicable (6.2.5 Benthic and Intertidal Ecology [APP-074]).
E40	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.	This is noted by the Applicant.
E41	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		The Applicant believes a reasonable worst case for cable protection has been considered and assessed as part of the assessments. The maximum length of caballing within MLS SAC is 900 m as noted within Table 5.2 (6.2.5 Benthic and Intertidal Ecology [APP-074]), as Removable cable protection (if required) within the M&LS SAC = 5,400 m^2 (6 m width protection over 900 m). The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC. The Applicant agrees that this is likely to be a point of disagreement between Natural England and the Applicant. An 9.9 Outline Cable Burial Risk Assessment [APP-239] and 9.12 Outline Cable Specification and Installation Plan (CSIP) [APP-242] have been submitted with the application. It is the intention of the Applicant to update the outline CSIP following the pre-construction surveys. The likely wording that may be attached to the dML from Natural England, regarding details of the cable protection used for the authorised scheme, is noted by the Applicant.

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	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."		
E42	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		This is noted by the Applicant.

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	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.		
E43	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.		This is noted by the Applicant.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
E44	Natural Egland 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.		This is noted by the Applicant.
E45	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*.'		See section 2 in 10.4 Applicants Response to Relevant Representations [PD4-006] regarding OCSS and the OTNR offshore option.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
	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 Depart 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*.'		

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issues	Applicant's Response
E46	Natural England will usually consider permanent, long-lasting and irreversible loss to be an adverse effect unless it can be clearly demonstrated otherwise. 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. 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 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. 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 location of the potential impact is shown on Figure 5.1 of the Margate and Long Sands SAC Benthic Mitigation Plan [APP-243]. The Applicant believes a reasonable worst case for cable protection has been considered and assessed as part of the assessments. The maximum length of caballing within MLS SAC is 900m as noted within Table 5.2 (6.2.5 Benthic and Intertidal Ecology [APP-074]), as removable cable protection (if required) within the M&LS SAC = 5,400 m^2 (6 m width protection over 900 m), which is 0.0008% of the site. The sandbank feature is not rare and is represented by large areas of designated sites as well as undesignated areas with sandbank features. The project has adopted robust mitigation measures by committing to only using cable protection after exhausting all options to bury, and where cable protection is used to not used rock dumping and instead use protection that can be removed upon decommissioning, such as concrete mattresses. These measures are secured in the M&LS SAC Benthic Mitigation Plan. The Applicant has provided a robust assessment that demonstrates, as far as reasonably possible, that there will not be a significant effect on sediment transport process to the determinant of Annex I features of the SAC. The duration of the loss will be for the expected 40 year life span of the Proposed Development. There is currently a lack of evidence on the exact recovery timeframe for a sandbank feature of this kind following the removal of a small amount of cable protection, however it is expected to recover within a short timeframe. As the sandbank feature is expected to naturally recover following removal of the cable protection (such as concrete mattresses), as such a detailed remediation plan is deemed unnecessary. The current condition of the sandbank feature of M&LS SAC is 'favourable', however the Applicant notes that the condition assessment is currently undergoing update and may be available later in the examination process. The Applicant considers that the potential for a very small area of cable protection in the northern part of the site and that as the feature is not rare and is expected to recover fully following the removal of the cable protection at the end of the project, that it would not cause an AEoI on the sandbank feature of MLS SAC.

Table 2.7 Applicant's response to Natural England Appendix F – Benthic Compensation

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
F1	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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 '*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*.' 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. 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.	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.	The Applicant agrees with Natural England, that should compensation be required for the MLS SAC, that strategic compensation is the preferred option and is the most likely to be successful. The Applicant is continuing to have active discussions with Defra and understands that further clarifications will be made available during the timescale of this examination.
F2	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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	No further comment	This is noted by the Applicant.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
	function to those Annex I features which are likely to be subject to lasting loss/change and/or disturbance.		
F3	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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. 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.	Natural England advises that the points raised in Appendix E of our Relevant Representations/Written Representations (RR/WR) are addressed. Further feedback on the development of this measure should be sought from DEFRA.	The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC. The Applicant agrees that this is likely to be a point of disagreement between Natural England and the Applicant. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.
F4	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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. 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.	Natural England advises that the points raised in Appendix E of our RR/WR are addressed.	The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC. The Applicant agrees that this is likely to be a point of disagreement between Natural England and the Applicant. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.
F5	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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 environmental net positive outcome for the impacted feature over the lifetime of the project.	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.	This is noted by the Applicant.
F6	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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.	This is noted by the Applicant.
F7	Strategic Compensation - New site designation or Extension for Annex I Sandbanks	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.	This is noted by the Applicant.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
	Long term implementation – This is still under consideration by DEFRA, Natural England and JNCC and as yet nothing has been agreed and/or secured.		
F8	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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 sought directly from DEFRA.	This is noted by the Applicant.
F9	Strategic Compensation - New site designation or Extension for Annex I Sandbanks 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.	The Applicant agrees with Natural England, that should compensation be required for the MLS SAC, that strategic compensation is the preferred option and is the most likely to be successful. The Applicant will continue to have discussions with Defra regarding this option. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.
F10	Strategic Compensation - New site designation or Extension for Annex I Sandbanks Key uncertainties: 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.	The Applicant believes that there is sufficient information and data regarding the nature of the substrate and the nature of the sediment processes, in and around the site, for the assessment that has been carried out within the Margate and Long Sands SAC. Additionally, the underlying geological units are well known and the level of survey is consistent with other similar projects at this stage. The need for cable protection is considered a worst case scenario and therefore cable protection may not be required in this area. Geophysical data and assessment is presented in 6.5.2.1 Physical Processes Baseline Technical Report [APP-099] and 6.5.2.3 Physical Processes Technical Assessment [APP-101]. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.
F11	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks Whilst Natural England is supportive of the removal of redundant surface laid/exposed infrastructure being progressed as a benthic compensation measure for Annex I	Natural England advises that the applicant provide more detail to address Natural England concerns.	The Applicant will continue to progress this option.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
	sandbanks; we note Five Estuaries focus is on the removal of disused telecommunications 'telecom' cables. 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.		There is the potential that if sufficient security can be achieved in the strategic compensation option, this option may be removed.
F12	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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.	Please see response to F11.
F13	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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.	The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC. The Applicant agrees that this is likely to be a point of disagreement between Natural England and the Applicant. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.
F14	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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 out comments in Appendix E.	The Applicant believes that there is sufficient information and data regarding the nature of the substrate and the nature of the sediment processes, in and around the site, for the assessment that has been carried out within the Margate and Long Sands SAC. The need for cable protection is considered a worst case scenario and therefore cable protection may not be required in this area. Geophysical data and assessment is presented in 6.5.2.1 Physical Processes Baseline Technical Report [APP-099] and 6.5.2.3 Physical Processes Technical Assessment [APP-101]. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
F15	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks Unlike other proposed measures the delivery of this measure is less reliant on other parties, therefore Natural England believes that the compensation could and should be delivered before the impact occurs.	No comment.	This is noted by the Applicant.
F16	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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.	The Applicant believes that the survey required to provide sufficient confidence to Natural England is disproportionate at this stage, considering that strategic compensation is the agreed, preferred option.
F17	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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.	The Applicant will continue to progress this option. If this is a viable option, more detail can be provided in an updated in 5.5.2 Outline Benthic Implementation and Monitoring Plan [APP-048], as necessary. There is the potential that if sufficient security can be achieved in the strategic compensation option, this option may be removed.
F18	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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.	The Applicant will continue to progress this option. If evidence can be obtained during the Examination this will be provided. There is the potential that if sufficient security can be achieved in the strategic compensation option, this option may be removed.
F19	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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.	Please see response to F11.
F20	Anthropogenic Pressure Removal – Redundant Infrastructure for Annex I Sandbanks 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.	The Applicant believes that the survey required to provide sufficient confidence to Natural England is disproportionate at this stage, considering that strategic compensation is the agreed, preferred option.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
F21	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	The Applicant will continue to progress this option.
F22	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	The Applicant will continue to progress this option.
F23	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC. The Applicant agrees that this is likely to be a point of disagreement between Natural England and the Applicant. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.
F24	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	The Applicant will continue to progress this option, including information about potential scale and extent. The Applicant will engage with and obtain agreement with Natural England as required during the process. Responses have been provided for Natural England's relevant representations in Appendix E – Table 2.6 of this document.
F25	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	The Applicant will continue to progress this option. If evidence can be obtained during the Examination of how, when and where this measure can be secured, this will be provided.
F26	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	Please see response to F25.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
F27	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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 if not.	Natural England advises that the Applicant provides more detail to address our concerns.	The Applicant will continue to progress this option. If this is a viable, option, more detail can be provided in an updated in the 5.5.2 Outline Benthic Implementation and Monitoring Plan [APP-048]. There is the potential that if sufficient security can be achieved in the strategic compensation option, this option may be removed.
F28	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	The Applicant will continue to progress this option. If evidence can be obtained during the Examination this will be provided.
F29	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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.	Please see response to F28
F30	Anthropogenic Pressure Removal of Aggregates industry Pressures for Annex I Sandbanks 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 see response to F28
F31	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks Natural England refers the ExA to the published 'Offshore Wind Leasing Round 4 Dogger Bank Strategic Compensation Plan' (April 2024). In section 3.4.2 it is stated that '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. We advise the same is true for	Natural England currently has no further recommendation.	The Applicant agrees with Natural England, that should compensation be required for the MLS SAC, that strategic compensation is the preferred option and is the most likely to be successful. The Applicant will continue to have discussions with Defra during the examination to further progress this option, if possible. The Applicant notes that compensation via the creation and/or restoration of seagrass is a lower preference as the habitat is not currently found within MLS SAC.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
	compensation for impacts to Annex I Sandbank Features of MLS SAC where subtidal seagrass has not been found within the site.		
F32	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks Natural England refers the ExA to the published 'Offshore Wind Leasing Round 4 Dogger Bank Strategic Compensation Plan' (April 2024). In section 3.4.3 it is stated that '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 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.'. This is also applicable to Five Estuaries compensation. Natural England is in the process of drafting a paper on the current seagrass restoration projects.	Natural England will provide further comment on the technical feasibility on this measure at Deadline 1.	This is noted by the Applicant. Further comment by Natural England is welcomed at Deadline 1.
F33	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks 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.	The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC. The Applicant agrees that this is likely to be a point of disagreement between Natural England and the Applicant. Responses have been provided for Natural England's relevant representations in Appendix E - Table 2.6 of this document.
F34	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks 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.	The Applicant notes Natural England's stance regarding the conclusion of AEoI on the MLS SAC. The Applicant agrees that this is likely to be a point of disagreement between Natural England and the Applicant. Responses have been provided for Natural England's relevant representations in Appendix E - Table 2.6 of this document.
F35	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks	Natural England advises that the Applicant would need to provide more detail to address our concerns.	The Applicant will continue to progress this option. If evidence can be obtained during the Examination of how,

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	It is unclear if this measure can be delivered prior to the impacts occurring.		when and where this measure can be secured, this will be provided.
F36	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks 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.	Please see response to F35.
F37	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks 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	The Applicant will continue to progress this option. If this is a viable, option, more detail can be provided in an updated in 5.5.2 Outline Benthic Implementation and Monitoring Plan [APP-048]. There is the potential that if sufficient security can be achieved in the strategic compensation option, this option may be removed.
F38	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks 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	The Applicant will continue to progress this option. If evidence can be obtained during the Examination this will be provided.
F39	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks 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.	This is noted by the Applicant. There is the potential that if sufficient security can be achieved in the strategic compensation option, this option may be removed.
F40	Seagrass Habitat Creation/Restoration for Annex 1 sandbanks Further details on following should be provided: > 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.	The Applicant will continue to progress this option. If evidence can be obtained during the Examination of how, when and where this measure can be secured, this will be provided.
F41	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'.	The Applicant is confident that the submitted Derogation Case (5.5 Habitats Regulations Assessment Derogation Case [APP-046]) contains all necessary information to

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
			meet the 'Alternatives Test', if required by the Examining Authority and the Secretary of State. In terms of derogation for potential adverse effects on benthic habitat, paragraphs 4.1.123 to 4.1.126 of the Derogation Case provide a thorough analysis of alternative export cable routing and design options with cross referencing to further details in key supporting documents, 6.1.4 Site selection and alternatives [APP-066] and 9.13: Margate and Long Sands SAC Benthic Mitigation Plan [APP-243]. As stated in paragraph 4.1.126 of 5.5 Habitats Regulations Assessment Derogation Case "The Applicant has assessed the potential adverse effects on European Site features alongside other project challenges and has presented a MDS which incorporates avoidance and mitigation measures for potential effects on all sensitive receptors; and it is considered that any further design refinement is likely to reduce the benefit without any material improvement. Therefore, further design changes are not considered a feasible alternative solution for VE."
F42	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.	The Applicant will continue a range of potential compensation options. Where options are deemed viable and supported by the SNCBs, further information will be provided throughout the Examination period to provide Natural England with greater confidence in the agreed options.
F43	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 Egland 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 incombination 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.	This is noted by the Applicant. Where required the assessments will be updated following receipt of the updated conservation advice package for MLS SAC.

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F44	APP-047 5.5.1 Benthic compensation Strategy Road Map Paras 2.3.1 and 2.3.2 Natural England is unsure how the Applicant has determined that sandbank recovery is a few months following sandwave levelling. Please see Annex 1 to this Appendix for further advice.	Natural England advises that all statements are adequately referenced and where that is not possible a more precautionary approach it taken in relation to sandwave/bank recovery and derogation case documents updated accordingly.	The Applicant considers that the presence of the cable and/or cable protection will not result in any significant effects on the hydrodynamic regime on sandbank features within or outside of the MLS SAC. The Applicant acknowledges that the presence of cable protection could lead to a very small volume of sediment being trapped within the rock voids, whilst a similarly small volume of material could also accumulate on the updrift side of the berms, before the slope reaches an equilibrium position defined by the angle of repose of the accumulated material. However, thereafter sediment can reasonably be expected to be transported at the same rate (and in the same direction) as under baseline conditions. Any indirect changes to sediment transport arising from modification of tidal currents and waves as they interact with the berms will be highly spatially restricted - order of 10's of metres (maximum) from the feature. Given that only very minor changes are expected to the sediment transport regime, any associated morphological impacts are also expected to be very limited. This is reflected in both the 6.2.2 Marine Geology and Physical Processes [APP-071] and 5.4Report to Inform Appropriate Assessment [APP-040].
F45	APP-047 5.5.1 Benthic compensation Strategy Road Map Para 2.3.6 Natural England advises that further geotechnical data is required 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.	The Applicant believes that there is sufficient information and data regarding the nature of the substrate for the assessment that has been carried out within the Margate and Long Sands SAC. The need for cable protection is considered a worst case scenario and therefore cable protection may not be required in this area. Regardless, and as highlighted in 9.32 Offshore In-Principle Monitoring Plan [APP-265], section 4.6.6, geophysical pre-construction monitoring will take place to determine the presence of biogenic or geogenic reef features. In addition, within Margate and Long Sands SAC pre-construction monitoring will be carried out in line with the methods and principles detailed in Larsen et al., (2019) Sandwaves and mega ripples at Race Bank (UK) Offshore Wind Farm.

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F46	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.	The Applicant believes a reasonable worse case for cable protection has been considered and assessed as part of the assessments. The maximum length of caballing within MLS SAC is 900m as noted within Table 5.2 (6.2.5 Benthic and Intertidal Ecology [APP-074]), as Removable cable protection (if required) within the M&LS SAC = 5,400 m^2 (6 m width protection over 900 m).
F47	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.	The Applicant maintains the position that it is inappropriate to implement compensation where impacts are likely not to occur, and that the pragmatic approach would be determine the level of compensation required following construction, particularly given the level of potential impact from Five Estuaries is orders of magnitude lower than those from Norfolk Vanguard or Boreas and there is a high level of confidence that cable protection will not be required.
F48	APP-047 5.5.1 Benthic compensation Strategy Road Map Table 3.1 Mitigation: Natural England provides the following advice (1) Why hasn't combined/coordinated approach been taken forward? (2) Avoidance of sensitive habitats: - could cable route around sandbank features in SAC? (3) A Cable Burial Risk Assessment from an ecological perspective is key to determining mitigation. (4) Expectation that from an ecological perspective some cable protections will be ruled out pre-determination. (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. (6) Natural England queries if low ordnance detonation can be used in MLS SAC to minimise the seabed impacts.	Natural England refers the Applicant to Appendix D where more detail is provided to help improve confidence in the mitigation measures.	(1) The Applicant is committed to ongoing discussion regarding coordination of approach as suggested by Natural England. However, to be able to progress the application, a reasonable worse case assessment has been made. Should future coordinated agreement be made, the resultant impacts will be less than those assessed within the assessment. (2) VE are unable to avoid Margate and Long Sands (M&LS) SAC due to safety concerns raised by Harwich Haven Authority with regards to cable installation and presence in close proximity to pilot boarding activities (as noted in 9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243]). (3) The Cable Burial Risk Assessment will relate only to the risks to the cable, whereas the Cable Specification and Installation Plan will consider ecological impacts as part of cable routing and cable protection. (4) The Applicant has noted that pre-construction surveys will be undertaken to determine the location, extent and composition of any habitats of principal importance (Section 41 of the 2006 Natural Environmental and Rural

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			Communities (NERC) Act) and/or Annex I and impacts to the features will be avoided as far as reasonably practicable (6.2.5 Benthic and Intertidal Ecology [APP-074]). This will avoid areas of ecological importance. (5) We are not proposing to use jack up barges within MLS SAC, this will be confirmed in an updated in 9.13 Margate and Long Sands SAC Benthic Mitigation Plan [APP-243] at a future Deadline. (6) It is anticipated the primary method that will be employed for VE will be low-order detonation, known as deflagration for all UXO, not just those within MLS SAC (9.14.2 Outline Marine Mammal Mitigation Protocol UXO [APP-245]). UXO clearance is not part of the DCO or dML and would be undertaken through a subsequent marine licence if required.
F49	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.	This is noted by the Applicant.
F50	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 comment at this time on its content. It is not clear if this is the most appropriate approach if Strategic Compensation is taken forward.	N/A	This is noted by the Applicant.
F51	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	N/A	The Applicant believes this comment may have been included in error, as the Proposed Development does not include sand wave levelling (or other activities) within the IDRBNR SAC.

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	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		

Table 2.8 Applicant's response to Natural England Appendix G – Fish and Shellfish Ecology

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
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.	The Applicant confirms that the conclusions of magnitude for each Valued Ecological Receptor are considered on a receptor-by-receptor basis. The Applicant considers that the fleeing receptor approach is relevant where mobile species are not spatially restricted (due to breeding activity for example). Where species are restricted in such ways, the assessment has been undertaken using the static receptor modelling outputs. The Applicant confirms that spawning herring, sandeel, and seahorses have all been assessed as stationary receptors when regarding impacts from underwater noise.
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.	This is noted by the Applicant.
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.	Herring are considered to be of regional importance, high vulnerability and medium recoverability to impacts from underwater noise. Taking into consideration the sensitivity criteria, outlined in Table 6.5 of 6.2.6 Fish and Shellfish Ecology [APP-075], regionally important receptors with high vulnerability and no ability for recovery are classified as being of medium sensitivity.
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.	The Applicant maintains that, due to the localised nature of the impact ranges, and the low densities of herring larvae located within the impact contours (high intensity spawning activity for the Downs herring stock occurs consistently in the English Channel as indicated by high densities of herring larvae recorded in annual IHLSs) the Applicant is confident that the assessment of low magnitude impacts for the potential for mortality and potential mortal injury is appropriate.
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. Please refer to advice from Cefas for further actions required.	The Applicant confirms that the conclusions of magnitude for each Valued Ecological Receptor are considered on a receptor-by-receptor basis, with consideration of the fleeing and stationary impact ranges (as informed by the underwater noise modelling) provided as relevant. The Applicant considers that the fleeing receptor approach is relevant where mobile species are not spatially restricted (due to breeding activity for example). Where species are restricted in such ways, the assessment has been undertaken using the static receptor modelling outputs.

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			The Applicant confirms that spawning herring, sandeel, and seahorses have all been assessed as stationary receptors when regarding impacts from underwater noise.
G6	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.		The Applicant notes that Natural England will defer to Cefas regarding the appropriateness of the proposed timing of the herring spawning restriction and buffer required. It should be noted the Applicant has engaged with Cefas and is submitting an updated Herring Seasonal Restriction Note at Deadline 1.
G7	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.	This is noted by the Applicant.

Table 2.9 Applicant's response to Natural England Appendix H – Marine Mammal Ecolo

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
H1	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.	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.	To date Natural England have never supported the use of iPCoD to justify magnitude conclusions. It is noted that Natural England did not raise the use of iPCoD during stakeholder consultation on assessment methods, nor did they raise it in their response to consultation on the Preliminary Environment Information Report in spring 2023. The Applicant has conducted iPCoD modelling for the Project alone, which will be finalised and submitted at Deadline 1. However, results from the modelling has shown that disturbance from pile driving will not result in a change to the population size or trajectory for harbour porpoise, harbour seals or grey seals. The conclusions of these iPCoD results align with the conclusions presented in 6.2.7 Marine Mammal Ecology [APP-076]. As for the cumulative assessment, the Applicant has <u>not</u> undertaken iPCoD for in-combination impacts. This is because that would require detailed piling schedules for every project included, which the Applicant does not have. As a result this is not an exercise the Applicant is in a position to undertake. The Applicant considers that it is not realistically practicable for any developer to carry out such modelling.
H2	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.	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.	The Applicant is not committing to NAS given the conclusions of no significant effects in the EIA and no AEoI in the HRA therefore the Applicant maintains that NAS is not required. Currently, the primary measures outlined in the Outline Marine Mammal Mitigation Protocol - Piling [APP-244] include Marine Mammal Observers (MMOb), Passive Acoustic Monitoring (PAM) and Acoustic Deterrent Devices (ADD). However, Section 4.5 of the 9.14.1 Outline MMMP - Piling [APP-244], outlines noise abatement and the approximate level of noise reduction that may be achieved based on a review of NAS and their limitations provided by Verfuss *et al.,* (2019) and Koschinski and Lüdemann, (2020). An assessment of the potential impact after using NAS was modelled at the Northern Array northern edge (N) modelling location within 6.5.6.2 Underwater Noise

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			Technical Report [APP-122] and is presented in 6.2.7 Marine Mammal Ecology [APP-076]. The 9.15 Outline SNS SAC SIP [APP-246], follows current guidance and thresholds (Joint Nature and Conservation Committee (JNCC) et al., 2020). The aim of finalising the SIP in the post-consent phase (prior to construction) is to take into account any guidance and requirements at that time, as well as the final design of the Projects. Further assessment will be conducted prior to construction, based on the foundation type and installation method. If the potential for a significant risk of disturbance to marine mammals arises and cannot be avoided or reduced, this assessment will then be used to determine if further mitigation measures which reduce sound propagation and disturbance are required. If they are required, then a review will be conducted to determine what is the most appropriate and effective method based on the latest and available methods prior to construction. This will include a review of all suitable noise abatement measures at that time. This will be done in consultation with Natural England during the preconstruction phase together with consultation in developing the final MMMP for piling and the final SNS SAC SIP for piling at the post-consent stage.
H3	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.	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.	See response to H2. Further, the Applicant considers that this approach is not necessary given the conclusions of the ES and does not follow the mitigation hierarchy. The SIP process will consider whether impacts can be avoided or reduced (through design, construction timing or other construction methods) in the first instance before determining whether mitigation, in the form of NAS, is required.
H4	APP-126 Sec 5.1 Pg. 26- 30 Marine Mammal Baseline Characterisation: 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 impacts - the SCANS III density surface (ranging between 0.607 and 0.78)	We advise that the Applicant should apply an average monthly density estimate obtained from the 2-year baseline survey for all quantitative assessments.	The ES chapter (6.2.7 Marine Mammal Ecology [APP-076]) does present the PTS, TTS and disturbance assessment using the average site-specific density estimate of 1.82 porpoise/km^2 as Natural England recommends (as well as the SCANS III density surface and the SCANS IV block estimate). While all three density options are presented, the assessment conclusion are based on the highest predicted numbers across these three densities, which comes from the site-specific DAS.

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	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 not 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 not 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.		As noted in 6.5.7.1 Marine Mammals Baseline Characterisation [APP-126]: "*The site-specific density estimate will be used in the quantitative impact assessment as it is significantly higher than the density estimates obtained by SCANS III and SCANS IV for the area. However, the site-specific density estimate is less relevant for wider scale impacts that extend beyond the surveyed area (such as disturbance from piling). Therefore, the SCANS III density surface and the SCANS IV block wide densities will also be used for the quantitative assessment of wider scale impacts*." The Applicant wishes to reiterate that while the site-specific density estimate (1.82 porpoise/km^2) has been used in the assessment (as Natural England recommends), there is no evidence that the density estimate within the VE survey area is applicable beyond the boundary of the survey area, and thus there is no evidence that it is applicable for use for much wider ranging impacts such as disturbance from piling that extend considerable distances beyond the survey area.
H5	See comment above in relation to densities.	N/A	See response to H4 above.
H6	APP-076 Sec 7.3 Table 7.2 Pg. 26- 49 & Sec 7.5 Table 7.8 Pg. 69 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. 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. 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 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	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.	**Regarding medium magnitude:** The sensitivity and magnitude definitions are marine mammal specific and differ from those in 6.1.3 EIA Methodology [APP-063]. The marine mammal sensitivity was changed from Negligible too High to Low to Very High in line with Natural England's recommendations in their response to consultation on the PEIR. The Post-ETG response letter from Natural England received 17 October 2023 stated '*With regards to the sensitivity scores used in Hornsea 4 (HOW4), Natural England notes that HOW4 used a 4 level scale: very high, high, medium and low. VE also uses a 4-level scale but with different definitions: high, medium, low and negligible. Consequently, Medium in HOW4 is equivalent to Low in VE. Regardless of whether the definitions are the same or not, the terminology is different, and this appears to lead to a downplaying of the impact.*' Therefore, the Applicant amended the four levels of sensitivity in line with Natural England's recommendation. The Applicant has maintained the same matrix to determine effect significance as presented in 6.1.3 EIA Methodology [APP-063], with the update of sensitivity for marine mammals of Low to Very high, to maintain

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	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.		consistency with the assessments presented in other technical chapters. The definitions used within the marine mammal chapter have not changed, just the updated naming convention. When considering the updated sensitivity scores, medium is the second lowest score. When considering the magnitude scores, medium is the second highest score. In the significance matrix presented in Table 7.8 of 6.2.7 Marine Mammal Ecology [APP-076] a magnitude score of medium and a sensitivity score of medium result in a minor significance, which is not significant in terms of EIA regulations 2017. The Applicant has conducted iPCoD modelling for the project alone, which will finalised and submitted at a future Deadline. However, results from the modelling has shown that disturbance from pile driving will not result in a change to the population size or trajectory for harbour porpoise, harbour seals or grey seals. The conclusions of theses iPCoD results align with the conclusions presented in 6.2.7 Marine Mammal Ecology [APP-076]. As for the cumulative assessment, the Applicant has <u>not</u> undertaken iPCoD for **in-combination** impacts. This is because that would require detailed piling schedules for every project included, which the Applicant does not have. As a result this is not an exercise the Applicant is in a position to undertake. The Applicant considers that it is not realistically practicable for any developer to carry out such modelling.
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 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. 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 SELcum for piling is estimated as 8.6km (180km^2) and given the size of the site and the buffer zones, the majority of the impact range is within the survey area, thus site-specific densities remain most appropriate.	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.	Please see full response to H4. The ES chapter (6.2.7 Marine Mammal Ecology [APP-076]) does present the PTS, TTS and disturbance assessment using the average site-specific density estimate of 1.82 porpoise/km2 as Natural England recommends (as well as the SCANS III density surface and the SCANS IV block estimate). While all three density options are presented, the assessment conclusion are based on the highest predicted numbers across these three densities, which comes from the site-specific DAS. The Applicant wishes to reiterate that while the site-specific density estimate (1.82 porpoise/km^2) has been used in the assessment (as Natural England recommends), there is no evidence that the density estimate within the VE survey area is applicable beyond the boundary of the survey area, and thus there is no evidence that it is applicable for use for much wider

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			ranging impacts such as TTS & disturbance from piling that extend considerable distances beyond the survey area.
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. "*If noise reduction methods are used (leading to a 10 dB reduction in source level*…"), 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.	The Applicant maintains that the conclusion of significance for unmitigated piling is minor for harbour porpoise and negligible for grey and harbour seal. The Applicant has not committed to NAS given the conclusions of no significant effects in the EIA and maintains that NAS is not required.
H9	Natural England defers to Cefas as the underwater noise specialists to comment on the Underwater Noise Technical Report.	To note.	Noted by the Applicant.
H10	Outline Marine Mammal Mitigation Protocol – Piling 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. 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. 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. 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. 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: > 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 (AEoI) from cumulative	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.	The Applicant is aware of the developments in the management of underwater noise within UK waters, particularly in relation to impacts in marine mammals and are engaging with Defra on the strategic measures including the marine policy paper noted by Natural England. In cognisance of the issues raised by Natural England, the Applicant has not excluded the potential use of noise abatement systems from the Project design, if these are required at the point of construction, with discussion of these measures included within the 9.14.1 Outline MMMP - Piling [APP-244] and 9.15 Outline SNS SAC SIP [APP-246], for the Project. However, due to the current uncertainties around what the final Government policy position will be, and in the absence of data demonstrating successful use of NAS within UK waters for piling activity, the Applicant is not committing to the use of NAS. Consequently, unmitigated piling remains the MDS for the purposes of the impact assessment, given the conclusion of significance for unmitigated piling is minor for harbour porpoise and negligible for grey and harbour seal (see response to H8). Furthermore, whilst the Applicant appreciates Natural England's advice around the risk for the award of an EPS licence, it is noted that the application for an EPS licence is not part of the DCO Application process and would be applied for post-consent, prior to construction once final project parameters are known (including foundation type and installation options), if required.

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	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 AEoI 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 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. > 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.		Regarding the unmitigated Effective Deterrent Range (EDR) for piling of 26 km presented that has been considered in 5.4 RIAA [APP-040] and has fed into both the alone and in-combination assessments of the Southern North Sea SAC spatial thresholds, the Applicant notes the resent research from the Offshore Wind Evidence and Change (OWEC) funded Predators and Prey Around Renewable Energy Developments (PrePARED) project has shown a EDR of <10 km may be more representative (Benhemma-Le Gall et al., 2024). The Applicant is aware JNJCC have issued a tender to improve the evidence base for piling EDRs which could lead to revised guidance for the SNS SAC in the near future. The Applicant is waiting to see the results of this study an whether revised guidance for the SNS SAC thresholds should be considered going forwards but nonetheless considers this demonstrative of the precautionary approach used in the assessment.
H11	APP-244 Sec 4.2 Para 4.2.1 Pg. 14 Outline Marine Mammal Mitigation Protocol – Piling 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 start is initiated with 10% of the maximum hammer energy i.e. 700KJ.	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.	The JNCC (2010) guidance defines soft start as the gradual ramping up of piling power, incrementally over a set time period, until full operational power is achieved and that this should be for a minimum of 20 minutes. It does not specify the maximum hammer energy that defines soft start. As the total time prior to full operational power is 35 minutes as per 6.5.6.2 Underwater Noise Technical Report [APP-122], the Applicant is complying with the soft start guidance within JNCC (2010).
H12	APP-244 & APP245 Sec 4.2 Para 4.2.1 Pg. 14 Outline Marine Mammal Mitigation Protocol – Piling and UXO 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.	The Applicant welcomes Natural England's agreement on this matter. The final MMMP for piling will be developed in the post-consent stage. It should be noted that the UXO MMMP has been provide for information only and any UXO clearance will require a subsequent marine licence for which an updated UXO MMMP will be produced. The Applicant will refer to the latest guidance for MMObs at the time of final MMMP drafting and consider the advice of stakeholders.
H13	APP-244 Sec 4.3 Para 4.3.2 Pg. 15 Outline Marine Mammal Mitigation Protocol – Piling 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.	The Applicant has updated Section 4.3.2 of 19.14.1 Outline Marine Mammal Mitigation Protocol – Piling (Rev B) submitted at Deadline 1. The Applicant will commit to this in the final piling MMMP produced post-consent. The Applicant notes that this is detailed in Section 2.3 of the JNCC (2010) protocol for minimising the risk of injury to marine mammals from piling noise. The Applicant will

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			follow the latest guidance at the time of producing the final piling MMMP ahead of construction.
H14	APP-244 Sec 4.3 Para 4.3.4 Pg. 15 & APP-245 Sec 4.3 Para 4.3.4 Pg. 14 Outline Marine Mammal Mitigation Protocol – Piling and UXO The Passive Acoustic Monitoring (PAM) guidance was updated in December 2023 (JNCC 2023). This updated version should be used to inform the final MMMP and the outline MMMP should be updated to note this expectation.	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 for minimising the risk of injury to marine mammals from offshore activities I JNCC Resource Hub	The Applicant has updated Section 4.3.4 in both 19.14.1 Outline Marine Mammal Mitigation Protocol – Piling (Rev B) and 19.14.2 Outline Marine Mammal Mitigation Protocol – UXO (Rev B) submitted at Deadline 1. The Applicant will include the latest PAM guidance within the final MMMMPs submitted at the post-consent stage, whether this is JNCC (2023) or if another version is published closer to the time of construction.
H15	APP-245 Sec 4.1 Para 4.1.1 Pg. 13 Outline Marine Mammal Mitigation Protocol- UXO 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.	The Applicant notes that Natural England does not support the use of scare chargers as a mitigation measure for UXO clearance. The Applicant has updated Section 4.1 of 19.14.2 Outline Marine Mammal Mitigation Protocol – UXO (Rev B) submitted at Deadline 1 to remove reference to scare charges. The final MMMP for UXO clearance (which will produced following any subsequent marine licence for UXO clearance) will not contain reference to scare charges as a mitigation measure and they will not be utilised as mitigation measure offshore by the Project during UXO clearance activities.
H16	APP-245 Sec 4.5 Para 4.5.1 Pg. 16 Outline Marine Mammal Mitigation Protocol- UXO 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	The Applicant acknowledges the error within the Outline UXO clearance MMMP and has updated Section 4.5 of 9.14.2 Outline Marine Mammal Mitigation Protocol – UXO (Rev B) submitted at Deadline 1.
H17	APP-244 Sec 4.6 Para 4.6.1 Pg. 19 & APP-245 Sec 4.6 Para 4.6.1 Pg. 16 Outline Marine Mammal Mitigation Protocol- UXO and Piling Natural England has concerns related to this statement within the MMMP for UXO and piling: "*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*." Protocol for delays should be carefully thought through taking into account maximum duration of	Include advice in the final MMMP.	The Applicant will commit to a break in the ADD for more than 20 minutes, should piling be delayed for enough time to warrant the ADD being switched off. The protocol for unplanned breaks will be detailed in the final piling MMMP at the post-consent stage. The Applicant has updated Section 4.6 in 19.14.1 Outline Marine Mammal Mitigation Protocol – Piling (Rev B) submitted at Deadline 1. The Applicant will commit to a break in the ADD for more than 20 minutes, should UXO clearance be delayed for enough time to warrant the ADD being switched off. The protocol for unplanned breaks will be detailed in the final

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	the Acoustic Deterrent Device (ADD), time of the delay and expected time of the detonation. 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.		UXO clearance MMMP at the post-consent stage as part of the separate UXO clearance Marine Licence Application. The Applicant has updated Section 4.6 in both 19.14.2 Outline Marine Mammal Mitigation Protocol – UXO (Rev B) submitted at Deadline 1.
H18	APP-244 & APP245 Sec 4.3 Pg. 14- 15 Outline Marine Mammal Mitigation Protocol- UXO and Piling 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.	The Applicant has updated Section 4.3 in both 19.14.1 Outline Marine Mammal Mitigation Protocol – Piling (Rev B) and 19.14.2 Outline Marine Mammal Mitigation Protocol – UXO (Rev B) submitted at Deadline 1.The Applicant will commit to visual watches of at least 30 minutes as per JNCC (2010) guidance in the final piling MMMP produced at the post-consent stage.
H19	We do not agree with the assessment conclusions in some cases. Please refer to above comments.	N/A	The Applicant has considered all of the above comments from Natural England and has responded to them appropriately regarding both the ES and HRA assessments, with amendments made throughout where appropriate.
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.	Following industry standard precedent on similar projects (including Hornsea Project Four and Sheringham and Dudgeon Extension projects), the potential impacts to transboundary sites are not considered to be significant based on the distance to site from VE. Additional rationale will be provided for each potential effect within Section 9.1 of the 5.4 RIAA [APP-040] at Deadline 1. The Project has attempted to consult with transboundary consultees on the site selection and screening, with limited responses. In the absence of detailed responses from consultees, the approach used is considered appropriate.
H21	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.	Seismic surveys are considered within the assessment following the methodology stated within paragraph 9.2.27. For example, Table 12.3 and 12.4 consider four seismic surveys within the in-combination assessment of the SNS SAC, however due to the high level nature of information surrounding the surveys they were not able to be considered at the same level as other projects hence the low tier in which they sit. The Tier for seismic surveys has been updated through 5.4 RIAA [APP-040] which will be submitted at Deadline 1 to ensure is correctly aligned to Tier 7.
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	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.	The Applicant is not committing to NAS given the conclusions of no AEoI in the HRA and the Applicant maintains that NAS is not required.

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	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 AEoI 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.		Currently, the primary measure outlined in 9.15 Outline Southern North Sea Special Area of Conservation Site Integrity Plan [APP-246], is the co-ordination of timings so that the Statutory Nature Conservation Bodies (SNCBs) daily and seasonal thresholds are not exceeded for harbour porpoise. However, Section 3.3 of 9.15 Outline SNS SAC SIP [APP-246], outlines measures that will be considered during the development of the final SIP submitted at the post-consent stage, including: > Air bubble curtains; > Pile casings; and > Resonator-based noise mitigation systems The 9.15 Outline SNS SAC SIP [APP-246], follows current guidance and thresholds (Joint Nature and Conservation Committee (JNCC) et al., 2020). The aim of finalising the SIP in the post-consent phase (prior to construction) is to take into account any guidance and requirements at that time, as well as the final design of the Projects. Developing the final SIP prior to construction, rather than finalising now, allows the consideration and assessment of other relevant technologies or methodologies that may have emerged and have been proven to be effective by the time of offshore construction. Confirmation of any measures that will be employed cannot be confirmed until project design parameters are finalised. Further assessment will be conducted prior to construction, based on the foundation type and installation method. If significant risk of disturbance to marine mammals remains this assessment will then be used to determine if further mitigation measures which reduce sound propagation and disturbance are required. If they are required, then a review will be conducted to determine what is the most appropriate and effective method based on the latest and available methods prior to construction. This will include a review of all suitable noise abatement measures at that time. This will be done in consultation with Natural England during the preconstruction phase together with consultation in developing the final SIP prior to construction.

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H23	APP-040 Sec 12.3 Para 12.3.43 Pg. 626 Natural England does not agree to the conclusion of no AEoI for in-combination impacts of the project for disturbance of harbour porpoise in the SNS SAC across a season. 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 injury caused by underwater noise not to reduce disturbance, it cannot be used as a justification to support no AEoI. To reduce disturbance to harbour porpoise alone and in-combination, the applicant needs to commit to NAS to significantly reduce the sound at source.	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.	The Applicant is not committing to NAS given the conclusions of no AEoI in the HRA and the Applicant maintains that NAS is not required. Currently, the primary measure outlined in 9.15 Outline Southern North Sea Special Area of Conservation Site Integrity Plan [APP-246], is the co-ordination of timings so that the Statutory Nature Conservation Bodies (SNCBs) daily and seasonal thresholds are not exceeded for harbour porpoise. However, Section 3.3 of the 9.15 Outline SNS SAC SIP [APP-246], outlines measures that will be considered during the development of the final SIP submitted at the post-consent stage, including: > Air bubble curtains; > Pile casings; and > Resonator-based noise mitigation systems The 9.15 Outline SNS SAC SIP [APP-246], follows current guidance and thresholds (Joint Nature and Conservation Committee (JNCC) et al., 2020). The aim of finalising the SIP in the post-consent phase (prior to construction) is to take into account any guidance and requirements at that time, as well as the final design of the Projects. Developing the final SIP prior to construction, rather than finalising now, allows the consideration and assessment of other relevant technologies or methodologies that may have emerged and have been proven to be effective by the time of offshore construction. Confirmation of any measures that will be employed cannot be confirmed until project design parameters are finalised. Further assessment will be conducted prior to construction, based on the foundation type and installation method. If significant risk of disturbance to marine mammals remains this assessment will then be used to determine if further mitigation measures which reduce sound propagation and disturbance are required. If they are required, then a review will be conducted to determine what is the most appropriate and effective method based on the latest and available methods prior to construction. This will include a review of all suitable noise abatement measures at that time. This will be done in consultation with Natural England during the preconstruction phase together with

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			consultation in developing the final SIP prior to construction.

Table 2.10 Applicant's response to Natural England Appendix I – Seascape Landscape and Visual

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I1	Table 10.3, Pages 63 & 64 Natural England notes that the Applicant has introduced a definition of what an "immediate setting" is ("the foreground seascape"), allowing them to assert that the project is a 'horizon development'. 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.	The high sensitivity of the wildness and tranquillity special qualities of the SCHAONB, and views out to sea from the AONB coastline, are recognised in 6.2.10 Seascape, Landscape and Visual Assessment [APP-079]. As noted in Table 10.3, the assessment describes the 'immediate setting' of the SCHAONB and 'horizon development' as a way of distinguishing between the effects of development on the distant visual horizon/open seascape compared to development at close range in the foreground seascape (immediate setting). The Applicant considers that where WTGs are visible closer to shore, in the foreground seascape or visible next to coastal focal points or complex and enclosed coastal landscapes (immediate setting), there is potential for adverse effects of higher magnitude to occur. Offshore wind farms tend to have lower levels of effect, of less adversity, when located in the seascape backdrop away from the seascapes visible at the coast, in locations on or beyond the horizon ('horizon development'). The Applicant accepts that the VE array areas are within the seascape setting of the SCHAONB, they may be visible in views from its coastline and effect certain special qualities, however these effects are found to be not significant in 6.2.10 Seascape, Landscape and Visual Assessment [APP-079].
I2	Table 10.3, Pages 64-67 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. 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:	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.	The Applicant notes that Natural England advise that the landscape and visual impacts from Dunwich Beach are not likely to be significant; and that significant effects are identified by Natural England at five viewpoints in Table 2 (between Dunwich Heath and Orford Ness) using the 'apparent height' metric. The Applicant considers that there are significant limitations in the use of the 'apparent height' analysis (expressed in degrees of vertical angle) presented in Table 2 of Natural England's relevant representation. There is no basis in guidance or policy for the use of this metric nor the threshold of significance that Natural England have applied. Judgements on significance should properly be based on the assessment material provided in the ES which have been undertaken in accordance with best practice guidance (GLVIA3). There is no established guidance which reduces seascape and visual assessment to a quantitative assessment of values, which is over simplistic. GLVIA3 recognises that *'assessing visual effects is not a quantitative process*' (para 6.3) and '*much of the assessment must rely on qualitative judgement about the significance of change*' (para 2.23). Variations in the apparent height of turbines, their lateral spread and distance from different viewpoints are incorporated in the Applicant's visual assessment 6.2.10 Seascape, Landscape and Visual Assessment [APP-079], together with appropriate consideration of other criteria informing magnitude of change and sensitivity to change, to inform judgements on significance of effect. The vertical scale of the VE turbines is best appreciated during field evaluation at the viewpoints with reference to the material provided in the ES, particularly the photomontages

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	> The VE WTGs, even the ~320m blade tip height design option, will appear significantly taller than the Greater Gabbard Offshore Wind Farm (OWF) and Galloper OWF turbines. > 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. 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.		(Figures 10.26 to 10.46 [APP-204 to APP-224] inclusive), which provide a close representation of the vertical scale of the WTGs viewed from actual viewpoints. Natural England's apparent height in Table 2 is based on the closest WTG within the array, however variations in apparent height will occur between different WTGs depending on and decreasing with distance. Natural England's finding that apparent heights of above 0.4 degrees are potentially significant is based solely on the closest WTG. It is unlikely to be representative of the variations and similarities in the apparent height of WTGs that will occur between different WTGs in the VE array with varying distance. These variations in the apparent height of all WTGs in the array are shown clearly in the photomontages (Figures 10.26 to 10.46 [APP-204 to APP-224] inclusive) and incorporated in the Applicant's visual assessment in 6.2.10 Seascape, Landscape and Visual Assessment [APP-079]. Notwithstanding the Applicant's reservations about the limitations of the 'apparent height' metrics presented in Table 2, the Applicant would highlight that the VE WTGs (at 399m above LAT, reduced to 370m LAT in the dDCO Rev B) may, according to Table 2, occupy less than 0.566 vertical degrees in all views from the SCHAONB. The Applicant notes that this appears to be a relatively small angle in comparison to the 180˚ arc of sky that may be visible to an observer from open locations along the coast and that the effect occurs at the very edge of these big skies on the offshore horizon. The Applicant notes that the assessment in 6.7.10.2 Viewpoint Assessment of the ES [APP-198] demonstrates that it has not simply relied on separation distance to form its conclusions. The magnitude of change for each viewpoint is informed by assessments of distance, field of view, size/amount visible, scale (height), consistency of image, skyline and contrast/context to form a balanced assessment. The Applicant does, however, consider that distance is a key factor. The range of distances from viewpoints to the closest point of the VE array area is from 38.2 km at Orford Ness (Viewpoint 9) to 49 km at Felixstowe (Viewpoint 11). At this range of distances, and factoring in other considerations (identified above), the magnitude of change is assessed as being low from most viewpoints, and the significant of effect no greater than moderate/minor (and not significant in EIA terms). These distances are also a key component in understanding the likely visibility frequency of the VE WTGs, with a range of visibility frequency between 8.9% - 20.9%, such that in reality, weather conditions will limit actual visibility of the WTGs. Based on Met Office visibility data, for approximately 80% of the time there would be no visibility, or only very poor visibility, of the WTGs from the SCHAONB coast. The Applicant notes its comments in relation to points (a), (b) and (c) in Table 10.3 (p64-67) of 6.2.10 Seascape, Landscape and Visual Assessment [APP-079].The Applicant has further reviewed the apparent height and lateral spread of the VE WTGs in the photomontages (Figures 10.26 to 10.46 [APP-204 to APP-224]) and would also add the following observations: > The Applicant considers that WTGs within the southern VE array area at 399 m and 320 m to blade tip (above LAT) will not appear 'significantly taller' than the Galloper

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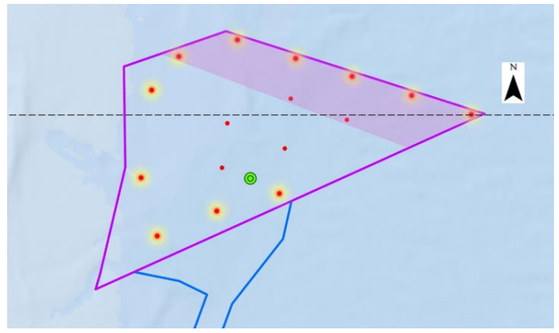
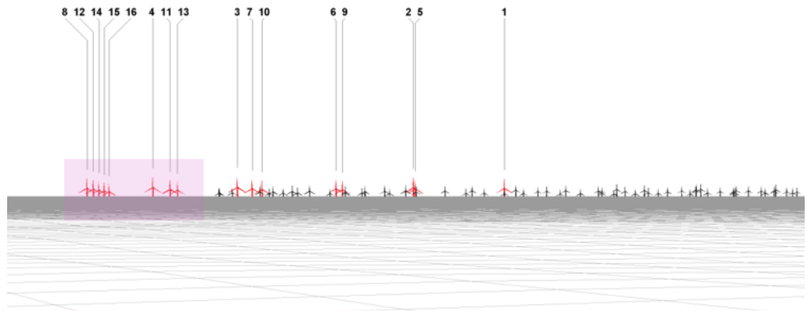
			and Greater Gabbard WTGs in views from the SCHAONB; they will be viewed with a similar overall blade tip height, albeit with a perceptibly larger rotor diameter. > WTGs located within the northern VE array area will appear taller than the Galloper WTGs, however the Applicant does not consider them to be 'significantly taller' and factoring in all considerations, the magnitude of change is assessed as being low from most viewpoints on the SCHAONB coastline and the significant of effect no greater than moderate/minor (and not significant in EIA terms). > As described in the conclusions of 6.2.10 Seascape, Landscape and Visual Assessment [APP-079], most of the VE WTG array will be viewed behind and in the same section of the view as the existing Greater Gabbard and Galloper offshore wind farms, thereby minimising the additional horizontal spread of WTGs. The additional lateral spread of VE WTGs to the north of Galloper will occupy a relatively narrow additional horizontal angle of 2.5° to 8° degrees in the five views Natural England consider to be significant. This additional lateral spread is considered a relatively narrow addition as a portion of the 180° sea view available to observers. > In respect of the presence of the most northerly 8 WTGs forming 'a new object on the horizon', the Applicant has requested clarification from Natural England as to which 8 WTGs it refers to in its relevant representation. Due to the angle of view from the SCHAONB, the 8 most northerly WTGs in the design envelope layout (Figure 10.1) are not generally the 8 WTGs that are viewed as being most northerly in views from the SCHAONB. For the purpose of this response to Natural England's relevant representation, the Applicant assumes that Natural England refers to the 8 WTGs that are viewed as most northerly from the SCHAONB, as shown in the wireline view from Orford Ness (Figure 10.34e [APP-212]), consisting of the two northly turbine rows, formed by turbines T8, T12, T14, T15, T16; and T4, T11, T13, as illustrated by the pink area/box in the image extracts below from Figure 10.1 [APP-199] and Figure 10.34e [APP-212]. The Applicant notes that it is these two rows of VE WTGs that will be located on the horizon to the north of Galloper in the view from Orford Ness and that these WTGs will add further offshore WTG elements on the horizon adjacent to the existing offshore wind farms in the view. The Applicant does not consider the VE WTGs to be an entirely 'new object' due the presence of existing wind farms in the views from the SCHAONB and highlights the consented East Anglia TWO WTGs that will become present in views when constructed.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
			 
I3	Table 10.3, Pages 64-67 The Applicant's view is that effects from an increase in WTG density is "considered preferable" 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.	Evidence should be submitted to support the Applicant's assessment that effects from an increase in WTG density is "considered preferable" to an increase in HFoV, and what this outcome means for the assessment of harm to the SCHAONB and SHC.	The Applicant agrees that WTG height, turbine density and lateral spread are all parameters that should be used to inform judgements on the magnitude of change (and therefore significance of effects) on the SCHAONB. These criteria are set out on page 38-39 of 6.7.10.1 Seascape, Landscape and Visual Methodology [APP-197] together with other criteria informing magnitude of change, such as the degree of contrast, consistency of image, skyline/background and nature of visibility. Under the 'field of view' criteria (p39), the methodology [APP-197] states '*Generally, the more of the proportion of a view that is affected, the higher the magnitude of change will be. If the VE array areas extend across the whole of the open part of the outlook, the magnitude of change will generally be higher as the full view will be affected. Conversely, if the VE array areas cover just a narrow part of an open, expansive and wide view, the magnitude of change is likely to be reduced as they will not affect the whole open part of the outlook. This can in part be described objectively by reference to the horizontal/ vertical FoV affected, relative to the extent and proportion of the available view'. This criterion is supported in guidance (GLVIA3) (Landscape Institute, 2013) which states (6.39) that magnitude of change needs to take account of 'the proportion of the view occupied by the proposed development'*. The methodology [APP-197] also states, with respect to the 'skyline/background' criteria, that '*Whether the VE array areas will be viewed against the skyline or a background seascape may affect the level of contrast and magnitude. If the VE array areas add to an already developed skyline the magnitude of change will tend to be lower'*. This criterion is also supported in guidance (GLVIA3) (Landscape Institute, 2013) which states (6.44) that '*large-scale changes which introduce new, non-characteristic or discordant or intrusive*

<table>
<tr><th>Ref</th><th>Relevant Representation Comment</th><th>Natural England's Recommendation to Resolve Issue's</th><th>Applicant's Response</th></tr>
<tr><td></td><td></td><td></td><td>elements into the view are more likely to be significant than small changes or changes involving features already present in the view'.

In accordance with the criteria set out in its methodology (which is based on accepted industry standards/guidance, extensive assessor experience in professional practice and testing through Inquiry and Examination), it is the professional judgement of the Applicant that because the VE array areas are primarily viewed within part of the seascape horizon that is already influenced by existing WTGs (Galloper and Greater Gabbard), the magnitude of change is relatively lower than if the VE array areas extended wholly across the open (undeveloped) part of the outlook, which would extend the impact through the wider seascape.

With respect to the assessment of harm to the SCHAONB, the conclusion of 6.2.10 Seascape, Landscape and Visual Assessment [APP-079] is that significant adverse effects on special qualities of the SCHAONB will be avoided and the assessed effects would not undermine the statutory purpose of the SCHAONB nor compromise the purposes of the SCHAONB designation. The full reasoning for this conclusion is set out fully in Section 10.18.</td></tr>
<tr><td>I4</td><td>Table 10.3, Pages 67 & 68

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.

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.

We offer advice on the following statements within the assessment:

> "the retention of some gap between VE and East Anglia TWO in the majority of</td><td>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.

We also advise that the Applicant should provide the HfoV expressed in degrees of the gap remaining between the proposed VE array and the EA2 array to facilitate an understanding of what an "apparent gap" means.</td><td>As noted in response to I2 above, the Applicant has requested that Natural England clarify the northerly 8 WTGs referred to and has assumed that the comments provided refer to the two northly WTG rows (T8, T12, T14, T15, T16; and T4, T11, T13) as viewed in the wireline view from Orford Ness (Figure 10.34e [APP-212]).

In respect of the 'curtaining effect' the Applicant considers that the 8 WTGs referred to within the northern portion of the VE array area, only fully 'bridges the gap' between Galloper OWF and the consented EA2 array in one viewpoint – Viewpoint 1 Southwold [APP-204]. In all other viewpoints there is some visible gap between the VE array and EA2 to the north. This gap is narrower, but evident, in viewpoints to the north such as from the Dunwich area (Viewpoint 2 and 3) [APP-205 and APP-206]. Moving south, the gap between the VE array area and EA2 becomes wider and clearly apparent with views out to sea through the gap, in all other viewpoints southwards from Sizewell Beach, including Viewpoints 4, 5, 6, 7, 8, 9, 10 and 11 within the SCHAONB [APP-207 to APP-214]. It is also notable that the HFoV of the gap between VE and EA2 is narrowest in the most distant viewpoints (e.g. Vp1) (where visibility is most reduced) and widest in the closest viewpoints (e.g. Vp9) (where the gap may be appreciable).

The Applicant has provided below, the HfoV (in degrees) of the gap remaining between VE and the EA2 array for viewpoints within the SCHAONB:
<table>
<tr><th colspan="2">Viewpoint</th><th>HfoV (°) of gap between VE and EA2 array</th><th>Distance from VE array area (km)</th></tr>
<tr><td>1</td><td>Southwold</td><td>1.0°</td><td>47.1</td></tr>
<tr><td>2</td><td>Dunwich Beach</td><td>2.6°</td><td>45.5</td></tr>
<tr><td>3</td><td>Dunwich Heath</td><td>3.5°</td><td>43.8</td></tr>
<tr><td>4</td><td>Sizewell Beach</td><td>5.0°</td><td>41.0</td></tr>
<tr><td>5</td><td>Thorpeness</td><td>6.1°</td><td>39.4</td></tr>
<tr><td>6</td><td>Aldeburgh</td><td>7.0°</td><td>38.9</td></tr>
<tr><td>7</td><td>Orford Castle</td><td>8.1°</td><td>40.9</td></tr>
<tr><td>8</td><td>Burrow Hill</td><td>7.6°</td><td>43.5</td></tr>
</table></td></tr>
</table>

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
	views". 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 "apparent gap" means. > "the relatively narrow additional increase in lateral spread of the VE WTGs". 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. > "their introduction as elements that are similar to those that are present or consented". Natural England advises that the sheer size of the VE turbines (northern array) will create a harsh juxtaposition on the horizon with the existing arrays. > "their very long distances from the SCHAONB on the sea skyline". 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.		9 Orfordness 8.5° 38.2 10 Shingle Street 6.4° 45.1 11 Old Felixstowe 4.9° 49.0 The Applicant's position is that on balance the 'curtaining' effect is not significant given the retention of this gap between VE and EA2 in the majority of views; the very long distance of the viewpoints where the gap is narrowest; the relatively narrow additional increase in lateral spread of the VE WTGs; their introduction as elements that are similar to those that are present or consented; and their very long distances from the SCHAONB on the sea skyline, all of which diminishes the potential 'curtaining' effect, and limits the cumulative effect to occurring in only the most optimum, infrequent, visibility conditions.
I5	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	The Applicant notes that Natural England welcomes the reduction in the maximum blade tip height to 399 m (above LAT) (395 m above MHWS) in the submitted proposal. The Applicant can now confirm that the maximum blade tip height has now been reduced even further to 370 m LAT to address concerns from the MoD regarding radar interference which will have a corresponding benefit in reducing visual impact.
I6	Table 10.3, Page 70	N/A	The Applicant notes that it is Natural England's opinion that the minimum WTG height parameter of ~320m blade tip height is more acceptable. The conclusion of 6.2.10 Seascape, Landscape and Visual Assessment [APP-079] is that significant adverse effects on special qualities of the SCHAONB will be avoided and the assessed effects would not undermine the statutory purpose of the SCHAONB nor compromise the purposes of the SCHAONB designation. The full reasoning for this conclusion is set out fully in Section 10.18.

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	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 (Galloper and Greater Gabbard arrays), albeit partially obscured. Therefore, the need to consider Natural England's Design Principles remains even for this design. 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.		
I7	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: Design Principle 1: Maintain a clear visual gap between VE and the consented EA2 by limiting northward lateral spread of the array. 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. 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).	Further consideration of Natural England's proposed Design Principles, followed by integration of the principles into amended designs.	The Applicant recognises the need for Good Design outlined in the Overarching National Policy Statement for Energy (EN-1). The offshore design principles document (9.3 Offshore Design Principles [APP-233]) sets out all considerations that informed the offshore design for the array and the guidance that will be considered going forward. Design mitigation has been included in the Project design as described in Table 10.18 of 16.2.10 Seascape, Landscape and Visual Assessment [APP-079]. This is summarised as follows: > The spatial extent of the VE array area was reduced between Scoping and PEIR, providing a reduction in the lateral spread of WTGs when viewed from the coast, with a section of the northern array removed to help maintain a clear visual gap between existing wind farms and the consented East Anglia TWO windfarm, as seen from the Suffolk coast. The Applicant considers that the spatial extent of the VE array area has limited the northward lateral spread and had regard to Natural England's recommendations in Design Principle 1. > The VE array areas are located to the eastern side of the Greater Gabbard and Galloper OWFs, with a large separation distance of 38.7 km from the SCHAONB at its closest point, which therefore reduces the apparent height of the WTGs when seen from the SCHAONB. The maximum height of the VE WTGs has been reduced from 424 m blade tip height to 399 m blade tip height above LAT (395 m above MHWS), leading to a reduction in the ZTV and apparent height of the WTGs in views from the SCHAONB. The maximum tip heigh has been reduced even further to 370 m LAT. Requiring the project to condense the northern array to the east would significantly impact potential project capacity and efficiency, reducing its commercial viability. Further it would likely result in an array not in compliance with the search and rescue requirements of MGN654 and finally would have a negligible impact on the visual impact, given the closest turbine is already over 37km offshore. > The Applicant considers that Natural England's recommendation in Design Principle 3 is flawed because it implies that the Project should not have visible elements on the

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
	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.		horizon, which is not a realistic or reasonable design aim for an offshore wind farm project. Criteria for good design in Section 4.7 of NPS-EN1 recognise the functionality of an object is equally important to its visual appearance. The Applicant has sought to limit the northerly spread of WTGs as far as possible, and has reduced the maximum height of the WTGs, to an extent that the effect of the VE array area on the special qualities of the SCHAONB has been assessed as not significant in the ES and by other Interested Parties (East Suffolk District Council and Sussex County Council). The Applicant is unable to further reduce the northern spatial extent of WTGs in the array area, given the lack of significant effects arising and the ultimate purpose and functionality of the development to maximise renewable energy regeneration in line with National Planning Policy (NPS EN1), which recognises the urgent need for critical national priority (CNP) infrastructure to achieve our energy objectives (Section 4.2) (DESNZ, 2023a).
I8	Table 10.3, Page 71 and Para 10.11.2 31 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 "relatively permeable", nor that it "does not create enclosure", or that "the apparent height of the VE WTGs is relatively small" (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.	The effect of the VE array areas on the 'sense of enclosure and isolation' special quality is assessed on p219-220 of 6.2.10 Seascape, Landscape and Visual Assessment [APP-079]. The Applicant notes that the SCHAONB Special Qualities document (LDA Design, 2016) defines this special quality as the 'Sense of enclosure provided by (e.g.) woodland, landform that offers a feeling of isolation'; and that the indictor of this special quality in the SCHAONB is that 'Forestry plantations create a sense of enclosure and isolation, contrasting to open and more exposed areas along the coast and on the Sandlings heaths'. Areas of the SCHAONB that are enclosed and isolated due to woodland and landform enclosure, are by their very nature, unlikely to have visibility of the VE array areas and effects on this special quality are assessed as minor and not significant in 6.2.10 Seascape, Landscape and Visual Assessment [APP-079]. The Applicant considers that the sense of openness experienced from the exposed coastline and the Sandlings Heaths is the relevant special quality. The effect of VE array areas on the sense of openness and exposure quality of the SCHAONB is assessed on page 219 of the 6.2.10 Seascape, Landscape and Visual Assessment [APP-079]. On balance, the effect of the VE array areas on the sense of openness and exposure of the coastal areas of the SCHAONB is considered to be of low magnitude and not significant (moderate/minor). Although the VE array areas will result in additional influence of offshore wind energy development in open sea views, the fundamental sense of openness and exposure experienced from exposed areas on the coast and seaward will remain and continue to be experienced. The Applicant considers that larger scale features with a solid, impermeable massing generally provide higher levels of enclosure than individual elements distributed in an array. Enclosure of an offshore view would typically indicate that the view would be enclosed to the short distance by a barrier. The Applicant considers that the VE array areas are relatively 'permeable', with space between WTGs and views between them to the sky beyond (varying with the density of the turbine array) as evident in the ES photomontage visualisations. The ES assessment notes that due to its long distance offshore and the simple form of the coastline, the VE array areas will be seen on and beyond the horizon, as a 'horizon development' to a large open seascape, rather than being viewed 'within' its seascape and it does not enclose sections of complex or indented coastline or bays.

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I9	Table 10.3, Page 71 and Para 10.11.2 31 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 "relatively permeable", nor that it "does not create enclosure", or that "the apparent height of the VE WTGs is relatively small" (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.	Please see response to I8.
I10	Table 10.3, Pages 71 & 72 We note that the ES presents a revised indicative Maximum Design Scenario (MDS) layout assessed in the SLVIA. This 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 'VE will entirely occur in the context of the existing developments'. We also disagree that the VE WTGs can be considered as 'generally in keeping' with existing arrays given the starkly differing apparent heights between Galloper / Greater Gabbard arrays and VE (see Table 2 below).	The SLVIA should be updated to consider the implications of removing the remaining gap between the existing/proposed OWF arrays in this area.	The Applicant notes that the likely significant effects of the VE arrays areas on the views and special qualities of the SCHAONB are assessed in 6.2.10 Seascape, Landscape and Visual Assessment [APP-079]. The cumulative effect of the VE array areas with respect to East Anglia TWO are assessed in Section 10.13, in the Tier 1 assessment (including Tables 10.32 – Table 10.36) which includes consideration of the potential 'curtaining' effect in the gap between the VE array and East Anglia TWO. As noted in Table 10.3, the grouping of VE WTGs in the northern portion of the northern VE array area is recognised as contributing to the potential effect, however these WTGs will occur as a northern extension of the Galloper / Greater Gabbard arrays and will therefore be seen in the context of these operational wind farms in views from closest parts of the SCHAONB coastline. As described in the under the assessment of the 'influence of incongruous features or elements' special quality (page 211) 6.2.10 Seascape, Landscape and Visual Assessment [APP-079], in the context of the other recognised development influences and features, the VE array areas are not considered to be 'incongruous' and the WTGs not overtly unusual in the context of the existing and consented WTGs in the seascape setting of parts of the SCHAONB. The height of the VE WTGs is considered to be 'generally in keeping' with these existing arrays, particularly the WTGs located to the south and east of the VE array areas, while noting that those WTGs to the north of the VE array area are likely to viewed with a higher apparent height in certain views, which may be more akin to the apparent scale of those consented at East Anglia TWO. With respect to the apparent height of the VE WTGs, the Applicant considers that WTGs within the southern VE array area at 399m and 320m to blade tip (above LAT) will generally be in keeping with the existing Galloper and Greater Gabbard WTGs in views from the SCHAONB; with a similar overall blade tip height, albeit with a perceptibly larger rotor diameter. It is accepted that WTGs located within the northern VE array area will appear taller than the Galloper WTGs in certain views, which may be more akin to the apparent scale of those consented at East Anglia TWO, however the Applicant does not consider them to be 'significantly taller' and factoring in all considerations, the magnitude of change is assessed as being low from most viewpoints on the SCHAONB coastline and the significant of effect no greater than moderate/minor (and not significant in EIA terms).

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
I11	Table 10.3, Page 72 & Table 10.36 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. 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. 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.	The assessment needs to be updated to consider the additional impact of VE in terms of the 'cluttering' effect identified, the implications for the special qualities, and potential mitigation measures in line with the Natural England Design Principles.	As noted in Table 10.14 of 6.2.10 Seascape, Landscape and Visual Assessment ([APP-079] and in the SCHAONB Special Qualities Document (LDA Design, 2016) *'Offshore wind turbines at Greater Gabbard, Galloper and the more distant London Array are visible from some stretches of the coastline. These create a cluttered horizon….'.* The southern portion of the seascape setting of the SCHAONB is currently influenced by the existing Greater Gabbard (140 x 170m blade tip height) and Galloper (56 x 180.5m blade tip height) OWFs (para 10.7.61). As assessed in para 10.11.189, on balance, the additional effect of the VE array areas on the 'influence of incongruous features or elements' special quality is considered to be of low magnitude and not significant (moderate/minor), indirect, long-term and reversible. Although the VE array areas will result in additional influence of offshore wind energy development in the perceived character of the SCHAONB, the Applicant's assessment is that it will not impair, harm or change significantly the perception of this landscape quality, in adding to what is already described as the 'cluttered horizon' from 'some stretches of the coastline'.
I12	Table 10.3, Pages 72 & 73 Natural England advises that the most northerly 8 WTGs will create and draw focus to a new distinct object on the horizon, 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.	The Applicant should assess the harm from the most northerly 8 WTGs on the statutory purpose of the SCHAONB and special character of the SHC and identify potential mitigation in line with the Natural England Design Principles.	The Applicant has fully considered the likely significant effects of the VE array areas on the special qualities of the SCHAONB in 6.2.10 Seascape, Landscape and Visual Assessment [APP-079] (pages 208-227 and Table 10.26), which includes the effects arising from the most northerly 8 WTGs as part of the Project. There is no requirement or need to separately assess the effects of these 8 WTGs alone and any effects arising would be equal to or less than effects arising as a result of the full VE array areas. With respect to the assessment of harm to the SCHAONB, the conclusion of 6.2.10 Seascape, Landscape and Visual Assessment of the ES (APP-079) is that significant adverse effects on special qualities of the SCHAONB will be avoided and the assessed effects would not undermine the statutory purpose of the SCHAONB nor compromise the purposes of the SCHAONB designation. The full reasoning for this conclusion is set out in Section 10.18.
I13	Table 10.3, Page 73	The Applicant should revisit their assessment of the 'curtaining' effect with respect to the special qualities of the SCHAONB and SHC.	The Applicant's position is that on balance the 'curtaining' effect is not significant based on the cumulative effect assessments of the 'openness and exposure' special quality presented in Table 10.36 of 6.2.10 Seascape, Landscape and Visual Assessment [APP-079] and the further commentary provided on this matter in response to point I4 above. The Applicant's considers that the 'curtaining' effect is not significant given the retention of this gap between VE and EA2 in the majority of views; the very long distance of the viewpoints where the gap is narrowest; the relatively narrow additional increase in lateral spread of the VE WTGs; their introduction as elements that are similar to those that are present or consented; and their very long distances from the SCHAONB on the sea skyline, all of which diminishes the potential 'curtaining' effect, and limits the cumulative effect to occurring in only the most optimum, infrequent, visibility conditions.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
	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 does not agree that the VE array areas would close the gap in views out to sea along a ~20km stretch of SCHAONB coastline between Orford Ness to Dunwich. The assessment material submitted by the Applicant and noted in point I4 above, indicates that VE will bridge the gap between Galloper and East Anglia TWO from a much more localised geographic area near Southwold [APP-204] (some 47km away); that there is a narrow but evident gap in viewpoints from the Dunwich area (Viewpoint 2 and 3) [APP-205 and APP-206 respectively]; and wider and clearly apparent gap in all other viewpoints southwards from Sizewell to Orford Ness and Shingle Street, including Viewpoints 4, 5, 6, 7, 8, 9, 10 and 11 within the SCHAONB [APP-207 to APP-214 inclusive].

Table 2.11 Applicant's response to Natural England Appendix J – Onshore Ecology

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
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).	The Applicant notes that NE provides additional detail in respect of J1 in J33, and that their concern relates specifically to badgers. The Applicant assumes that this concern specifically relates to the area north of the A120, where badger survey was undertaken between May and July. The Applicant recognises that whilst badger surveys can be undertaken year-round, summer months are not optimal as dense vegetation may prevent access to or may obscure field signs. This limitation is recorded within Section 2.2 of 6.6.4.21 Protected Species Report and Figures (Confidential) [APP-152], which concludes "*This is considered to be a minor constraint to the objectives of this study, since the vast majority of the survey area proved accessible*". The Applicant is therefore confident that the assessment is valid, and that the mitigation proposed is appropriate. The Applicant also notes that pre-commencement/ pre-construction surveys will be undertaken for a number of species/ species groups, including badgers, due to the time that will have elapsed since the last surveys and the possibility that species presence or activity could have changed in the intervening period. The Applicant confirms that NE's requirement to secure surveys and any appropriate mitigation through the OLEMP is met. Within 9.22 Outline Landscape Ecological Management Plan - Revision B [AS-006], Table 7-1 provides further details of the pre-commencement/pre-construction surveys proposed, including details of proposed survey areas, timings and methodologies. All surveys will be undertaken by suitably experienced/ licensed ecologists who are members of an appropriate professional body, e.g. CIEEM. Mitigation measures in respect of badgers are included in Section 7.9 of 9.22 Outline Landscape Ecological Management Plan Revision B [AS-006]. The results of the pre-commencement/ pre-construction surveys will be used to identify whether any changes to the mitigation measures are required and the Final Landscape and Ecological Management Plan will be updated to reflect the survey results, as required. On the basis of the above, no further surveys for badgers are necessary at this stage.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
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.	The Applicant notes that NE provides additional detail in respect of this point in J32. The Applicant confirms that the assessment of impacts has been undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) (2022). 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2', which includes the requirement to consider the duration of impacts in relation to ecological characteristics such as protected species lifecycles. The time frames referenced in 6.3.4 Onshore Biodiversity and Nature Conservation [APP-086] are explicitly unrelated to protected species or habitats life cycles (and are presented as such in section 4.6.10 of 6.3.4 Onshore Biodiversity and Nature Conservation [APP-086]). They are provided simply to add context for how long an effect may last, irrespective of how time relates to the ecological feature experiencing it. With respect to invertebrates of conservation concern, these are primarily associated with habitats adjacent to the coast or to the Holland Brook, hedgerows and ancient or semi-natural woodland. The extent of temporary loss to these habitats is relatively small (see Table 4.17 in 6.3.4 Onshore Biodiversity and Nature Conservation [APP-086]). The proportion of any important invertebrate population affected would therefore be small. The assessment of a potentially significant effect until the proposed mitigation has become established is therefore considered valid and no amendment to the assessment is proposed. With respect to other protected and notable faunal species, following the implementation of proposed mitigation measures, no significant residual effects are predicted at any timescale (see Table 4.18 in 6.3.4 Onshore Biodiversity and Nature Conservation [APP-086]). This conclusion would not change following further consideration of the life cycle of the species assessed and as such no amendment to the assessment is proposed.
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	Please see response to NE-RR09.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
		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.	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. 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 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. 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.	The Applicant is currently undertaking seasonally appropriate vegetation and invertebrate surveys on Orford Ness. The order limits for the compensation site have been refined down to a required area (6 ha as agreed with NE) following further engagement with local landowners and no longer includes the artificial shingle bank close to the coastline. The surveys will be used to inform the avoidance, mitigation, monitoring and management measures that are required. In the area proposed for LBBG compensation, the shingle morphology appears to have already been modified as it lacks the characteristic ridges of the unmodified habitat. This area of shingle is therefore not as vulnerable to damage as other areas of Orford Ness. Moreover, there are existing tracks leading to the LBBG compensation site which can be used for access for monitoring and maintenance. It should also be noted that the works proposed (namely the installation of a fence and ongoing habitat management) are of a very minor scale and have already been approved for a neighbouring compensation site within the SAC. It is acknowledged that the Norfolk / East Anglia compensation site is not in an area containing saline lagoons, however it should be stressed that physical impacts to the saline lagoons are not expected from the Five Estuaries works. Further, the installation of fencing is prevalent in other areas of the SAC 6.8.1.3 – Lesser Black Backed Gull Ecological Impact Assessment [APP-228]). The Applicant will provide interim survey reports to NE and the ExA and provide further details of the refined 6ha compensation area in an updated Lesser Black Backed Gull Compensatory Areas Environmental Impact Assessment following Deadline 1 (Examination Library reference to be confirmed, current version is [APP-225]). Once all surveys are complete, a final version of the Lesser Black Backed Gull Compensatory Areas Environmental Impact Assessment (Examination Library reference to be confirmed) will be provided, together with supporting documents:

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
			> Lesser Black Backed Gull Habitats Regulations Assessment (Examination Library reference to be confirmed, current version is [APP-054]) > Lesser Black Backed Gull Flood Risk Assessment (Examination Library reference to be confirmed, current version is [APP-226]) > Lesser Black Backed Gull Landscape and Visual Impact Assessment (Examination Library reference to be confirmed, current version is [APP-227]) > Lesser Black Backed Gull Ecological Impact Assessment (Examination Library reference to be confirmed, current version is [APP-228])
J5	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? 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.	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.	The Applicant has not yet determined the operational port for Five Estuaries. Any additional works or traffic within harbour limits will be subject to the harbour authority's harbour order and works requiring further consent will be considered by the harbour authority at the appropriate time.
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.	Noted by the Applicant.
J7	APP-045, Sec 2.2.2, 2.2.4, 4.2.6, & Table 4.2 Lesser Black Backed Gull Compensation Site at Orford Ness 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	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.	It is acknowledged that the survey work was undertaken in January and that assessment of impacts on uncommon plants and invertebrates was based on a desk study, so far. As noted above (J4), the Applicant is currently undertaking vegetation and invertebrate surveys over the LBBG compensation site on Orford Ness. The SAC, SSSI and Ramsar site features will be taken into

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	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. Natural England is therefore concerned that the potential for Orford Ness – Shingle Street Special Area of 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.	These surveys should be carried out to inform consent and as soon as possible, but no later than the start of September.	account when designing the installation/removal and maintenance of the fence, and when determining the management requirements for the vegetation within the compensation site.
J8	APP-045 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, wave heights, temperatures and drought).	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.	An examination of aerial photographs indicates that the seaward side of Orford Ness at the position of the LBBG compensation site has advanced seaward since 1945, while the position of the River Alde (landward side) has remained stable. The LBBG compensation area is protected on the seaward side by a very substantial (~10m in height), shingle ridge however the presence of saline lagoons indicates that sea water is able to percolate under the shingle. The greatest change that has happened in this area since 1945 is the installation of the Cobra Mist AN/FPS-95 antenna, when the shingle and saltmarsh habitat was highly modified, with the area apparently levelled and largely cleared of vegetation, and new ditches, concrete roads and fences were constructed. For these reasons the shingle habitat on the chosen site is not considered to be highly sensitive. Further, the proposed works will not impact the habitat's resilience to climate change and therefore does not require an impact assessment.
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	Natural England advises that unless there are significant changes in design parameters will not be providing further comment on GCN DLL during examination.	Noted by the Applicant.

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	can confirm that submitted information is in line with what has previously been agreed.		
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.	Based upon current survey and assessments, mitigation measures for impacts on Orford Ness – Shingle Street SAC have been proposed, as set out in 5.4.5 Lesser Black Backed Gull Compensation Site – Habitats Regulations Assessment [APP-045] and 6.8.1.3 Lesser Black Backed Gull Ecological Impact Assessment [APP-228]. As set out above (J4, J7 and J8), the Applicant is currently undertaking vegetation and invertebrate surveys over the LBBG compensation site on Orford Ness. Should these, on assessment, reveal significant effects not already identified, then additional mitigation measures will be proposed.
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 'no significant effects are likely on perennial vegetation on coastal shingle'. 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.	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 the coastal shingle and vegetation features of the designated sites in this area.	As set out in 5.4.5 Lesser Black Backed Gull Compensation Site – Habitats Regulations Assessment [APP-045] and 6.8.1.3: Lesser Black Backed Gull Ecological Impact Assessment [APP-228], the area within the LBBG meets with the definition of the Annex I habitat of 'H1220 Perennial vegetation of stony banks' which is rather broad. However, the area has been disturbed (perhaps levelled) in the past, being largely flat and lacking the characteristic wave-formed shingle ridges of the unmodified habitat. This modification occurred prior to the designation of the site as an SAC apparently at the time of the construction of the construction of the Cobra Mist AN/FPS-95 antenna; aerial images (see below) from 1972 appear to show extensive vehicle tracks over the area and a lack of vegetation. The vegetation at the LBBG compensation site is now dominated by sea couch and other coarse grasses. Nevertheless, mitigation is proposed to ensure the fence is installed sensitively, with the minimum disturbance possible and where possible following lines of existing ditches and fence lines where there is evidence of past ground disturbance. Based on observations on the same site of ground previously disturbed for fence installation, the vegetation is expected to quickly recover to the same plant communities found there now. Therefore, the conclusion within the EIA is valid.

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			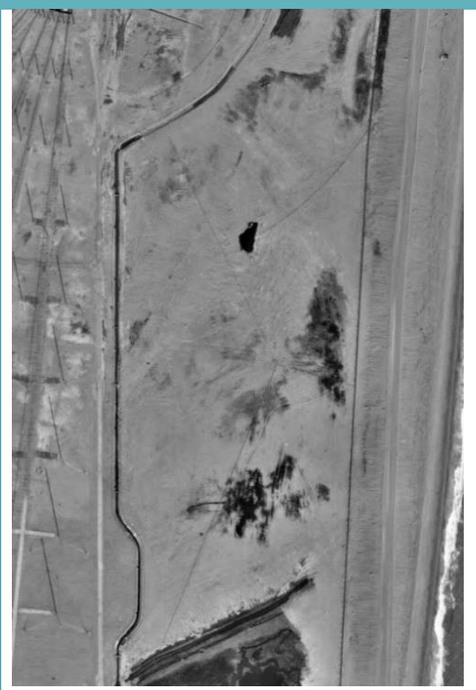
J12	APP-225 Natural England notes that the EIA does not consider impacts to the shingle morphology and sediment structure. Recoverability of damaged shingle is slow, particularly where it is more static and active geomorphological processes no longer have a major role in shaping shingle morphology. Typically, 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.	Natural England advises that the EIA should be updated to include an assessment of impacts to the shingle morphology and sediment structure.	As set out in our response to J11, the shingle morphology (and therefore sediment structure) has been modified in the past (prior to the designation of the SAC) and is now largely flat with no prospect of recovering what may have been its original wave-formed ridge morphology. Mitigation measures included within Lesser Black Backed Gull Compensation Site – Habitats Regulations Assessment [APP-045] and Lesser Black Backed Gull Ecological Impact Assessment [APP-228] will limit damage during construction and prevent it during maintenance, monitoring and management. These measures will be secured in an updated 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plans [APP-052], which will be submitted at a later Deadline.
J13	APP-225 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	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	The fence line will avoid saline lagoons and therefore no direct impacts could occur. The saline lagoons appear to be seepage lagoons – fed by sea water percolating under the large ridge on the seaward side.

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	terms of blockage to 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.	update the EIA, with mitigation measures brought forward and secured where a need is identified.	Seepage is the primary recharge mechanism for the lagoons rather than direct input from over-topping or overland flow. However, a flooding event occurred in the last decade which appears to have been a result over-topping on that landward side; the Alde Estuary. Given the size of the shingle ridge, there is no possibility of wave action moving shingle from the seaward (eastern) side towards or into the lagoons, and so no process with which the fence could interfere. Changes in shingle morphology as a result of climate change etc will be assessed further, as set out in our response to J12.
J14	APP-042, Sec 3.6.1 Natural England advises that the site selection for onshore ecology is precautionary and acceptable for project parameters included as part of the Application. 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 features, should further berth dredging be required.	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 AEoI may not be excluded.	Please see response to J5 above.
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.	Noted by the Applicant.
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,	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	The reference will be provided in 5.4 RIAA [APP-040] at Deadline 1 and is provided below: Wright, L. J., Ross-Smith, V. H., Austin, G. E., Massimino, D., Dadam, D., Cook, A. S., ... & Burton, N. H. (2012). Strategic Ornithological Support Services Project SOSS-05 Assessing the

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	citing an article by Wright (2012) as evidence but without listing it in the bibliography.	Harrier at the AOE SPA and Minsmere-Walberswick SPA are given, Natural England cannot agree no Likely Significant Effect (LSE) on this qualifying feature.	risk of offshore wind farm development to migratory birds designated as features of UK Special Protection Areas. An assessment is provided in Section 9.1.11 of 5.4 Report to Inform Appropriate Assessment [APP-040]. Further evidence is provided by Wernham, C., Toms, M., Marchant, I, Clark, I, Siriwardena, G. & Baillie, S. (eds). — The Migration Atlas : movements of the birds of Britain and Ireland. T & A D Poyser (A & C Black Publishers Ltd), London. 2002 which shows the majority of ringing recoveries occur to the south of the breeding site.
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 evidence, but without listing it in the bibliography.	See comment above (NE Ref J16).	The assessment is provided in Section 9.1.12 of 5.4 Report to Inform Appropriate Assessment [APP-040]. Further evidence is provided by Wernham, C., Toms, M., Marchant, I, Clark, I, Siriwardena, G. & Baillie, S. (eds). — The Migration Atlas : movements of the birds of Britain and Ireland. T & A D Poyser (A & C Black Publishers Ltd), London. 2002 which shows the majority of ringing recoveries occur to the south of the breeding site.
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.	This comment appears to apply to the first row of the table 'Impact avoidance/ reduction through project design' only as references and information is provided in other rows. The relevant reference is 6.3.4 Onshore Biodiversity and Nature Conservation [APP-086], noting that avoidance measures have been achieved primarily through route selection and use of trenchless crossing.
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.	For 5.4 Report to Inform Appropriate Assessment [APP-040], the relevant species is the breeding population of avocet in Holland Haven Marshes SSSI. The extent of the buffer zones will be established by the ECOW based on guidance and experience, and the effect will be observed. Although not explicitly stated at 11.6.98 of 5.4 Report to Inform Appropriate Assessment [APP-040], the ECOW will increase the buffer zone if construction activity disturbs breeding avocet.

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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 '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.' Natural England does not agree that mitigation is not 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.	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.	As set out in paragraph 11.5.192 of 5.4 Report to Inform Appropriate Assessment [APP-040], mitigation is proposed for black-tailed godwit (and other species) to address disturbance arising from unscheduled maintenance. It states that there will be screening of unscheduled maintenance works in the vicinity of Holland Haven Marshes SSSI (where this species occurs), in the same way as detailed for construction in paragraph 11.5.128 of 5.4 Report to Inform Appropriate Assessment [APP-40]. This is regardless of our conclusions on the conservation objectives for populations of this species that are in favourable condition, and whether mitigation is needed to maintain that condition.
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.	The Applicant assumes this reference should be APP-040, 11.5.343. As set out in 11.5.339 of 5.4 Report to Inform Appropriate Assessment [APP-040], only five observations of this species were recorded, with a peak count of four birds, within 400m of the Order Limits. Given these low numbers, our assessment is that there is no possibility for temporary habitat loss and disturbance, from the Project alone or cumulatively, to undermine the conservation objectives for these two SPAs/Ramsar, which each support greater than 10,000 Dunlin and are located 3km and 14km away, respectively.
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).	The management of the vegetation within the LBBG compensation site will aim to maintain vegetation communities and diversity; Natural England's input will be welcome. Existing trackways have been included in the Order Limits and will be used for access to the compensation site during construction and maintenance/ management, to minimise disturbance and further damage to affected shingle sediment and vegetation.

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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 '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'. 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.	The Applicant will clarify the approach to vegetation clearance in an updated 5.5.6 Lesser Black Backed Gull Implementation and Monitoring Plans [APP-052] submitted at Deadline 2.
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 "the Project could change the shingle morphology along the fence alignment [if excavated material is not returned to its original location]." 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.	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 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.	As set out in our response to J11, the shingle morphology (and therefore sediment structure) has been modified in the past (prior to the designation of the SAC) and is now largely flat with no prospect of recovering what may have been its original wave-formed ridge morphology. The vegetation now comprises mostly dense Sea Couch, although more open vegetation exists, mostly along the spoil from ditches which were apparently dug in the 1970s. Based on observations along other fence lines, the former is likely to quickly recover, and the second is not reliant on a natural sediment mix. No undisturbed vegetated shingle communities will be affected by the works. The limited construction equipment required will be brought to site by boat and existing concrete roads, included within the Order Limits, to reach the LBBG compensation site. The Annex I habitat has a broad definition and would not be lost; the quality of the habitat would not be diminished by the works except in the very short term. Mitigation measures will limit damage during construction and prevent it during maintenance, monitoring and management.

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J25	APP-225, Table 4.16 Natural England is unable to agree with the HRA conclusions for coastal lagoons at Orfordness-Shingle Street 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.	Natural England advises that the Applicant needs to fully consider all potential impacts to the coastal lagoons within the Orford Ness LBBG compensation site, over the lifetime of the project and the HRA should be updated accordingly.	As set out in our response to J13, the lagoons are seepage lagoons primarily recharged by seawater seeping under the large shingle ridge on the seaward (eastern side). The fence could not interfere with this process, or any other natural process supporting the lagoons. Since the impact pathway does not exist, there was no need to consider it in the HRA.
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.	Noted by the Applicant.
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.	Noted by the Applicant.
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	5.4.4. Summary of Designated Sites [APP-044] is part of 5.4 Report to Inform Appropriate Assessment [APP-040] and it would therefore be inappropriate to describe SSSIs.
J29	APP-261, Sec 2.2.1 Section 2.2.1 of the Outline Landfall Methodology states: 'The HDD alignments pass under the Holland Haven Marshes SSSI and the Frinton Golf Club. No surface works are planned in these areas, although nonintrusive survey / monitoring operations may be undertaken in these areas.' 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 frackout. 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 'Holland Haven Marshes SSSI may be a complex	We are content with the proposed outline landfall methodology and have no concerns regarding the 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 frack-out. We would welcome further risk assessment detailing the likelihood of a frack-out occurring specifically at Holland Haven Marshes SSSI and potential impacts with reference to the features that the SSSI is notified for.	The Applicant has provided a 9.21 Code of Construction Practice [APP-253] which includes consideration for the potential release of drilling fluids as a result of frac-out within section 3.16. This includes that further ground investigation will be undertaken prior to construction to inform drilling parameters, such as drilling pressures which will reduce the risk of frac-out occurring. During HDD activity, drilling fluid properties will be actively monitored (i.e. mud weight, viscosity, gel strength, volume and pressure) in order to detect early and minimise the potential for frac-out. The contractor will also be required to detail frac-out contingency measures and response equipment within the associated Risk Assessments and Method Statement method statement for the activities.

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	location to achieve the ideal safe drilling through impermeable geology and this will need careful consideration.' We advise that any comments made by the EA in relation to HDD at this location should be given due consideration.		
J30	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.	The Applicant notes that Natural England is in agreement that no protected species licences are required based on information to date. The Applicant confirms that pre-construction surveys for protected species and any appropriate mitigation (including licensing if appropriate) is committed to through the OLEMP. Within 9.22 Outline Landscape Ecological Management Plan - Revision B [AS-006], Table 7-1 provides further details of the pre-commencement/pre-construction surveys proposed, including details of proposed survey areas, timings and methodologies. All surveys will be undertaken by suitably experienced/ licensed ecologists who are members of an appropriate professional body, e.g. CIEEM. The results of the pre-commencement/ pre-construction surveys will be used to identify whether any changes to the mitigation measures are required and the Final Landscape and Ecological Management Plan will be updated to reflect the survey results, as required. Within 9.22 Outline Landscape Ecological Management Plan - Revision B [AS-006] sections 7.4, 7.8, 7.9, 7.10, 7.11, 7.12 address the potential future licensing requirements (dependent on results of pre-construction surveys and final design) for GCN, bats, badger, otter, water vole and dormouse respectively.
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.	Section 4.7.1 of 6.3.4 Onshore Biodiversity and Nature Conservation [APP-086] confirms that no significant limitations were associated with the surveys. The Applicant confirms that pre-construction surveys for protected species and any appropriate mitigation (including licensing if appropriate) is secured through the OLEMP as set out in the response to J30. Pre-construction surveys will be undertaken at all relevant areas within the Order Limits prior to construction. Survey

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			of buffer areas outside of the Order Limits will be also undertaken where possible, access permitting.
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 Ecological Impact Assessment in the UK and Ireland: "*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*."	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.	Please see response to J2.
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.	Please see response to J1.
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.	For clarity, 6.6.4.21 Protected Species Report and figures (Confidential) [APP-152], including Table 3-1, is complete and is not lacking data: all recorded evidence of badger has been presented. Chapter 4 of 6.6.4.21 Protected Species Report and figures (Confidential) [APP-152], specifically addresses the fact that whilst no main setts were recorded, the presence of associated setts indicates main setts are likely to occur outside the survey area, within relatively close proximity. The Applicant confirms that pre-construction surveys for protected species including badger and any appropriate mitigation (including licensing if appropriate) is secured through the 9.22 OLEMP [AS-006], as set out in the response at J1 and J30.
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	The Applicant considers that bat survey data gathered to inform the impact assessment process will be invalid at the point of construction in respect of potential roost locations, and any specific mitigation required.

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	We advise that there is a risk of tree roosts within exclusion areas being subject to disturbance by works.	be present. And that pre-construction surveys are secured and implemented.	Therefore, the Applicant confirms that pre-construction surveys for bats and any appropriate mitigation (including licensing if appropriate) is secured through the OLEMP as set out in the response at J1 and J30. With reference to bats specifically, the section which details bat mitigation is 7.8.9 – 7.8.12 within 9.22 Outline Landscape Ecological Management Plan Revision B [APP-254]. On the basis of the above, no further mitigation measures are proposed.
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.	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. 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. Natural England advises that unless there are significant changes in design parameters will not be providing further comment on GCN during examination.	Noted by the Applicant.
J37	APP-149 Biodiversity Net Gain (BNG) Indicative Design Stage Report 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 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). 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	Natural England advises that the BNG committed is secured in the DCO.	The Applicant is in agreement with Natural England in this respect. As set out in Section 1.2.2 of] 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149], to account for potential changes to the detailed scheme design and in order deliver 10% BNG as the Applicant has committed to for this Project, with the expectation of BNG statutory requirements for NSIPs (anticipated in November in 2025), the Metric will be re-run post-DCO consent, and the BNG Final Design Report shall be prepared including any required statutory documents. It is envisaged that this would be the subject of a DCO Requirement, and that the Project will seek a minimum of 10% BNG. The Applicant recognises that the applied method of the BNG metric, to an NSIP project, is a reasonable worst case assessment

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	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.		as outlined in Document 6.6.4.18 Five Estuaries Offshore Wind Farm Biodiversity Net Gain Indicative Design Stage Report [APP-149] please see section on "4.1.2 Cable Corridor" and "4.1.3 OnSS" as to how the metric has been applied the project footprint which would realistically be implemented at construction.
J38	APP-149 Defining 'On-Site' and 'Off-Site' 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 the approach used for TCPA development. 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.	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 metric inputs should accurately reflect the built development.	The Applicant notes that Natural England agrees the approach taken to determining "On-Site" and "Off-Site" is acceptable. This assumption would therefore be used for post-DCO future iterations of the Metric (or its successor). The Applicant is fully committed to delivering Biodiversity Net Gain and confirms alignment with the ten good practice principles developed by CIEEM, IEMA and CIRIA as set out in Section 2.2 of 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149]. Section 2.2 also sets out that VE has/ will use the Statutory Metric (or its successor) to demonstrate measurable Net Gain contribution. For clarity, it is worth highlighting that separate Rules and Principles are included in the Metric (and relate only to the Metric, not to BNG). The Metric Rules and Principles have also been followed.
J39	APP-149 Mitigation and Compensation 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.	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)	The Applicant confirms that no mitigation or compensation for protected species or designated sites has been included in the Metric calculations presented in 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149], as set out in Section 4.1.1 of the report. Reporting for post-DCO iteration(s) of the Metric calculation will include detail in respect of what land is being used for mitigation or compensation for protected species (or other statutory requirements), if required, and what is assigned for BNG Metric uplift alone.
J40	APP-149, Sec 2.2.4 Defining Strategic Significance Guidance on assigning strategic significance was updated with the introduction of mandatory BNG in February 2024 (see Statutory Metric User Guide, pg.26).	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 and will be subject to public consultation before they are published.	The Applicant confirms that Natural England's advice in this respect will be followed. This is made clear in Section 2.2.4 of 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149] which states that as part of the post-DCO update of the BNG Metric calculations, the approach to defining strategic significance will be

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		Once available, they could help ensure that any offsite habitat creation aligns with strategic nature priorities in the wider area.	reviewed in line with latest good practice and published guidance and, in particular, will be updated in the event that an LNRS has been published (in draft or final form) prior to this update taking place.
J41	APP-149, Sec 3.2.1 Consideration of Metric Principles and Rules 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).	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.	Noted by the Applicant.
J42	APP-149, Sec 4.1.1 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. We are awaiting clarity around the policy approach for any land that is temporarily acquired for Nationally 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. With regards to cropland and agricultural grassland, we note the points raised and advise that the correct risk multiplier is applied within BNG calculations. 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.	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. We also advise that for cropland and agricultural grassland, that the correct risk multiplier should be applied to BNG calculations, in line with the Statutory Biodiversity Metric User Guide (e.g. pg 34, 'Accounting for temporary losses'). 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. 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.	The Applicant notes that Natural England agrees the approach taken to reinstated hedgerows in Section 4.1.1 of 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149] is acceptable. The Applicant disagrees that reinstated hedgerows that are not subject to a 30 year management plan should be regarded as lost; the rationale for this stance is provided at Section 4.1.4 of 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149]. The Applicant confirms that the correct risk multiplier has been used in respect of cropland and agricultural grassland, as set out in Section 4.1.1 of 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149], noting that for all cropland categories (including grass and clover leys) no condition assessment applies under the term of the Metric. Natural England's point in respect of watercourses is noted; the results presented in 6.6.4.18 Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Indicative Design Stage Report [APP-149] remain valid and are based on the assumption that all watercourses identified during the habitat survey would be crossed by trenchless techniques and/ or that they would be unaffected as set out in Section 4.1.1.

Table 2.12 Applicant's response to Natural England Appendix K – Landscape and Visual Impact Assessment

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
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.	Potential in-combination / cumulative effects between VE, North Falls and Norwich - Tilbury substations have been considered and assessed as far as possible with the information available for the Norwich – Tilbury substation. Further assessment can be considered should more information be made available during the examination. The proposed mitigation planting for the OnSS, in 6.7.2.2, Figure 2.12 [APP-192], has been designed with consideration of the potential visibility of the Norwich – Tilbury substation to the immediate west of the VE substation and refinements to the mitigation planting will be considered once the details of the Norwich – Tilbury substation are made available.
K2	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.	N/A	This is noted by the Applicant
K3	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 ow, there is currently insufficient evidence regarding the Norwich – Tilbury substation design to be able to rule out in-combination effects across all three projects.	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.	Potential in-combination / cumulative effects between VE, North Falls and Norwich - Tilbury Projects have been considered and assessed as far as possible with the information available. This includes the potential in-combination / cumulative effects on the Dedham Vale National Landscape. Should more detailed information on the Norwich – Tilbury Overhead Power Line (OHPL) and substation be made available during the examination, further assessment could be considered, although NE agree it would be unlikely that significant effects would arise in respect of the Dedham Vale National Landscape. The proposed mitigation planting for the OnSS, in 6.7.2.2, Figure 2.12 [APP-192], has been designed with consideration of the potential visibility of the Norwich – Tilbury Project and refinements to the mitigation planting will be considered

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
			once the details of the Norwich – Tilbury OHPL and substation are made available. It should be noted that the very limited visibility of the VE Project from the Dedham Vale National Landscape limits its potential to contribute to in-combination / cumulative effects, regardless of the extent to which the Norwich – Tilbury Project and North Falls Project are visible. In K6 NE agree that significant effects on the Dedham Vale National Landscape are unlikely to arise both in respect of the VE onshore substation as a standalone project and in combination with North Falls.
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	This is noted by the Applicant.
K5	P113 VP11 Annex 2.2.16: Figure 2.26a -c VP11 Bounds Farm Hungerdown Lane 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 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.	Natural England advise that the Applicant considers additional mitigation measures which may address the winter visibility whilst mitigation screening is established.	Additional mitigation measures in respect of winter visibility, will not be required as there will be no visibility of the onshore substation from Viewpoint 11 Bounds Farm, Hungerdown Lane in winter at year 0 before mitigation planting is established, owing to the following reasons. 6.7.2.2.16 LVIA Visualisations [APP-196] Figure 2.26a illustrates the extent of existing screening provided by the existing shelterbelts to the south and east of the field in the foreground of the view. While the existing shelterbelts comprise trees that are deciduous, the approximate 15m width of the eastern belt and 20m width of the southern belt, will ensure that an effective screen is maintained even in the winter months.

Ref	Relevant Representation Comment	Natural England's Recommendation to Resolve Issue's	Applicant's Response
			Moreover, 6.7.2.2.16 LVIA Visualisations [APP-196], Figure 2.26b shows how the VE onshore substation sits partly below the horizon line owing to the fall in ground level between Viewpoint 11 and the site. This would mean that even without any existing shelterbelts, the lower half of the substation would be screened by landform leaving only the upper part visible. The low-lying location of the substation relative to this view and the thicker density of existing vegetation at ground level will mean the substation will remain screened even in winter months when vegetation is typically without leaf.
K6	Sec 2.6 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. Therefore, Natural England will not provide further comment on NLs during the examination.	N/A	Noted by the Applicant.

3 APPENDIX A

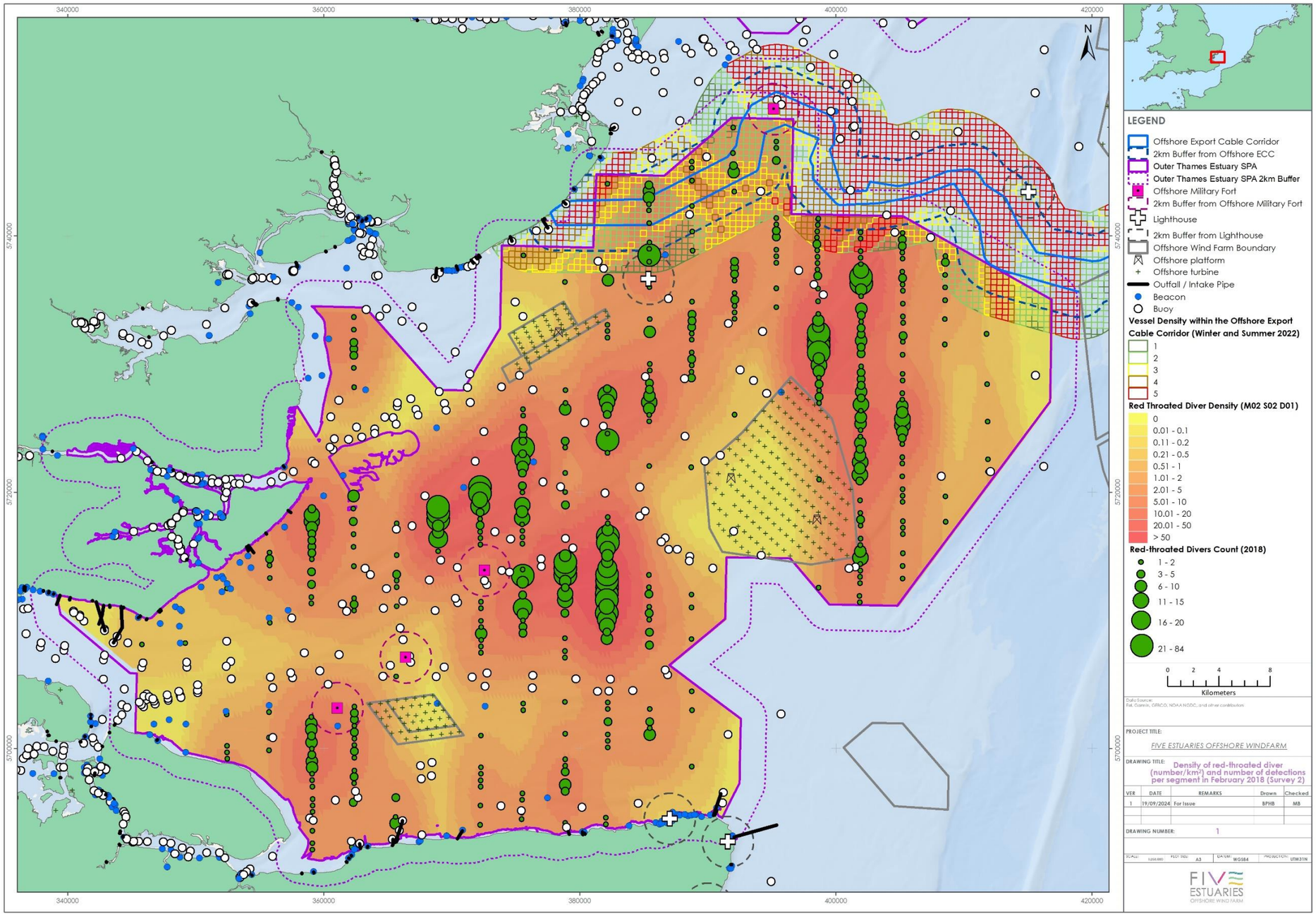

Figure 3.1 Density of Red-Throated Diver and number of detections per segment in February 2018 (Survey 2).

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