# Vattenfall Wind Power Ltd

# Thanet Extension Offshore Wind Farm

## Appendix 10 to Deadline 2 Submission: Applicant's Comments on Responses to the Examining Authority's First Written Questions – EXQ1

Relevant Examination Deadline: 2

Submitted by Vattenfall Wind Power Ltd

Date: February 2019

Revision A

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| Drafted By: | Vattenfall Wind Power Ltd |
| Approved By: | Daniel Bates |
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| Revision A | Original Document submitted to the Examining Authority |
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| N/A | |
| N/A | |

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# Annexes referred to

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| Annex A | ExQ1.3.5 Crown Land and Consent |
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| Annex E | MGN543 checklist |

# 1 Applicant's responses to the First Written Questions

1 Following the issue of First Written Questions by the Examining Authority (ExA) outlined in the Rule 8 Letter of 18th December 2018 to the Applicant and other Interested Parties, the Applicant has made comments on the Interested Parties responses to the questions. Details of the Applicant's responses are set out within this document in subsequent sections below.

2 The document sets out answers in a tabulated format as requested by the ExA, with overarching 'sections' and tables for each topic area identified by the ExA in advance of D1. As noted within the ExA Questions (ExQs) a number of topic areas did not have specific questions at the time. For ease of reference the following topic areas remain without sections in this document:

| ExQ Section | ExQ Topic area |
|---|---|
| 1.2 | Construction |
| 1.4 | DCO |
| 1.8 | ES General |
| 1.9 | Fishing and Fisheries |
| 1.10 | Historic Environment |
| 1.13 | Public Health |
| 1.14 | Other strategic projects |
| 1.15 | Socioeconomic effects |

## 2 ExQ1.1 Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA))

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| 1.1.1 | The Applicant | Biodiversity: Cable Landfall Location Chapter 4 of Volume 1 of the Environmental Statement [APP-040] describes the process of identifying the preferred cable landfall location. Areas of search encompassed routes within Joss Bay, Pegwell Bay and Sandwich Flats North / Bay as shown on Figure 4.5 of [APP-040].<br><br>a) With reference to Chapter 4, can the Applicant provide further detail to support and explain its decision to screen out the Joss Bay and Sandwich Flats North/Bay locations for cable landfall, with particular reference to the comparative effects on designated nature conservation sites and inter-tidal habitats?<br>b) Could the applicant please explain in full what ecological surveys were undertaken to inform its choice of landfall option (as described at paragraphs 4.9.24 – 4.9.37 of [APP- | A) For the most northerly of the options considered by the Applicant prior to scoping, Joss Bay, it is of note that any subtidal cable burial approaching landfall (and then onward in Indicative Route 1 or 2 as illustrated in Figure 4.5 of the Site Selection and Alternatives Chapter (PINS Ref APP-040/ Application Ref 6.1.4)) would need to cross both the Thanet Coast Marine Conservation Zone (MCZ) and the Thanet Coast Special Area of Conservation (SAC).). These sites are both illustrated in Figure 4.9 of the Site Selection and Alternatives Chapter (PINS Ref APP-040/ Application Ref 6.1.4). Whilst not illustrated within the above referenced chapter it is also worthy of note that Natural England within their responses to scoping and Section 42 (see table 5.5 of the benthic subtidal and intertidal ecology chapter (PINS Ref APP-046/ Application Ref 6.2.5) note that chalk reef is present within the region, and in particular within the designated sites. This is also noted by Kent Wildlife Trust (KWT) in their responses to S42 consultation. In particular KWT note that "Once the removal of a subtidal chalk habitat has taken place, there is no option for the recovery of this habitat; it will be lost in perpetuity, and therefore the conservation objectives of the site would not be met". KWT further note that the cable routing should avoid Thanet Coast MCZ to avoid | No other Interested Parties provided a response to this ExQ. | The Applicant therefore has no further comment to make. |

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| | | 040]?<br>c) Could the applicant please respond to the representation of Kent Wildlife Trust [RR-048] that alternative routes with less of an impact on designated areas have not been adequately assessed? | these potential impacts. Despite the section of the MCZ that overlaps with the proposed Order Limits being actively dredged for Ramsgate Harbour the Applicant subsequently introduced the cable exclusion zone to avoid potential impacts on the chalk features of the MCZ. To aid in contextualising the locations of the chalk and subtidal rock reefs Annex A "Joss Bay Regional context for ExA" to this response illustrates the extent of the potential chalk and bedrock reef features within the MCZ as presented within the MAGiC web resource[1]. A further Figure "Joss Bay for ExA" also at Annex A shows Joss Bay at a higher level of resolution to further illustrate the potential comparative effects on the designated nature conservation sites and subtidal/intertidal features present.<br>Therefore, as set out above, Joss Bay was removed due to the high likelihood of significant, irreversible effects on chalk reef. This approach is supported by subsequent consultation responses regarding the MCZ from KWT and NE.<br><br>Further to the South, Sandwich Flats (Indicative Route 5 as illustrated in Figure 4.5 of the Site Selection and Alternatives Chapter (PINS Ref APP- | | |

[1] The MAGIC website provides authoritative geographic information about the natural environment from across government. Natural England manages the service under the direction of a Steering Group who represent the MAGIC partnership organisations.

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| | | | 040/ Application Ref 6.1.4))) is characterised by similar levels of designated sites, of a similar nature, to the more southerly 'option 2' landfall that was brought forward at scoping and subsequently dropped prior to publication of PEIR. In this regard Figure 4.10 of the Site Selection and Alternatives Chapter (PINS Ref APP-040/ Application Ref 6.1.4) illustrates the priority habitats present along the coast of Sandwich. To provide greater clarity to the Examining Authority a figure of greater resolution is presented in "Sandwich Flats – higher resolution for ExA" at Annex A of this response, with 'Sandwich Flats' identified in the underlying Ordnance Survey. As noted in section 4.8 of the Site Selection and Alternatives Chapter (PINS Ref APP-040/ Application Ref 6.1.4), in particular from paragraph 4.8.13 onwards t is clear to see that any route through this area would be required to cross not only intertidal mud habitat as a supporting habitat of the SPA, but Priority intertidal mud habitat. It would then be required to cross the designated coastal sand dune habitat (designated as part of the Sandwich Coast SAC and representing a Priority Habitat) before then crossing areas of Priority Habitat Lowland Fens, Priority Habitat deciduous woodland before then crossing the River Stour which is characterised in the provided map by the Priority Habitats (and SPA supporting habitats) of coastal saltmarsh and intertidal mudflats. As noted in | | |

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| | | | Section 4.8 (Table 4.6) of the Site Selection and Alternatives Chapter (PINS Ref APP-040/ Application Ref 6.1.4) a landfall at Sandwich Flats North and the crossing of the River Stour would both require HDD options to be included, with the associated entry/exit pit infrastructure and temporary road ways to reach the works areas. Furthermore, the landfall would require a contingency measure for trenching to be retained due to the uncertainty of the underlying geology and risks to successful HDD. Therefore, as set out above, Sandwich Bay was removed due to the risk of long term negative impacts on a number of designated and priority habitats. It is worthy of note that landfall Option 2, which represented a concern for Natural England with regards comparative negative impacts has been removed from the proposed project design envelope.<br><br>B) In parallel with the landfall decision making process surveys were being undertaken across both 'northern' and 'southern' option areas. The surveys were twofold, initial 'scoping surveys' which record initial habitat appraisal, prior to secondary more detailed surveys and overwintering/breeding bird ornithological surveys. Initial scoping surveys were completed across both option areas, secondary surveys (with the exception of the overwintering/breeding bird surveys) were only carried across the | | |

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| | | | northern Zone of Influence.<br>The overwintering bird surveys were completed and are reported within Annex 6.5.5.4 (PINS Ref APP-100) of the Environmental Statement (Onshore and Intertidal Ornithology Report), see reference 2.2.1 *et seq* of that report, and more specifically at Appendix 5-4D of that report.<br>The initial scoping surveys were not presented as these had not been reported prior to the decision being made on landfall choice, and were not presented in the final annexes to the biodiversity chapter (Annexes 5.1 to 5.15 of that chapter (PINS Ref APP-095 to APP-111) as they are not of relevance to the predicted Zone of Influence of the proposed project.<br>The decision process at this stage was therefore based primarily on a comparison of high level constraints and understanding of the designated sites and features which are sufficiently significant as to be able to influence a major infrastructure project. The level of granularity of the scoping site surveys, and the data resulting from them would only be used for amendments to an already selected alignment, for fine tuning, and would not be considered driving factors in establishing the relative merits of one "large scale" option over another as was the case here, and in many other similar options studies, including those carried out in the immediate vicinity for the Richborough project.<br><br>C) It is the Applicants position that the evidence presented within the Site | | |

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| | | | Selection and Alternatives Chapter (PINS Ref APP-040/ Application Ref 6.1.4) demonstrates clearly at Table 4.9 which summarises paragraphs 4.9.24 *et seq* that alternative routes would not result in lesser impacts on designated areas. The consideration of alternatives is well referenced within the ES chapter and in the opinion of the Applicant a proportionate approach has been taken in considering the merits of a number of routes, viable options amongst which have been brought forward for consultation at key stages. This is clearly evidenced by the scoping process having brought forward two options for consideration, followed by design optionality being brought forward for consultation during the formal S42 consultation process; at this latter S42 stage specific options requested by KWT were brought forward for wider consultation. As has been further demonstrated within this response and at paragraphs4.8.13 *et seq* and Table 4.6 of the Site Selection chapter (APP-040), landfalls to the North (Joss Bay) would have a greater potential for permanent damage to internationally designated habitat, landfalls to the South would also potentially cause permanent damage to international designated features (Sandwich Bay SAC). This is clearly illustrated through reference to the figures presented at Annex A to this submission in addition to the figures and narrative presented within the chapter (APP-040). The option at | | |

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| | | | Pegwell Bay represents a number of options amongst which there was the potential for permanent loss of a SSSI feature (saltmarsh). As also noted within the chapter and summarised at Tables 4.6 and 4.9 of the chapter it is important to note that whilst ecological/conservation designations are an important facet within the consideration of alternatives they form one facet of a number of other important considerations which are presented within the chapter that should also be given due weight and consideration. On balance the Applicant considered that of the initial three search areas (Joss Bay. Pegwell Bay, and Sandwich Bay) and then the subsequent two search areas (Pegwell Bay and Sandwich Bay) other options were considered to have greater potential impacts than Pegwell Bay. | | |
| 1.1.2 | The Applicant and Natural England | Habitats Regulations Assessment: Project Design Parameters<br>Natural England's relevant representation [RR-053] has highlighted some inconsistencies between maximum project design parameters contained within the ES project description, DCO and DMLs.<br><br>The ExA requests that this point is addressed specifically as follows: | A. Annex A, of the Applicants' Response to Relevant Representations (Appendix 1 of the Deadline 1 submission) presents the maximum design parameters of Volume 2, Chapter 1: Project description (Offshore) (PINS Ref APP-042/ Application Ref 6.2.1). This document presents the maximum design parameters in a tabular format, including those in Tables 1.4 to 1.35 of PINS Ref APP-042/ Application Ref 6.2.1.<br><br>Annex B, of the Applicants' Response to Relevant Representations (Appendix 1 of the Deadline 1 submission) presents an audit of how | Natural England's response:<br>"Natural England will await a summary table from the applicant and then re-examine and cross check the figures again. According to table 12 within the Natural England technical topics SoCG, the applicant is drafting a clarification note with all the maximum project design parameters being assessed." | Applicant's response to Natural England:<br>The Applicant notes Natural England's response and considers the answer provided at D1 to sufficiently address their response. |

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| | | a) Summarise in tabular form all of the worst case scenario assumptions as set out in tables 1.4 – 1.35 of [APP-042] and table 5.2 of [APP- 031]. Please cross-check the figures included with those presented within the DCO/DMLs.<br>b) The forthcoming statement of common ground between these parties should clearly state any areas where disagreement remains as to any of the presented figures. | the design parameters have been transcribed from PINS Ref APP-042/ Application Ref 6.2.1 into the Application documents, including the Report to Inform Appropriate Assessment (PINS Ref APP-031/ Application Ref 5.2). Annex B also presents a cross-check of the design parameters transcribed into the DCO/dML. Where transcription errors have occurred this is presented and considered in both a tabular and written format.<br><br>B. Annexes A and B of Appendix 1, as presented in the response to 1.1.2.a, have been drafted as part of the Applicants' Response to Relevant Representations of the Deadline 1 submission. The intention of these appendices is to provide clarity and to reach an agreement in the Statements of Common Ground (SoCG) on the design parameters assessed in the Application. The consideration of transcription of the project description within the Application has been included in the SoCG with Natural England, as a matter under discussion, as part of the Applicant's Deadline 1 submission. | | |
| 1.1.3. | The Applicant and Natural England | Habitats Regulations Assessment: Sweetman II Compliance Section 6 and table 6.1 of [APP-031] set out 'embedded mitigation' in relation to pollution prevention for subtidal and benthic intertidal habitats, marine mammals and | The Applicant notes that the approach taken to accidental pollution (pollution prevention) within the Report to Inform Appropriate Assessment (RIAA) as submitted in June 2018 with the application (PINS Ref APP-031/ Application Ref 5.2) was considered appropriate complied with the understanding of Sweetman II at that time, however The Applicant understands that since then, implications of interpretation of | Natural England's response:<br><br>a) It is Natural England's opinion that if having agreement with the PEMP is required to reach a conclusion of no likely significant effect from pollution from the landfill in Pegwell Bay and therefore to comply with the People Over Wind Ruling, we advise that this forms part of the mitigation and should be carried through to appropriate assessment.<br><br>c) European sites and qualifying features for which these concerns exist: | The Applicant thanks Natural England for their advice on this matter. As stated in the Applicant's response to this question, the updated |

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| | | onshore biodiversity which appears to be controlled by the Project Environmental Management Plan (PEMP) and Code of Construction Practice (CoCP) and potentially relied upon to rule out likely significant effects (LSE) on European Sites and their qualifying features screened into the assessment.<br><br>a) With respect to section 7.5 of [APP-031], and having regard to the Sweetman II judgement, please could Natural England comment on the Applicant's approach in this regard?<br>b) Can the Applicant please confirm their position that conclusions of no LSE have been reached without reliance on avoidance or reduction measures?<br>Natural England has stated section 5.9.1 of [RR-053] that it does not agree with the conclusions at paragraphs 7.5.9 of [APP-031] that no LSE can be concluded in terms of accidental pollution. The | the Sweetman II ruling has developed since then and evolved. The Applicant is preparing a revised and updated RIAA, which will be submitted at Deadline II, which includes amendments in further response to the evolving understanding Sweetman II judgment. These amendments include ruling accidental pollution in for Likely Significant Effect (LSE) for appropriate sites/features. These sites/features were identified within the original Screening Report issued in September 2017 (PINS Ref APP-032/ Application Ref 5.2.1), as accidental pollution at that point had remained screened in for LSE. As such, the Applicant would respond as follows:<br><br>A. Section 7.5 of the RIAA (Section 7.5 of PINS Ref APP-031/ Application Ref 5.2) refers to confirmation of screening. The RIAA submitted with the application in June 2018 was considered appropriate compliant with the interpretation of the Sweetman II ruling at that time.<br><br>B. b) The Applicant can confirm that the revised RIAA, to be submitted at Deadline II, will be amended to screen accidental pollution in for Likely Significant Effect (LSE) for all relevant receptors and taken forward for consideration of adverse effect alone and in-combination. The Applicant does not consider that considering these measures after being screened in will can confirm that the embedded mitigation results in a conclusion of no adverse effect on integrity in any all cases.<br><br>C. The Screening Report issued in | i. Thanet Ramsar features of concern: Turnstone – roosts on the saltmarsh and feeds on the mudflats.<br><br>ii. The wetland invertebrate assemblage – Natural England understand that this not particularly helpful just naming the assemblage, feedback we also received from the applicant. Therefore, we have provided some advice that was presented to the applicant describing the likely invertebrates of conservation concern (see iii).<br><br>iii. 6 Nationally Scarce (NS) species, 2 provisional NS species and 2 section 41 species. From best available evidence / records that Natural England hold on S41 species in Pegwell Bay we know that the upper saltmarsh transition zone, if it has any stands of restharrow may well the support the moth*, Aplasta ononaria.* There is also the section 41 species *Colletes halophilus*, a type of bee. These S41 species, in addition to having their own value stand as a proxy for good supporting habitat, alongside the assertion that the site represents excellent saltmarsh habitat in good condition.<br><br>iv. Thanet SPA Features of Concern: Golden plover and turnstone, roost on saltmarsh and feed on mudflat. The little tern is not currently breeding in the site and historically the bay is not a key breeding site.<br><br>v. These concerns do not relate to the assessment of in-combination effects.<br><br>f) Natural England have no further comments to make on this point. | RIAA being submitted at Deadline II has carried accidental pollution through to the adverse effect on integrity assessment stage to enable an appropriate assessment to be carried out by the competent authority. The updated RIAA has also been updated following the advice received from Natural England on the Ramsar species and the specific species mentioned in the assemblage. The RIAA includes a full assessment of the impacts on golden plover and turnstone and the impact of Thanet Extension on |

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| | | Applicant's position as noted above also appears to contradict the evidence in table 1 of Appendix I to the HRA screening report [APP-032], in which the applicant states (in respect of accidental pollution) that "…a Code of Construction Practice (CoCP) which will set out measures to follow, published guidelines and best working practice for the prevention of pollution events…it is acknowledged that until these measures have been agreed, it is not possible to conclude no LSE."<br><br>c) Can Natural England confirm the European Sites and qualifying features for which these concerns exist, and whether these concerns also relate to the assessment of in-combination effects.<br>d) Can the Applicant please clarify the apparent contradiction noted above.<br><br>Table 1 of Appendix I to the screening report [APP-032] (Updated Screening following ECJ | September 2017 (PINS Ref APP-032/ Application Ref 5.2.1) included consideration of accidental pollution. At that time, in the absence of draft versions of the embedded mitigation, accidental pollution was screened in for LSE for all receptors associated with sites in close proximity to the works (in consultation with Natural England. Following production of the CoCP during drafting of the PEIR and ES accidental pollution was screened out on the understanding of the Sweetman II ruling at that time. In line with Natural England's concerns and in light of the revised understanding of the Sweetman II ruling, accidental pollution has been re-screened in for LSE for all relevant sites in the revised RIAA), with that information informing the sites/features screened in for LSE as regards accidental pollution within the revised RIAA to be issued at Deadline II. Consideration of accidental pollution impacts has been made for these sites and features alone and in-combination within the revised RIAA.<br><br>D. The Applicant can confirm that accidental pollution has now been screened in for LSE alone and in-combination for relevant sites and features (as noted in (c) above) and assessed as appropriate within the revised RIAA, for issue at Deadline Specifically, accidental pollution has been assessed for the following sites for all phases of the development: Thanet Coast SAC; Sandwich Bay | | these species. |

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| | | Ruling (Sweetman II)) provides limited detail with regard to consideration of in-combination effects in the screening assessment. Section 9 of [APP-032] describes the approach to the assessment of in-combination effects, concluding that "A full assessment of in-combination effects will be undertaken as part of the RIAA and therefore is not presented in this Report". The ExA is seeking to clarify whether the potential for in-combination effects could exist in these circumstances.<br><br>e) Can the Applicant please explain how in-combination effects have been assessed at the screening stage, particularly for those sites and features for which no LSE has been concluded at the screening stage?<br>f) Does Natural England have any comments to make on this point? | SAC; Thanet Coast and Sandwich Bay SPA; and Thanet Coast and Sandwich Bay Ramsar. There is therefore no outstanding contradiction.<br><br>E. Section 9 of the Screening Report issued in September 2017 (PINS Ref APP-032/ Application Ref 5.2.1) summarised the criteria to be applied when identifying projects for consideration in-combination. Section 8 of the RIAA (PINS Ref APP-031/ Application Ref 5.2) provides further detail to the approach taken to screening in-combination, together with the plans and projects identified per receptor. These plans and projects were identified based on a coarse screening tool, namely distance between Thanet Extension and the designated sites considered for LSE alone, that distance being the maximum screening range relevant to the associated features. Section 12 of the RIAA (PINS Ref APP-031/ Application Ref 5.2) then further considered the plans and projects identified within Section 8, through consideration of:<br><br>• Level of detail available for project/ plans (to help inform the tiering);<br>• Potential for an effect-pathway-receptor link (where no link exists between effect and receptor, no LSE can be concluded, e.g. as informed by the receptor specific screening range and the location/sensitivity of receptors within a designated site);<br>• Potential for a physical | | |

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| | | | interaction (required for consideration of LSE); and<br>• Potential for temporal interaction (required for consideration of LSE).<br><br>Section 12 of the RIAA (PINS Ref APP-031/ Application Ref 5.2) applied the above criteria to further refine the list of plans/projects identified in Section 8 of the RIAA (PINS Ref APP-031/ Application Ref 5.2), resulting in a list of plans/projects relevant to be considered through the in-combination assessment with Thanet Extension for individual sites/features.<br>The overall aim was to 'determine the plans or projects that may affect the designated sites considered for potential LSE for the project alone' (paragraph 8.1.8 of PINS Ref APP-031/ Application Ref 5.2). Therefore even if the site/feature had been screened out from LSE for the project alone, these sites/features were still considered through screening in-combination. It is the Applicant's position that there is therefore no potential for in-combination effects to exist in these circumstances. The exception to this is marine mammals, as noted in paragraph 8.3.1 of the RIAA (PINS Ref APP-031/ Application Ref 5.2). That exception is based on the distance to all other relevant designated sites from the Thanet Extension boundary, which is such that it removes the risk of an in-combination effect (being 145km, the maximum screening distance applied for marine | | |

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| | | | mammals).<br>F. For Natural England to comment. | | |
| 1.1.4. | The Applicant | Habitats Regulations Assessment: Methodology<br>Section 7.3.2 of the applicant's Report to Inform Appropriate Assessment [APP-031] describes the definition of the study area for sub-tidal and intertidal benthic habitats including consideration of "Designated sites within the maximum range of relevant effect (being up to 14 km from the project boundary)". However, paragraph 5.4.2 of the Benthic Subtidal and Intertidal Ecology chapter of the ES [APP-046] describes an assessment study area of only a 12km buffer from the proposed development site boundary. Paragraph 7.5.11 of [APP-031] also explains "a range of up to 14 km is noted, subsequently amended to 13km in the ES physical processes chapter".<br><br>a) Can the Applicant explain these apparent divergences in the study areas?<br>b) Please clarify the | A. The ExA is correct in that there are different ranges applied with respect to benthic ecology. The 14km figure applied to screening in the RIAA, as noted in the RIAA issued in June 2018 (Paragraph 7.5.10 of PINS Ref APP-031/ Application Ref 5.2), was derived from the physical processes PEIR chapter (issued in November 2017, paragraph 2.10.26 of Volume 2, Chapter 2, Marine Geology, Oceanography and Physical Processes), which provides ~13km as being the spring tidal range for the sediment plume resulting from disturbance during construction predicted at that time – 14km was taken on a precautionary basis in the anticipation of the PEIR being refined through to the ES. That 14km distance was applied during screening of sites where benthic habitats were a designated feature, as a worst case scenario of effect.<br>It is noted that the distance was provided in the physical process chapter for the ES, remaining as ~13km (also presented in paragraph 2.10.26 of Volume 2, Chapter 2, Marine Geology, Oceanography and Physical Processes, PINS Ref APP-043/ Application Ref 6.2.2), although the greater 14km range was retained for screening in the RIAA (PINS Ref APP-031/ Application Ref 5.2) as a precaution (although in practice, the different ranges would not make any difference to the sites/features screened in for assessment given their location relative to Thanet | No comment was provided by IPs | No comment is required from the Applicant |

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| | | bases on which the defined 12/13/14km study areas were derived.<br>c) In terms of adopting a consistent study area, is it appropriate to conclude that a 12km buffer is the extent that has been fully assessed. | Extension).<br>B. As regards the 12km range applied in the benthic ecology chapter of the ES (paragraph 5.4.2 of PINS Ref APP-046/ Application Ref 6.2.5), that range was derived from the draft physical processes modelling produced during the drafting of the ES. A 1km difference in range (12km to 13km) would make no difference to the benthic ecology chapter of the ES, since all habitat types that would occur within that range are assessed within the benthic ecology chapter.<br>C. Within the RIAA, the study area that has been assessed is 14 km. This remains the case even when considering the 12km distance assessed in the ES as there would've been no additional habitats assessed with a 14 km study area. Furthermore, a 14 km study area in the ES would have resulted in a small reduction in the magnitude of the impacts from the project as the volumes of sediment displaced would remain the same but spread over a wider area and the associated depth of sediment deposition being less when considered over the whole area. In the same vein, there would also be a reduction in the percentage of habitats temporarily lost/ disturbed by the works at Thanet Extension with a larger study area for the ES which would equates to a potential reduction in the magnitude of the impact. There would be no difference in sites screened in within the RIAA (PINS Ref APP-031/ Application Ref 5.2) regardless of the 12/13/14km screening range – the | | |

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| | | | difference is too small to make a material difference to the designated sites screened in/out of assessment. With regards the ES, the assessment has considered all relevant habitats in any case such that a slight difference in range at the limit of effect has no material effect on the conclusions. Therefore the assessments (both in the ES (PINS Ref APP-046/ Application Ref 6.2.5) and RIAA (PINS Ref APP-031/ Application Ref 5.2)) address the potential for effect on all relevant benthic habitats and that the potential for impact has been fully assessed in both cases. | | |
| 1.1.5. | Natural England | Habitats Regulations Assessment: Methodology<br>Does Natural England have any observations on ExQ1.1.4 above and the extent of the study area? | The Applicant would refer the ExA to the Applicant's response to 1.1.4, which is clear that the difference in ranges reflects the evolution of the project (and the understanding of the processes) over time. The range applied in the RIAA (PINS Ref APP-031/ Application Ref 5.2) is effectively very precautionary, with the ES reflecting more refined modelling results. In practice, amending either value would have no material difference on the conclusions, as all relevant habitats, sites and features have been assessed regardless of the range (12km, 13km or 14km) applied. | Natural England's response:<br><br>Natural England welcomes any clarification from the applicant on the discrepancies in the different size of the study areas quoted. However, we do not believe these differences will have any impact upon the outcome of the assessments. | The Applicant welcomes this response from Natural England. |
| 1.1.6. | The Applicant and Natural England | HRA Methodology: Thanet Coast SAC<br>Table 7.11 of [APP-032] (European and Ramsar sites for which LSE cannot be discounted) lists both "Reefs" and "Submerged or partially submerged sea caves" as relevant features. | A. Table 8.1 of the Screening Report (PINS Ref APP-032/ Application Ref 5.2.1) does include the feature 'sea caves' for Thanet Coast SAC. However, the consideration of LSE found potential for LSE for the reef feature only and not sea caves for the majority of effects – with the notable exception of accidental pollution and invasive non- native species (INNS), both effects being | Natural England's response:<br><br>The Thanet Coast contains a large number of partly-submerged caves and tunnels in the intertidal area. These caves support very specialised and rare algal and lichen communities, which are restricted to the shaded, damp walls and ceilings of the caves. Natural England is content that there are no likely significant effects from the proposed development on this feature of the Thanet Coast SAC. | The Applicant welcomes this response from Natural England. |

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| | | Table 8.1 and Appendix I of [APP-032] describe consideration of both features of the site, but consideration of LSE is only made in respect of reefs due to the potential physical overlap.<br><br>The ExA notes that Natural England table 2.2.2 of [RR-053] does not include the submerged caves feature as a concern. Nonetheless, no direct evidence appears to have been provided by the Applicant to explain the exclusion of the sea caves, or how this qualifying feature fits against the criteria in paragraph 7.3.2 of [APP-032].<br><br>a) Could the Applicant please explain the basis upon which the "submerged or partially submerged sea caves" feature of the Thanet Coast SAC has been excluded from consideration of LSE, as listed in Table 7.11 of APP-032?<br>b) Could Natural England please identify whether its non-reference to this | screened in for LSE for sea caves and reefs for Thanet Coast SAC in Table 8.1 of the Screening Report (PINS Ref APP-032/ Application Ref 5.2.1). During the drafting of the RIAA (as published in June 2018) (PINS Ref APP-031/ Application Ref 5.2), progress was made with regards the embedded mitigation and a decision was made at that time to screen accidental pollution out from LSE for all receptors – resulting in sea caves being screened out from LSE for accidental pollution. Further, INNS were screened out for offshore in paragraph 7.5.8 of the June 2018 RIAA (PINS Ref APP-031/ Application Ref 5.2) and therefore screened out for sea caves at Thanet Coast SAC. Comment is provided in paragraph 7.5.12 of the June 2018 RIAA (PINS Ref APP-031/ Application Ref 5.2), as follows:<br>*'Specifically in relation to the Thanet Coast SAC, the Screening Report considered the potential for effect on all features, however for clarity it should be noted that where potential for LSE was found (with the exception of accidental pollution and INNS, addressed above), this related to the chalk reef feature only and not submerged sea caves – the latter having been screened out of assessment and therefore not included here'*<br>It is of note that the revised RIAA, to be issued at Deadline II, has screened accidental pollution back in for relevant sites/features including sea caves for Thanet Coast SAC, with sea caves therefore assessed for accidental pollution only within the revised RIAA, concluding no AEoI in | | |

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| | | feature is an oversight, or whether it is content that there is no LSE? | all cases. However, INNS remain screened out of LSE for all offshore receptors on the basis that the construction of Thanet Extension does not result in the introduction of a new vector for INNS as the project surrounds the existing Thanet Offshore Wind Farm, therefore, only providing a minor increase to any potential for spread of INNS to that of TOWF and does not introduce a new pathway. The screening and integrity matrices will also be updated for Deadline II to reflect these changes.<br><br>B. The Applicant would clarify that the exclusion of sea caves in the June 2018 RIAA (PINS Ref APP-031/ Application Ref 5.2) was not an oversight, but purely a function of the screening process as described in a) above. LSE has subsequently been screened in for accidental pollution within the revised RIAA (for submission at Deadline II). | | |
| 1.1.7. | The Applicant | HRA Screening and Integrity Matrices: Reference to Evidence: The HRA screening and integrity matrices currently contain minimal references to the evidence in the supporting documents, and where it is provided: reference is typically not made to specific paragraphs.<br><br>a) Please could the Applicant update the | A. The Applicant apologises for providing insufficient cross referencing. The Screening and Integrity Matrices are being updated for issue with the revised RIAA at Deadline II. Additional cross referencing will be added.<br><br>B. All features associated with designated sites will be checked for the revised matrices to be issued at Deadline II and where missing will be added. | No comment was provided by IPs | No comment is required from the Applicant |

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| | | screening and integrity matrices presented as part of [APP-033] to provide further cross-referencing to specific paragraphs / tables / figures in the ES chapters and HRA Report.<br>b) Can the Applicant please ensure that the screening matrices present all qualifying features of the sites within the body of the matrix itself<br>(for example, the "submerged or partially submerged sea caves" feature of the Thanet Coast SAC does not appear in Matrix 1 of APP- 033). | | | |
| 1.1.8. | Natural England | HRA Screening and Integrity Matrices: Coverage<br>The ExA notes that Natural England has specifically raised the European sites for which outstanding concerns remain in section 2.2 of [RR-053] (with further details later within that document). Specific confirmation as to any other concerns with LSE or adverse effect on integrity (AEoI) conclusions in respect of any of the European | A. It is the Applicants understanding, based on consultation during the drafting of the screening report (PINS Ref APP-032/ Application Ref 5.2.1) and RIAA (PINS Ref APP-031/ Application Ref 5.2), that all sites and features that Natural England expect to see have been screened in for assessment (i.e. all sites/features that should be identified for LSE have been, with the revision of the RIAA for Deadline II amending conclusions on LSE for accidental pollution to conclude LSE and follow through with a full assessment). As regarding the sites for which Natural England have outstanding concerns (identified in section 2.2 of [RR-053]), the Applicant would comment the | Natural England's response:<br><br>The examining authority is correct in stating that this will be covered within the statement of common ground which will be submitted at Deadline 1. Section 4.1 and Table 3 indicates the current position and progress Natural England have made on the conclusions for each site. | The Applicant notes this response. |

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| | | Sites would greatly assist the ExA.<br><br>a) Does Natural England have any specific comments on the Applicant's HRA screening and integrity matrices submitted in [APP-033]? In particular, has the Applicant screened in the correct features and taken the relevant ones forward to appropriate assessment to their satisfaction?<br>b) This may form part of the statement of common ground between Natural England and the Applicant. | following in each case.<br>• Thanet Coast and Sandwich Bay SPA – addressed in the Applicants response to Questions 1.1.15, 1.1.37, 1.1.38, 1.1.39 and 1.1.40 and the SoCG with Natural England.<br>• Outer Thames Estuary SPA – addressed in the Applicant's response to Question 1.1.11 and the SoCG with Natural England.<br>• Flamborough and Filey Coast pSPA – addressed in the SoCG with Natural England.<br>• Southern North Sea cSAC - addressed in the Applicant's response to Question 1.1.18, 1.1.22 and 1.1.27 and the SoCG with Natural England.<br>• Thanet Coast SAC - addressed in the SoCG with Natural England.<br>• Margate and Long Sands SAC - it is noted that during a meeting between Vattenfall and Natural England on 5th October 2018 to discuss SoCG clarification was sought regarding on this point – Natural England were uncertain as regards the basis for the concern flagged, but considered it likely to be an erroneous inclusion.<br>• Thanet Coast and Sandwich Bay Ramsar – addressed in the Applicants response to Questions 1.1.15, 1.1.37, 1.1.38, 1.1.39 and 1.1.40 and the SoCG with Natural England.<br><br>B. A Statement of Common Ground is being drafted between the Applicant and Natural England which includes reference to the Report to Inform Appropriate Assessment and other application documents where relevant. | | |

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| 1.1.9. | The Applicant and Natural England | Offshore Ornithology: Collision Risk Modelling<br>The applicant explains that due to uncertainties in data collected and reported by the Offshore Renewables Joint Industry Programme (ORJIP) none of the assessments undertaken by the applicant use the ORJIP data (4.1.142 of APP-045). As a result, the applicant's collision risk modelling is based on the Band (2012) ("Option 2") model using only generic bird flight height data (although the applicant explains that Band "option 1" data is also presented as part of the collision risk modelling). In paragraph 5.3.1.10 [RR-053], Natural England states that site specific data could make a "significant difference in the number of predicted mortalities from collision". RSPB raises similar points regarding the use of specific flight height data from the ORJIP study to inform the CRM. | A separate note provided in response to Natural England's relevant representation (Annex F to Appendix 1 of this Deadline 1 submission) provides the detailed explanation as to why data from the ORJIP Bird Collision Avoidance project was not incorporated into the CRM assessments within the ES Chapter.<br><br>Due to ongoing uncertainties in the application of the ORJIP data to the Band (2012) collision risk model Options, which are still apparent at the time of this submission (early January 2019) and with little guidance from the SNCBs on the most appropriate use of the ORJIP data in different Band (2012) model Options, there are no plans for the Applicant to use these data.<br><br>It is the considered view of the Applicant that there is a very low likelihood of large changes in the scale of the CRM outputs resulting from the use of ORJIP data to the extent that the assessment would change from being not significant in EIA terms to being significant. This is because the recorded density of flying birds is very low within the Thanet Extension site across all biological seasons. | Natural England are concerned that by using Option 2 of the Band (2012) model and not Option 1 (which uses site specific flight height data), the predicted mortalities may be underestimated. We have illustrated this using the different Collision Risk Modelling options in our Written Representations (section 6.4.26), based on the same parameters presented in Annex 4-4 (Ref: 6.4.4.4) to demonstrate the potential range for kittiwake. These outputs were generated using the deterministic Band (2012) model and did not include confidence intervals, but was carried out to illustrate the difference that using the ORJIP data could make, and to give an indication of the upper part of the range for predicted mortality.<br><br>With respect to the question on whether the modelling outputs will have a bearing on the overall conclusions, our view is that they are unlikely to change the Applicants overall conclusions. Even taking the outputs using Option 1 with flight heights from the ORJIP Bird Collision Avoidance study at Thanet (Bowgen and Cook, 2018), Natural England's opinion is that there is no likely adverse effect on integrity from collision mortality for the relevant European sites for any of the species from the project alone.<br><br>Natural England's advice is that the level of in-combination mortality from collision risk in-combination with other plans and projects in the North Sea is such that although an adverse effect on integrity of the Flamborough and Filey Coast SPA kittiwake population cannot be ruled out beyond reasonable scientific doubt. However the effect of the additional predicted mortality from Thanet Extension is unlikely to materially alter the significance of the overall in-combination mortality figure, although it is important that the project's contribution to the predicted total is accurately captured. | It is the Applicant's opinion that data on the flight height of seabirds from the ORJIP Bird Collision Avoidance project are not appropriate for use in the CRM assessments of TEOWF project. Following discussions between the Applicant and Natural England on 23rd January 2019 an explanation as to why flight height data from the ORJIP Bird Collision Avoidance project was not incorporated into the CRM assessments was provided (PINS Ref REP1-023)).<br><br>The Applicant |

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| | | a) Please could the applicant respond in detail to the points raised by Natural England and RSPB.<br>b) Could Natural England please set out its position in respect of how any such "significant differences" in the collision risk modelling outputs may have a bearing on the applicant's conclusions in respect of the conclusions of adverse effects on the integrity of the relevant European sites (from the project alone and in-combination). | | | notes Natural England's advice that the different methodological approaches to CRM are unlikely to change the conclusions in the ES and that there is no likely adverse effect on integrity from collision mortality for the relevant European sites for any of the species from the project alone.<br><br>The Applicant welcomes Natural England's statement that Thanet Extension is unlikely to materially alter the significance of the overall in-combination mortality figure for the Flamborough and Filey Coast SPA kittiwake |

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| | | | | | population.<br><br>The Applicant recognises Natural England's desire to understand the project's contribution to the overall in-combination collision mortality figure for the Flamborough and Filey Coast SPA and provides this for kittiwake and gannet in the updated Report to Inform Appropriate Assessment (RIAA), which will be submitted at Deadline 2 (Appendix 21). |
| 1.1.10. | Natural England | Offshore Ornithology: Use of the Band (2012) Collision Risk Model<br>The use of the Band (2012) Collision Risk Model for offshore ornithology [APP-048], while agreed as the most appropriate with | It is the understanding of the Applicant that the underlying method of the Band CRM is not 'currently under review'. The Applicant understands that a new software package for inputting data in to the Band model and for that package to facilitate the inclusion of variation (uncertainty) in certain input parameters has been prepared under contract to Marine Scotland. This is the | To clarify the use of Band (2012) Collision Risk Model (CRM) is not under review. We have advised the Applicant that we are content for outputs from the Band (2012) CRM to be used, provided that the uncertainty/variability in the densities of birds in flight, avoidance rates, flight heights and nocturnal activity are also presented with the deterministic outputs. This can be done either by presenting multiple deterministic/Band model outputs for the different ranges of input parameters. The uncertainty/variability can also be presented by using the Marine Scotland Science stochastic CRM tool (McGregor et al. 2018), which has now been published and is | The Applicant welcomes Natural England's statement that the use of the Band CRM model is |

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| | | Natural England, is currently under review by Natural England and Marine Scotland, and new guidance is due to be published.<br><br>• Please can Natural England provide commentary on the applicant's use of the Band (2012) Collision Risk Model and its suitability given that it is currently under review? | Marine Scotland 'Stochastic Collision Risk Model for Seabirds in Flight' with the software package available at this website: https://dmpstats.shinyapps.io/avian_stochcrm/. The Applicant understands that the outputs from this software package are identical to the Band CRM when parameters are input that have only fixed, single values. The Applicant was informed at a meeting with Natural England that the software package is a 'beta model' and as such guarantees about its performance cannot be provided. To the extent that the software package is not fully tested it can be considered to be 'currently under review' and written guidance on its use might be expected at some point from the SNCBs. The validity of the outputs from the Band CRM model when run in MSExcel with single sets of parameters remains unchanged. | available.<br><br>A stochastic version of the of the Band (2012) model has been developed by Marine Scotland Science (MSS) and this tool is now available https://www2.gov.scot/Topics/marine/marineenergy/mre/current/StochasticCRMAlthough we are not in a position to fully endorse the MSS stochastic model, we have advised the Applicant that it would be useful to start using this tool, and to present outputs alongside the outputs from the deterministic Band (2012) model. The Applicant used an earlier version of a stochastic CRM (Masden 2015) at an earlier stage in the process but the outputs were not included in the Environmental Statement due to the outputs being unreliable because the cod e was found to contain errors. This, and the findings from a review of the Masden model commissioned by Natural England (Trinder, 2017) led to the MSS tool being developed. The core calculations in the MSS CRM tool are largely the same as for Masden's code, and the core deterministic calculations underpinning the Masden code (i.e. without stochasticity) follow that of Band (2012).<br><br>To conclude, Natural England can confirm that the use of Band (2012) is appropriate, provided the variability is presented. Given the uncertainty around input parameters including flight height and nocturnal activity, we recommend that the Applicant also runs the MSS stochastic model tool, and presents the outputs alongside the Band (2012) outputs. We believe re-running the collision risk modelling using the recommended parameters will provide a more representative figure that can be added to the cumulative and in-combination totals.<br><br>References–can be supplied on request from the Examining Authority.<br><br>Band, W. (2012). Using a collision risk model to assess bird collision risks for offshore windfarms. The Crown Estate Strategic Ornithological Support Services (SOSS) report SOSS-02. SOSS Website.<br><br>Bowgen, K. & Cook, A., (2018), Bird Collision Avoidance: Empirical evidence and impact assessments, JNCC Report 614.<br><br>Masden, E. (2015). Developing an avian collision risk model to incorporate variability and uncertainty. Scottish Marine and Freshwater Science Vol 6 No 14. DOI: 10.7489/1659-1.<br><br>McGregor, R.M., King, S., Donovan, C.R., B. Caneco, B., Webb, A. (2018) A stochastic collision risk model for seabirds in flight. Marine Scotland Report. Scottish Government website. | appropriate for the purpose of assessing the potential impact of collision risk.<br><br>The Applicant provided CRM outputs including additional variance for a number of input parameters (including nocturnal activity rates and avoidance rates) within the recent submission document at Deadline 1 (PINS Ref REP1-023).<br><br>It is the Applicant's opinion that the provision of this variance in the CRM outputs provides enough precaution to allow for a meaningful |

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| | | | | | assessment of potential impacts to be undertaken. Further additional variation accounting for flight heights and bird density would merely add upper and lower limits to the mean that has already been assessed, providing additional output figures which are considered overly precautionary or under-precautionary, respectively. |
| 1.1.11. | The Applicant and Natural England | Offshore Ornithology: Displacement Effects on Red-Throated Divers<br>The Applicant's approach to the assessment of displacement effects on red-throated divers has made assumptions based on construction monitoring surveys for Thanet Offshore Wind Farm which found that that there was no | **a & b)** The Joint SNCB Interim Displacement advice note provides generic guidance on displacement for a range of seabirds in response to activities associated with the construction and operation of offshore wind farms. It does, however, advocate that where site-specific evidence is available it should be used in assessments in addition to the more generic ranges, the latter of which were all provided in Volume 4, Annex 4-3: Range of Displacement Matrices for Seabird Species Recorded in Thanet Extension (PINS Ref App-079/ Application Ref 6.4.4.3) of the Environmental Statement. | c) A copy of the SNCB advice note on displacement is attached. The recommendations in the advice note are aimed at capturing the full range of potential impacts, while encouraging developers to present any species-specific evidence to further refine this as part of both Habitat Regulations Assessment (HRA) and Environmental Impact Assessment (EIA) processes. This is why Natural England are not advocating only presenting outputs set out in this advice note, and we are content for the Applicant to present their displacement figures alongside. Since the publication of this note in 2017 further evidence has emerged that red throated diver can be displaced beyond 4km from offshore (for example Webb et al., 2017) which further justifies an approach the takes into account that divers may be displaced beyond 4km. The status of the document is that it is currently used by all SNCBs, including Natural England.<br><br>d) To clarify, due to the temporary nature of any displacement effects from Thanet Extension | The Applicant understands Natural England's preference to capture a full range of potential impacts associated with displacement. |

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| | | displacement of red-throated divers beyond the site boundary. Natural England's view is that 100% displacement should be assumed out to a distance of 4km from the site [RR-053] during construction and operation of the proposed development.<br><br>The RSPB also highlights a divergence in methodologies between the Applicant's approach to displacement assessment and the Joint SNCB Interim Displacement advice note [RR-057]. Given the apparent difference between these methodologies, the ExA is unclear about the evidential basis upon which any appropriate assessment of the project (alone and in-combination) can be made in respect of the relevant sites for which red-throated diver is a qualifying feature.<br><br>a) Please could the Applicant respond to the specific concerns raised by Natural England and RSPB in | In response to queries over the use of post-consent monitoring data collected at Thanet Offshore Wind Farm (OWF) a further note submitted in response to Natural England's relevant representation (submitted as Annex D to Appendix 1 of this Deadline 1 submission) provides additional assessments through an evidence led approach. The evidence in this note makes use of site-specific data from Thanet OWF, Kentish Flats Extension OWF and that collected for Thanet Extension which covered the operational site of Thanet OWF. The above Annex (Annex D to Appendix 1) provides additional variation on displacement rates using data collected from the sources referred to above in order to support the original assessments within the ES Chapter (PINS Ref APP-045/ Application Ref 6.2.4) accounting for red-throated diver displacement. This additional note (*ibid*) has undergone revision following consultation on the initial draft with Natural England.<br><br>c) C&d) For Natural England to provide a response.<br><br>**e)** With respect to the final question on red-throated diver and potential in-combination effects this is covered in a separate note (Annex C to Appendix 1 of this Deadline 1 submission) that contains further detail on how the in-combination assessment has been undertaken and the conclusions reached. That additional note (*ibid*)has been reviewed, revised and updated following consultation with Natural England. | alone during the construction period we would agree that there is no adverse effect on integrity to the red-throated diver feature of the Outer Thames Estuary SPA | Through the provision of a range of potential displacement rates using different sources of site-specific evidence from Thanet, Thanet Extension and Kentish Flats Extension survey data the Applicant considers a full range has been presented for consideration in impact assessments (PINS ref REP-023/ Application ref Appendix 1, Annex D to Deadline 1 Submission. Additional displacement matrices following more generic guidance are presented in the most recent submission document at |

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| | | this regard, with clear reference to the underpinning evidence.<br>b) Where the methodology has varied from that advocated within the Joint SNCB Interim Displacement advice note, can the Applicant provide further explanation as to the reasons for this.<br>c) In order that it is before the ExA and all interested parties, can Natural England please submit a copy of the document referred to as "Joint SNCB Interim Displacement Advice Note: Advice on how to present assessment information on the extent and potential consequences of seabird displacement from Offshore Wind Farm (OWF) developments" and explain its status?<br>d) Natural England's comment in relation to point 11.4.14 (page 11 of [RR-053]) is ambiguous. Please could it provide clarified wording in respect of construction and operational effects?<br>e) In light of the Applicant's approach to | | | Deadline 1 (PINS Ref REP1-023). These matrices were also provided in the ES Chapter (PINS Ref APP-045/ Application Ref 6.2.4).<br><br>The Applicant recognises Natural England's difference of opinion on the use of site-specific evidence being relied upon to determine potential displacement rates for use in impact assessments. However, the Applicant considers that from the evidence presented within the most recent submission document (PINS Ref REP-023/ Application ref Appendix 1, |

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| | | the assessment of in-combination effects of displacement of red-throated diver (paragraphs 12.4.11 – 12.4.34 of [APP-031]), and the representations of Natural England [RR-053] and the RSPB [RR-057], can the Applicant provide a response to the points raised by these two bodies to further explain how the in-combination assessment has been undertaken and conclusions reached. | | | Annex D to Deadline 1 Submission) it is apparent that Thanet Extension may be considered somewhat unique in that the displacement exhibited at this location is lower than that measured at other OWF locations within SPAs classified for red-throated diver within the North Sea. |
| 1.1.12. | The Applicant | Offshore Ornithology: Displacement Effects on Guillemot and Razorbill Natural England has expressed a view that the assessment of displacement effects on guillemot and razorbill during construction and operation should follow its guidance and be extended from a 1km to 2km distance from the proposed development site boundary.<br><br>• The Applicant is requested to provide the relevant updated | The Joint SNCB Interim Displacement advice note provides generic guidance on displacement for a range of seabirds in response to activities associated with the construction and operation of offshore wind farms. It does, however, advocate that where site-specific evidence is available it should be used in assessments in addition to the more generic ranges, the latter of which were all provided in Volume 4, Annex 4-3: Range of Displacement Matrices for Seabird Species Recorded in Thanet Extension (PINS Ref App-079/ Application Ref 6.4.4.3) of the Environmental Statement.<br><br>It is possible that Natural England did not review the original displacement matrices that were provided in ES Annex 4-3 (PINS Ref APP-079 / Application Ref 6.4.4.3). For | No comment was provided by IPs | No comment is required from the Applicant |

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| | | displacement matrices (to supplement those presented in section 11.4 of [APP-031]) such that the Examining Authority and parties to the examination can consider the potential range of displacement effects that may arise between the Applicant's and Natural England's advocated approaches. | clarity these matrices are presented again in Annex E to Appendix 1 of this Deadline 1 submission.<br><br>In response to Natural England's Relevant Representation (RR-053) that questioned the use of post-consent monitoring data collected at Thanet OWF, additional supporting evidence is provided in Annex E to Appendix 1 of this Deadline 1 submission. The evidence in this note makes use of site-specific data from Thanet OWF and that collected for Thanet Extension, which also covered the operational site of Thanet OWF. Annex E to Appendix 1 provides additional variation on displacement rates using data collected from the sources referred to above in order to support the original assessments within Volume 2, Chapter 4 (PINS Ref APP-045/ Application Ref 6.2.4) of the Environmental Statement accounting for gannet and auk displacement. This additional note is currently undergoing revision following consultation on the initial draft with Natural England. | | |
| 1.1.13. | The Applicant and Natural England | Offshore Ornithology: In-Combination Assessment – Other NSIPs The ornithological in-combination assessment assigns other projects to a "tier" depending on the certainty of their delivery. Both Hornsea Project 3 and Norfolk Vanguard are presented as tier 4 projects in Table 8.4 of [APP-031], which does not reflect the fact that both applications for | Tier 4 is defined as 'submitted applications not yet determined', so the classification of both Hornsea P3 and Norfolk Vanguard are categorised correctly according to the Tiering system applied in the Report to Inform Appropriate Assessment (PINS Ref APP-031/ Application Ref 5.2). Categorisation as Tier 4 means that 'low confidence' can be placed in the quantitative contribution that these projects make to the in-combination assessment since there are several further iterations that the project will go through (e.g. amendments at the Hearing stage, amendments at detailed design stage and amendments based on award of contract for difference) before it is constructed and its | Natural England understands that it is the Applicant's intended approach to take the figures agreed at the end of the EA3 hearing and add Thanet Extension, Hornsea 3 and Norfolk Vanguard to those. However, at the moment there is still disagreement regarding the figures for those three projects and therefore there are no updates to report at the moment. | The Applicant has submitted revised cumulative collision risk totals in the latest submission document (PINS Ref REP-023/ Appendix 1, Annex F to Deadline 1 Submission). These revised totals consider |

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| | | development consent have now been submitted.<br>• Please could the Applicant and Natural England advise the ExA as to intended updates to the in-combination assessment in respect of disturbance, displacement and collision risk effects in light of these changes, and the relevant sites and features for which these apply? | predicted impacts might be realised. However, since the Tier categorisation of these two projects has not changed, there is no proposal to change the in-combination assessments with respect to the contribution of these two projects. | | the figures agreed at the end of EA3, in accordance with Natural England's response, as well as the latest submission totals from Norfolk Vanguard.<br><br>The Applicant has completed revised in-combination collision risk assessments within a revised RIAA, which is to form part of the submissions at Deadline 2.<br><br>The Applicant recognises that there is ongoing debate around the total cumulative and in-combination totals for seabirds in the southern North Sea. |

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| | | | | | The Applicant notes that Natural England consider that collision mortality rates estimated for Thanet Extension make no material difference to cumulative and in-combination totals. |
| 1.1.14. | The Applicant | Offshore Ornithology: In-Combination Assessment - Other Projects Paragraph 8.5.4 of [APP-031] states that (in respect of the offshore ornithology in-combination assessment) "Projects related to marine aggregate extraction, port dredging, disposal, oil and gas extraction, pipelines, shipping, coastal developments and commercial fisheries have been screened out on a series of factors including those that do not overlap spatially with Thanet Extension, those that do not give | The Applicant can confirm that the text about the screening process that is provided in Paragraph 8.5.4 of the Report to Inform Appropriate Assessment (PINS Ref APP-031/ Application Ref 5.2) does only apply to the offshore ornithology assessment. | No comment was provided by IPs | No comment is required from the Applicant |

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| | | rise to effects that are cumulative with relevant effects from Thanet Extension, those that are recurring or ongoing from before the baseline period and those that are ongoing activities rather than projects with a consenting process"<br><br>• Could the applicant confirm that this paragraph was only intended to apply in the context of the offshore ornithology assessment (on the basis that such a statement is only made under section 8.5 of the RIAA, and not in sections 8.2 or 8.3, for example)? | | | |
| 1.1.15. | The Applicant and Kent Wildlife Trust | Offshore Ornithology: Screening in Relation to Saltmarsh Habitat<br>Paragraph 7.5.29 of [APP-031] states that "Temporary disturbance/ loss of intertidal habitat used by non-breeding European golden plover and ruddy turnstone (during construction and O&M) remains screened in and is addressed as part of the benthic intertidal assessment." Paragraph 7.5.25 of [APP-031] | The Applicant can confirm that it proposes to remove landfall Option 2 has been removed from the project envelope and as such there is no longer be any long term loss of saltmarsh during the operational phase of the project. On the balance of evidence within Pegwell Bay drawn from the existing Thanet OWF, and other regional experience, it is the Applicants position that through adherence to the saltmarsh management and monitoring plan recovery will be complete. This is particularly of note when considering the success following installation of the Thanet OWF cables to the north of Pegwell Bay. | KWT'S response:<br><br>We agree with the comments made by Natural England and believe that due to the ecological importance of the saltmarsh habitat, the permanent loss of saltmarsh should not be screened out. Saltmarsh is an important supporting habitat of the various environmental designations and is used by European golden plover and ruddy turnstone as well as other species, and is an important feature of the Sandwich Bay to Hacklinge Marshes SSSI. Total recovery of damaged or disturbed saltmarsh cannot be assumed and a precautionary approach should be taken by the applicant. Therefore we believe that an appropriate assessment should be carried out for saltmarsh habitat. | As stated in the Applicant's Response to this question at Deadline 1, landfall Option 2 has been removed from the project envelope and as such there is no longer any permanent loss of saltmarsh.<br><br>With respect |

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| | | screens out the permanent loss of saltmarsh habitat in terms of these qualifying features. On the basis that salt marsh is a supporting habitat for European golden plover and ruddy turnstone (qualifying features of the sites), Natural England states that the permanent loss during long term operation should be considered as a likely significant effect (LSE), and that the competent authority will need to consider an appropriate assessment in this respect. Natural England considers that the success of restoration in their post-construction experience of similar situations is not such that a total recovery (and therefore no permanent loss) can be assumed and LSE ruled out.<br><br>• Can the Applicant and Kent Wildlife Trust please respond to these points? | | | to the recovery of damaged or disturbed saltmarsh, as stated in the Applicant's Response to this question at Deadline 1, the Applicant's position is that through adherence to the Saltmarsh Mitigation, Reinstatement and Monitoring Plan (PINS Ref APP-147/ Application Ref 8.13) recovery will be complete.<br><br>The Applicant also notes that the implications of the temporary loss/ disturbance of saltmarsh habitat for European golden plover and ruddy turnstone is subject to appropriate assessment |

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| | | | | | (see Report to Inform Appropriate Assessment (PINS Ref APP-031/ Application Ref 5.2), also submitted at Deadline 2 (Appendix 21 to Deadline 2).<br><br>On the basis of the above, the Applicant believes that all of the comments made by KWT in their response to this question have been addressed. |
| 1.1.16. | The Applicant | Offshore Ornithology: Screening in Relation to Barrier Effects Table 7.3 of the HRA screening report [APP-032] defines the potential for barrier effects (as "The presence of the operating Thanet Extension could potentially create a barrier to seasonal migratory movements and/ or regular foraging | Further justification that barrier effects are not likely to be significant can be found in Paragraphs 4.1.153 to 155 of Volume 2, Chapter 4: Offshore Ornithology (PINS Ref APP-45/ Application Ref 6.2.4) of the Environmental Statement with those paragraphs providing summary information about, and reference to, five peer reviewed ornithological publications. The conclusion made in that ES Chapter (Paragraph 4.1.155) was that the significance of the barrier effect for all species assessed was 'negligible adverse'. | No further response received from other Interested Parties | No response required from Applicant |

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| | | flights"). Table 8.1 of [APP-032] then concludes (on the basis of post-construction studies at operating Offshore Wind Farms) that barrier effects are not assessed as significant, and this potential effect is then not carried forward into the Report to Inform Appropriate Assessment.<br><br>• Can the Applicant clarify where further justification is provided in the application documents to support the conclusion that barrier effects are not likely to be significant? | | | |
| 1.1.17. | The Applicant | Marine Mammals: Methodology<br>Natural England highlights the value in the JNCC's Joint Cetacean Protocol data with regard to harbour porpoise densities.<br><br>• Can the applicant explain the extent to which this dataset has been considered as part of the EIA and the RIAA? If it has not been considered, why not? | As regards the RIAA (section 1.3 of (PINS Ref APP-031/ Application Ref 5.2)), baseline data is not presented to avoid repetition between project reports, with the relevant project literature referenced instead. Therefore the comment refers to the ES only, with the question addressed in Natural England's Relevant Representation (NE-94). In brief at the time of writing the Thanet Extension ES, there was concern regarding the JCP Phase III densities obtained from the JNCC R software code, as the densities calculated from the code did not match the data provided in the corresponding JNCC density surface maps. This meant that the Applicant did not have confidence in basing any quantitative assessment on these values, but they were presented in the baseline for information. Since then, JNCC have | No further response received from other Interested Parties | No response required from Applicant |

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| | | | confirmed that the error was with the density surface maps and that the R code should be providing the correct density estimate for the user specified area. Therefore, the worst case behavioural disturbance scenario (monopile 5,000 kJ at the East Location) has since been modelled using the average JCP Phase III density estimate of 1.16 porpoise/km$^2$. A note detailing the results of this assessment is presented in Annex G to Appendix 1 of this Deadline 1 submission. The conclusion of this modelling was that there was no material change to the assessment and the impact significance remains minor. | | |
| 1.1.18. | The Applicant | Marine Mammals: In-Combination Assessment Paragraphs 12.3.14 – 12.3.19 of [APP-031] explain the approach to the assessment of in-combination effects on marine mammals, and that due to uncertainties in overlapping programmes, tier 2 projects (and above) are excluded from consideration. Because of the Contract for Difference process, Natural England is of the view that other tier 2 projects identified could overlap with Thanet Extension. Whilst the ExA recognises the applicant's position that | The Applicant retains the position that the extreme uncertainty around Tier 2 projects means their inclusion within an in-combination assessment would be excessively precautionary. However, the Applicant recognises the concerns of Natural England based on the RIAA as issued in June 2018 (PINS Ref APP-031/ Application Ref 5.2) and can confirm that the RIAA is being redrafted and will be issued at Deadline II. As part of that redrafting, the marine mammal in-combination assessment has been revisited and the Applicant can confirm that where new information has become available in the public domain regarding projects in-combination (including activities, timescale and project) since June 2018 and until mid December 2018, the assessment has been amended to reflect that. The Applicant can also confirm that the Southern North Sea cSAC/SCI harbour porpoise in-combination assessment will be revised based on Thanet Extension plus Tier 1 projects (as per the document issued with the application in June 2018 PINS Ref APP-031/ Application Ref 5.), together with | No further response received from other Interested Parties | No response required from Applicant |

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| | | there is "extreme uncertainty regarding the potential for the Tier 2, 3 and 4 offshore wind farm projects to come forward in their current form and at a timescale where piling would overlap with UXO clearance and/ or piling activity at Thanet Extension", the information to inform an appropriate assessment must be based on a sufficiently precautionary approach.<br><br>• Please provide the ExA with a response to Natural England's (RR-053) regarding the exclusion of tier 2 projects. | Thanet Extension plus Tier 1 and Tier 2 projects, in response to the concerns raised by Natural England. The Applicant can also confirm that a Site Integrity Plan has been drafted and will also be issued at Deadline II to accompany the revised RIAA, to provide certainty in the conclusions of no adverse effect on integrity drawn throughout the revised RIAA with respect to the Southern North Sea cSAC/SCI, including the conclusions in-combination with Tier 1 and Tier 2 projects. The revisit of the in-combination assessment did not identify any Tier 3 or Tier 4 projects with the potential to contribute to an effect in-combination with Thanet Extension (based on project location and/or timescale). | | |
| 1.1.19. | The Applicant | Marine Mammals: Piling Noise Effects Natural England's relevant representation suggests that the maximum hammer energy used for piling assessed in the ES should be set out within the design parameters of the DCO and DMLs with a view to ensuring that noise generated by piling activities does not exceed that assessed within the ES. Similarly, the noise effects of UXO | A. The Applicant can confirm that:<br>i. the parameters proposed, i.e. the maximum parameters of the foundations and the maximum hammer energy, are proposed on the basis of experience in the construction of OWFs and through an understanding of the technologies likely to be available at the proposed time of construction. These parameters are in turn used to inform the modelling of underwater noise which informs the assessment.;<br>ii. The presentation of these | No further response received from other Interested Parties | No response required from Applicant |

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| | | detonation assessed in the ES do not appear to be addressed within the DCO or DMLs.<br><br>a) With particular regard to proposed hammer energies used during the construction phase and the effect on marine mammals, could the applicant please:<br>i. justify the parameters used during the worst case assessment,<br>ii. confirm how these parameters would be secured within the DCO/DML; and,<br>iii. address any discrepancies that exist between the DCO and the assessment in the ES in this regard.<br>b) With regard to the mitigation of noise effects of UXO detonations, please can the applicant describe how a UXO-MMMP (as referenced in table 6.1 of [APP-031]) would be secured. | parameters is a requirement of the relevant Construction Method Statements, the provision of which is secured within Condition 12(1)(c) of the Generation Assets dML, and Condition 10 (1)(c) of the export Cable Systems dML. The CMS documents are required to demonstrate that the construction methods used at the time of construction are in accordance with those assessed within the ES. Using hammer energy as an example, it is standard practice refer to the hammer energy value consented, the proposed hammer energy to be used for construction, and account made for any discrepancy between the consented and proposed value where necessary (i.e. if the parameters are greater and therefore not in accordance with those assessed within the ES the Applicant would need to demonstrate to the regulator (MMO) that there is no material change in the findings of the assessment as a result of the change in parameter)..<br>iii. It is the Applicant's position that there is no discrepancy in this regard<br>B. The Applicant is not including UXO detonation within the draft Order as applied for. This is because it is not | | |

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| | | | possible at this stage to accurately foresee the exact number of UXO detonations that will be required. As such, the final numbers of UXO requiring clearance for the Project will be confirmed by pre-construction site investigations. If required, a separate Marine Licence for UXO detention will then be applied for and this will include the necessary condition to secure a UXO-MMMP. The MMO will have full control over any such licensable activities. | | |
| 1.1.20. | The Applicant | Marine Mammals: Construction Noise Assessment<br>The noise impact assessment contained in [APP-048] is based on the worst-case design scenario as at this stage in the project design there is not sufficient information available to inform a full pile drivability assessment across the site.<br><br>• Please can the applicant provide an update on the full pile drivability assessment, including the likely timeframe within which it is envisaged that this will be undertaken in order to refine the assessment in the ES? | A full pile drivability assessment will require site wide pre-construction geotechnical survey and confirmation of the design of foundations. As such this will not be available until pre-construction. There is however sufficient information available through reference to the existing Thanet OWF and other UK developments to be confident that there is sufficient information and understanding for an assessment to be undertaken of the worst case scenario for any foundation design. | No further response received from other Interested Parties | No response required from Applicant |
| 1.1.21. | The Applicant | Marine Mammals: Noise Reduction Technologies | A requirement for mitigation is driven by the level of impact. Effectively, mitigation is required where an impact exceeds an | No further response received from other Interested Parties | No response required from Applicant |

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| | | The Marine Management Organisation states that noise reduction technologies, such as bubble curtains and acoustic barriers should be considered as a primary means of reducing the acoustic impact of pile driving operations.<br><br>• Could the applicant please explain what consideration has been given to the use of these at source noise reduction technologies to mitigate the effects on marine species? | acceptable level. Marine mammal mitigation is provided for within the Marine Mammal Mitigation Protocol (MMMP PINS Ref APP-146/ Application Ref 8.11) to address the risk of injury. Consideration of further mitigation (namely noise mitigation at source), which would only therefore be required should the risk of disturbance exceed acceptable levels, is addressed in response to Natural England's relevant representation NE-102. It is considered that there is no driver for such a mitigation strategy and in any case, there would be no change to the existing conclusion of the ES should such mitigation be instigated (referenced in Table 7.44 of Volume 2, Chapter 7: Marine Mammals, PINs Ref APP-048 /Application Ref. 6.2.7). | | |
| 1.1.22. | The Applicant and Natural England | Marine Mammals: Deemed Marine Licence (DML) Condition Wording<br>Natural England has suggested amendments to the wording of Condition 16 of the DML at Schedule 11 to, in effect, provide for the cessation of piling activity in the event that construction noise monitoring shows a significantly different impact to that assessed in the ES.<br><br>a) Can Natural England please comment on this proposed change in | A) This question is noted as for Natural England. The Applicant wishes to note that the proposed wording is no longer considered to be the position of Natural England. Furthermore, it is the position of the Applicant that the ability to request cessation of works would not materially alter the conclusions of the Report to Informa Appropriate Assessment with regards effects on the Southern North Sea cSAC.<br>B) As detailed in response to Natural England's RR 49 and MMO's RR 70 it is understood that this no longer represents Natural England 's position (or that of MMO). The proposed wording was brought forward due to uncertainty in the monitoring results associated with another OWF in construction at the | MMO,<br>At this time the MMO would support the inclusion of the additional wording proposed by Natural England, noting that the content of the proposed noise monitoring is currently under discussion with the applicant. The MMO is seeking to secure additional measures within the monitoring plans to set out the action that will be taken, in the event that observed noise levels are above predicted levels, to ensure any mitigation remains fit for purpose.<br><br>NE<br><br>The comments concerning alterations to the DML condition wording were related to previous Natural England concerns over the effectiveness of the soft start. Natural England refers the Examining Authority to Natural England's statement of common ground with the applicant to be submitted at Deadline 1 and the applicant's response to our relevant representations. It is explained that the report that caused our original concern provided anomalous results. The updated report showed that aside from an initial high noise level as the pile initially penetrates the seabed surface, the soft start does act as required in terms of building up the noise levels. Therefore, Natural England have no further request to alter the wording of condition 16 of the DML. | The Applicant notes MMO's support for Natural England's suggested wording, and also notes that Natural England no longer consider it necessary, which accords with the Applicants position and understanding . The Applicant will continue to engage with |

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| | | respect of the conclusions of AEoI to the Southern North Sea cSAC and other relevant sites (alone and in combination)?<br>b) Please could the applicant confirm whether or not it is agreeable to the revised condition wording proposed by NE?<br>• If not, why not?<br>• Is there alternative wording that would be acceptable to both parties? | time of writing the representation (summer 2018). Immaterial of this change in position it is the Applicant's position that a condition worded with the amendments suggested is unnecessary. The MMO have the ability to enforce a cessation order at any time, and this enforcement mechanism is understood to have been suggested for the OWF which was in construction at the time of drafting the representation. A further condition explicitly making reference to powers already held by a regulatory authority would therefore not be required. With regards alternative wording on this matter, it is not considered necessary to have any wording for the reasons identified above. | | both the MMO and Natural England in relation to the content of the Deemed Marine Licences. |
| 1.1.23. | Natural England, the Applicant and Marine Management Organisation | Marine Mammals: Soft Start Piling<br>Soft start piling is proposed as one form of mitigation for the possible construction noise effects on marine mammals. Natural England's relevant representation refers to emerging evidence that soft start may not be as effective a form of mitigation as previously thought.<br><br>a) Please could Natural England provide further detail about the latest evidence in this regard?<br>• What does Natural | A) As noted in response to ExQ 1.1.22 the Natural England (and MMO) RR reference to uncertainty with regards the effectiveness of soft start piling is understood to be related to the monitoring associated with a different OWF. It is the Applicant's understanding that the emerging evidence referred to by Natural England relates to an OWF under construction in the summer of 2018 that was subject to monitoring challenges which were subsequently addressed to the satisfaction of Natural England and MMO by the developer in question.<br>B) Please note the Applicant's response to part A of this question.<br>C) Soft start piling is presented as a mitigation measure within section 4.5 of the draft Marine Mammal | MMO,<br>Response to b) –<br>The MMO notes Natural England's concerns with observed soft start levels not being significantly different from noise levels at full power. This could affect the validity of the SELcum modelling, and could have implications for the distances animals need to be away at the start of piling to avoid injury. The MMO believes that the concern related to one particular project and was attributed to issues with the monitoring, which was later re-done. However, the MMO considers this reinforces the need for an appropriate mechanism to be secured in the monitoring plans for prompt reporting and resolution<br><br>NE<br><br>Natural England refers the Examining Authority to Natural England's Statement of Common Ground (SoCG) and the developer's response to our relevant representations, where it is explained that the report that caused our original concern provided anomalous results. The updated report showed that aside from an initial high noise level as the pile initially penetrates the seabed surface, the soft start does act as required in terms of building up the noise levels and acting as mitigation.<br><br>Therefore Natural England have no further concerns over the soft start. | The Applicant notes MMO's support for Natural England's suggested wording. It also notes that Natural England no longer consider it necessary, which accords with the Applicants position and understanding. The Applicant will continue to engage with |

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| | | England consider to be the specific implications for Thanet Extension Offshore Wind Farm?<br>b) Could the applicant and Marine Management Organisation please respond to Natural England's relevant representation on this matter?<br>c) Please can the applicant demonstrate how mitigation in the form of soft start piling would be secured within the DCO / DMLs? | Mitigation Plan (MMMP) (PINS ref APP-146/ Application ref 8.11). The MMMP is secured in the deemed marine licences (dMLs) within the draft Development Consent Order (DCO) (PINS ref APP-022/ Application ref 3.1), specifically in Condition 12(1)(f) of Schedule 11 (Generation Assets dML) and Condition 10(1)(f) of Schedule 12 (Export Cable System dML). | | both the MMO and Natural England in relation to the content of the Deemed Marine Licences. |
| 1.1.24. | The Applicant | Piling Noise Assessment: Harbour Porpoise<br>Paragraphs 7.4 and 7.5 of the Marine Management Organisation's relevant representation query the use of mean predicted impact ranges, as opposed to maximum impact ranges, in the piling noise assessment for harbour porpoise.<br><br>• Could the applicant please confirm which impact range it considers to be appropriate in this context and why? | As per the Applicant's response to the MMO relevant representation (MMO-159) the Applicant can confirm that the MMO is correct. The PTS ranges presented in Tables 7.25 and 7.26 of the ES are the mean ranges not the maximum. The mean range was presented in the ES as it is important to note that the mean ranges present an indication of the risk averaged out across all the directions and smooths out the effect of predicted local variations in noise propagation conditions. As such, the average impact ranges present a better indication of the overall risk averaged over space and time. The maximum range indicates the total maximum distance of the impact range but is only accurate for a small number of possible trajectories from the piling site. The impact areas are asymmetrical and as such, use of the maximum range significantly overestimates the overall general extent of the impact. However the MMMP and EPS risk assessment will be updated post-consent to | No further response received from other Interested Parties | No response required from Applicant |

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| | | | present both mean and maximum ranges before submission to the relevant authorities for approval. | | |
| 1.1.25. | The Applicant | Cumulative Underwater Noise Effects on Harbour Porpoise: Residual Effects<br>The cumulative effects assessment [APP-039] identifies potentially significant adverse residual effects in terms of cumulative underwater noise impacts on harbour porpoise (as summarised in Annex 3-1 of the ES), but with "no significant long term effect on the size or health of the population".<br><br>• Please can the applicant provide clarity as to how it is possible to identify potentially significant adverse residual effects and then conclude no significant long term effect. | The initial finding of potential moderate significance resulted from an assessment of medium magnitude combined with a medium assessment of sensitivity. The magnitude assessment of medium was based on considering the summed number of individuals across all Tier 1 and 2 projects in the cumulative effects assessment, which was a total of 31,455 individuals potentially experiencing disturbance. However, on the basis of current available evidence, expert judgement and modelling exercises, it is not predicted that this level of disturbance, which although potentially affecting a relatively large number of individuals, will result in a significant long term change in the size or trajectory of the harbour porpoise population (Tougaard et al. 2014, Booth et al. 2017, Nabe-Nielsen et al. 2018). In particular, since the production of this ES more recent population modelling using the DEPONS model has demonstrated that the North Sea harbour porpoise population was not affected by the construction of 65 offshore wind farms within the North Sea (Nabe-Nielsen et al., 2018). The modelling results demonstrated that, at the North Sea scale, the population dynamics of the impacted population was indistinguishable from the un-impacted (baseline) population under realistic scenarios. Even when assuming extreme responses, including those which have never been observed in relation to offshore wind farm construction, of large scale displacement of animals to 200 km from the pile driving, resulted in short term effects, with the population size returning to baseline levels shortly after the end of the construction period. | No further response received from other Interested Parties | No response required from Applicant |

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| | | | Based on this new evidence the Applicant considers the cumulative impact of pile driving on harbour porpoises as being of minor significance. | | |
| 1.1.26. | The Applicant | Cumulative Underwater Noise Effects on Harbour Porpoise: Mitigation<br>The cumulative assessment predicts that Tier 1 and Tier 2 projects may affect 9% of the harbour porpoise population through disturbance/displacement from underwater noise, and this would lead to a moderate adverse effect on harbour porpoises. The ES states that no additional mitigation is identified, as the relative contribution of the proposed development to the cumulative effect is very low, such that were the impact of the proposed development to be removed, a moderate adverse effect would still be predicted based on the other projects assessed<br><br>a) Please could the Applicant provide additional justification for the position that no further mitigation is able to decrease the | Paragraph 7.14.40 of Marine Mammals ES chapter (PINS Ref APP-048/ Application Ref 6.2.7): If the impact of Thanet Extension were to be removed from this cumulative assessment, a moderate adverse effect would still be predicted for harbour porpoise based on the levels of impact from the other projects considered. Given this, it would not be possible to reduce this conclusion from a Moderate significance in EIA terms by the application of any mitigation specifically at Thanet Extension.<br><br>A. Even if Thanet Extension were removed from the cumulative assessment, the total number of animals predicted to be affected cumulatively across Tiers 1 and 2 would reduce from 34,455 to 29,575, reducing as a percentage of the population from 9.1% to 8.6%, which is not a material difference. A moderate adverse effect would still be predicted from the combined T1 and T2 projects included in the assessment (under the worst-case concurrent piling scenario). Therefore there are no Project specific mitigation methods that can reduce this significance level as it is very much driven by other Projects. However given the evidence referred to above, it is important to highlight that although 9% in terms of the proportion of the population may be considered a medium magnitude, this is very unlikely to lead to a long term effect on the population. | No further response received from other Interested Parties | No response required from Applicant |

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| | | cumulative effect to below moderate?<br>b) If these effects are based on a "worst case" scenario, is this conclusion the same for all of the foundation piling options? Could the Applicant please provide further detail in this regard. | B. As per the Applicants response to Natural England's relevant representation NE-381: The concurrent cumulative scenario is wholly unrealistic, as such numbers do not take into account any spatial overlap in affected areas between projects and does not consider that any effects on individuals are likely to be temporary, reversible and short term. Concurrent piling across multiple sites at once is considered unrealistic as there are not enough piling vessels in existence for multiple overlapping concurrent piling scenarios to be realised. However, if we were assessing single vessel piling across Tier 1 and 2 (including Thanet Extension), this would result in a total impact to 5.6% of the porpoise population. This would be assessed as low magnitude and combined with a medium sensitivity, would result in an impact of minor significance. Without the effect of Thanet Extension the equivalent figure is a total impact to 5.1% of the porpoise population, similarly not considered a material difference. | | |

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| 1.1.27. | The Applicant, Natural England and Marine Management Organisation | Southern North Sea cSAC: Review of Consents<br>The ExA is aware that a Review of Consents in respect of the Southern North Sea cSAC is being undertaken1, and that the Department for Business, Energy & Industrial Strategy (and the Marine Management Organisation) has published a draft HRA for consultation.<br>• Taking this into account, can the Applicant, NE and the Marine Management Organisation provide further comments on potential in-combination disturbance impacts to marine mammals of the Southern North Sea cSAC? | The Applicant is aware of the Review of Consents (RoC). The Applicant would stress that the document is a draft and issued for consultation. The Applicant would also highlight the overriding conclusion of no adverse effect, alone and in-combination, drawn by the report.<br><br>The Applicant would also highlight that limited reference to Thanet Extension is made in the report, with comment on Thanet Extension made in Table 2 of the RoC (see Appendix II). This states that an application has been submitted, and that there is no requirement to review the consent in the RoC since as the application was made following the designation of the cSAC and no consent decision was available to review.<br><br>The RIAA submitted in June 2018 (PINS Ref APP-031/ Application Ref 5.2) made full consideration of the Southern North Sea cSAC, alone and in-combination, including assessment of disturbance impacts on harbour porpoise, and concluded no AEoI in all cases. The Applicant can confirm that the revised RIAA, to be issued at Deadline II, will includes an updated in-combination assessment, taking account of project progress and changes in-combination since that date and until mid- December 2018, together with further consideration of Tier 2 projects. The methodology applied to the assessment within the RIAA (PINS Ref APP-031/ Application Ref 5.2) and revised RIAA follows that applied in previous such reports and Appropriate Assessments issued by BEIS (for example see Appendix II) and the MMO (for example see Appendix III), with Natural England agreeing the assessment approach during the Evidence Plan process (see HRA | Natural England's response:<br><br>The Department for Business, Energy and Industrial Strategy (BEIS) published a draft Habitats Regulations Assessment (HRA) of their review of consents (RoC) in autumn 2018 and Natural England submitted a response to this on 13 December. In our response we advised that the draft assessment had not covered sufficient scenarios so we are of the view that the in combination assessment is not yet sufficiently comprehensive. However, despite this, some of the in combination scenarios presented indicate that seasonal noise thresholds for the cSAC as advised by the Statutory Nature Conservation Bodies (SNCBs) could be exceeded by windfarm projects constructing at the same time (and also in conjunction with other noisy activities from other marine sectors). | The Applicant has agreed through the Evidence Plan process to submit a draft Site Integrity Plan (SIP). The SIP will follow the broad structure suggested by Natural England and detail the relevant mitigation measures that will be applied in a variety of situations to ensure there are no adverse effects on the cSAC. |
| | | | | Marine Management Organisations response:<br><br>The MMO is not in a position to draw any firm conclusions at this stage, given that the HRA that has been published is only a draft and the review of consents has not been completed.<br><br>The MMO does, however, note section 18.2 of the draft Appropriate assessment (AA), suggesting that a pre-construction condition requiring a Site Integrity Plan (SIP) will be attached to each relevant project's Marine Licence. The effect of the SIP will be to limit each wind farm to the parameters that have been assessed by the HRA and ensure that draft thresholds are not exceeded. | The Applicant has agreed through the Evidence Plan process to submit a draft Site Integrity Plan (SIP). The SIP will detail the relevant mitigation measures that will be applied in a variety of situations to ensure there are no adverse |

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| | | | Technical Panel Meeting Minutes dated 02/10/17 contained in PINS Ref APP-138/ Application Ref 8.5.1). The Applicant considers the assessment of disturbance with respect to harbour porpoise and the Southern North Sea cSAC, as presented in the RIAA (PINS Ref APP-031/ Application Ref 5.2) and the forthcoming RIAA, to be full and complete and in compliance with the requirements of Natural England. | | effects on the cSAC. |
| 1.1.28. | The Applicant | Offshore Ecology: Fish and Fisheries<br>The Marine Management Organisation raises a number of detailed matters in respect of the assessment of effects on fish ecology and fisheries.<br><br>a) Please could the applicant provide a table which responds in turn to the points raised by the Marine Management Organisation in relation to assessment of the effects on fish ecology (in particular Herring, Sole and Sandeel) at paragraphs 6.2-6.17 of its relevant representation (RR-049). | A table of responses to the points raised by the MMO in its Relevant Representation (RR-049) (paragraphs 6.2 to 6.17) in relation to the assessment of effects on fish ecology is included at Appendix 1 (Applicant's response to Relevant Representations) to this Deadline 1 submission.<br><br>In brief, it is the Applicant's position that the findings of the assessment conclude that the potential impacts are not significant. It is understood from the MMO's relevant representation, and the draft Statement of Common Ground, that these conclusions are agreed with the MMO. In light of the impacts being not significant there is no further need for mitigation measures, any such measures would be disproportionate given the scale of predicted effect. It is further worthy of note that the assessment is based on the best available data, approved noise metrics, and as such there is limited uncertainty in the assessment. | No further response received from other Interested Parties | No response required from Applicant |
| 1.1.29. | The Applicant | Offshore Ecology: Shellfish | The potting fishing grounds data illustrated in Figure 3.8 of Annex 9-1: Commercial | No further response received from other Interested Parties | No response required from |

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| | | The Marine Management Organisation considers that the data indicates that the magnitude of the impact from loss or restricted access to traditional fishing grounds on the potting fleet should be increased from 'minor' to 'medium'. | Fisheries Technical Report (PINS Ref APP-088/ Application Ref 6.4.9.1) was collated by Thanet Fishermen's Association (TFA). This identified potting grounds as being very close to and within the development site. The subsequent Succorfish data obtained during 2017 from TFA members' vessels (Figure 3.21 – 3.29 *ibid*) illustrated that vessels work a wider range of grounds, several of which move through the array area in order to work grounds beyond the site.<br>It is acknowledged, however, that one vessel appears to work along the eastern edge of the site boundary and another in the north-west corner. As listed in Paragraphs 9.17.11 - 9.17.14 of Volume 2, Chapter 9: Commercial Fisheries (PINS Ref APP-050/ Application Ref 6.2.9), the UK potting fleet has a medium sensitivity due to restrictions on operational range, available grounds etc. However, the magnitude is assessed as low due to the limited and temporary nature of the duration of activities and the range of other grounds that can be targeted, as shown by the Succorfish data.<br><br>Potting has been shown on other projects to successfully return to operational wind farms. Furthermore, scour protection and other measures can provide refuges for commercially important shellfish species, particularly lobsters. This confirms the temporary nature of the magnitude of the impact. | | Applicant |
| 1.1.30. | The Applicant | Benthic Ecology: Subtidal Biogenic Reef<br>Paragraph 2.7.28 of APP-043 states that Drill Stone Reef, within the array area, is thought to be formed | A. Paragraph 5.7.10 of Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5) of the Environmental Statement identifies that it is thought that Drill Stone Reef has been formed by Sabellaria | Natural England's response:<br><br>Within the Biogenic Reef Mitigation Plan (BRMP) it states in section 5.1.1 "Post construction monitoring will consist of geophysical surveys of the whole development site. A comparison can then be made based on any change in reef extent and position between pre and post-construction | The Applicant notes that the statement made in the BRMP was specific to biogenic reef |

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| | | by Sabellaria Spinulosa reef. However, APP-046 indicates that there is no such reef within the study area.<br><br>a) Could the applicant please clarify whether or not there is believed to be the presence of Sabellaria Spinulosa reef within the study area, providing full reference to the supporting evidence.<br>b) Could the applicant and NE please respond to the suggestion of Kent Wildlife Trust and the Marine Management Organisation that post-construction benthic monitoring, to include monitoring of scour protection / cable protection to measure the presence of biogenic reefs and species on the sediment overlaying the cables, should be incorporated into the conditions of the DML. | spinulosa and that reef was found on this feature during the surveys for TOWF. However, it was confirmed within the characterisation surveys undertaken in 2016 that no S. spinulosa reef was identified at that time on the section of Drill Stone Reef within the Thanet Extension array area. However, it is considered likely, based on the results of the TOWF post-construction surveys (Pearce et al., 2014), that S. spinulosa reef exists in the wider study area and may therefore develop within the array area or OECC prior to the start of construction. As such, the Biogenic Reef Mitigation Plan (PINS Ref APP-149/ Application Ref 8.15) to be produced prior to construction will incorporate the pre-construction surveys which will include benthic investigations for S. spinulosa reef.<br><br>B. The Applicant considers that the post-construction monitoring requirement (at Condition 17 of the Generation Assets dML (Schedule 11) and Condition 15 of the Export Cable Systems dML (Schedule 12)) which requires geophysical survey provides adequate post-construction monitoring of scour protection/ cable protection. The Applicant does not consider that it is necessary to undertake further broadscale benthic species monitoring as there is limited justification with regards uncertainty or validation of ES predictions to do so. This is also supported by the MMO's 2014 review of post-construction | surveys and the success of micrositing mitigation measures assessed."<br><br>Although Natural England welcome the above commitment, further expansion of the benthic surveys outside of core reef areas across the development site, including scour protection and cable protection would be welcome, particularly in designated sites. This would ascertain whether construction impacts have been avoided through the proposed mitigation measures and determine if there has been any recovery. Geophysical surveys should be adequately ground truthed for *Sabellaria spinulosa* using drop down video and grab samples. This should be reflected in a licence condition within the DML.<br><br>Furthermore, it is stated in our written representations (6.4.17 (a)) that Natural England is concerned that only one swath bathymetry survey at year 1 will not be sufficient and further targeted surveys within designated sites, such as Goodwin Sands pMCZ, should be added to allow any potential effects of cable burial and cable protection to be monitored. Natural England welcome further engagement with the applicant on this issue. | and confirms that the geophysical survey would cover the full development area, including where scour protection has been deployed, not just where biogenic reef is identified. However, the Applicant maintains that one year of surveys will be sufficient as stated in the Applicant's response to this question. |

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| | | | monitoring which confirmed limited value for broadscale benthic monitoring.<br>With regards biogenic reef monitoring the Applicant considers that post-construction monitoring to measure the presence of biogenic reef is only appropriate where biogenic reef is identified within the array area or OECC during the pre-construction surveys as this would then provide evidence of the impact of construction on the reef features and of the recovery of the features. Post-construction monitoring for biogenic reef where no reef has been identified pre-construction is considered to be overly onerous on the Applicant as it would not serve any purpose in confirming the predictions made within the ES. On multiple other offshore wind farm projects that had a requirement for post-construction monitoring for sensitive benthic habitats, this condition has been varied post-consent following pre-construction surveys that have confirmed the lack of any biogenic reef features to remove the need for post-construction monitoring. Therefore, the Applicant considers that any wording of a condition requiring post-construction monitoring for biogenic reef should have the caveat that this only take place where biogenic reef is identified in the pre-construction surveys or in areas identified as core reef through the Biogenic Reef Mitigation Plan (*ibid*). | | |
| 1.1.31. | The Applicant | Benthic Ecology: Construction Effects | A. The assessment has grouped the total volume of sediment that may | No further response received from other Interested Parties | No response required from |

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| | | Section 5.8 of APP-046 sets out the key parameters for the assessment of effects on benthic ecology and Table 5.10 presents the worst case scenario that has been defined for the main potential effects assessed, in line with the Rochdale Envelope approach.<br><br>a) In respect of table 5.10 of APP-046, please can the applicant confirm how the impacts of deposition of sediment from 'pre sweeping', in terms of temporary habitat loss and disturbance, has been taken into account as part of the assessment?<br>b) Please could the applicant respond to the specific points raised by NE in respect of the scale of deposition material, and the effects of that material resulting from sandwave clearance as described at 5.10.33 of APP-046, where it is stated that "The impacts of sediment deposition are not known at this stage as the volume of material that may need to be | be disturbed through any construction method as outlined in Table 5.10 of Volume 2, Chapter 5: Subtidal Benthic and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5) of the ES and then considered the impacts of this total volume of material in terms of the impacts from increased suspended sediment concentrations (SSC) and sediment deposition in the assessment, including those from pre-sweeping. Sediment deposition from dredging (i.e. released at the sea surface) is not considered to result in temporary habitat loss as the depth of sediment expected to result will not prevent use of the habitat by those species that are present. This is particularly relevant for the infaunal species present which are all identified within the assessment to be tolerant of smothering by sediment.<br><br>Furthermore, there are high levels of natural sediment transport within the area around Thanet Extension and all species can tolerate variations in SSC and the degree of sediment deposition. Consequently, the sediment released from dredging during pre-sweeping will not result in temporary habitat loss or disturbance as there will be no change in the use of these habitats by those species present. As such, the only consideration of temporary habitat loss and disturbance from pre-sweeping is within the physical footprint of the pre-sweeping which is considered within direct | | Applicant |

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| | | removed is unknown." | disturbance.<br><br>B. The Applicant notes the specific points raised by Natural England on this issue and has responded in full within the Applicants Response to Natural England's Relevant Representations (Appendix 1 of the Applicant's Deadline 1 Submission). In summary, the total volume of material displaced during the construction phase includes that from sandwave clearance (sandwave clearance will result in the removal of up to 1,440,000 m3 of sediment) as described in Table 5.10 of APP-046 and has been taken into consideration in the assessment in a qualitative manner.<br><br>Furthermore, the assessment goes identifies that any impacts from sediment deposition will be of a temporary and short-term nature and that appropriate buffers will be placed around any habitats of conservation importance (to be agreed post-consent with Natural England through the Biogenic Reef Mitigation Plan) to prevent any smothering of these habitats. | | |
| 1.1.32. | The Applicant | Benthic Ecology: Operation and Maintenance Effects<br>APP-042 describes a number of maintenance activities in respect of the offshore infrastructure. The effect of these activities does not appear to have been carried | A. The effects of the relevant maintenance effects have been identified within Table 10.5 of Volume 2, Chapter 5: Subtidal Benthic and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5) of the ES and consequently carried through to the assessment in Section 5.11 (PINS Ref APP-046/ Application Ref 6.2.5). It is the Applicants position therefore that no further | No further response received from other Interested Parties | No response required from Applicant |

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| | | through to the benthic ecology chapter (APP-046).<br><br>a) Please could the applicant provide an assessment of the effects of these maintenance activities on benthic ecology.<br>• Please include details of the maximum design scenario assessed in line with Table 5.10 of APP-046. | assessment is required. The Applicant notes that whilst Table 10.5 of APP-046 has not duplicated all parameters presented within Volume 2, Chapter 1: Project Description (Offshore) (PINS Ref APP-042/ Application Ref 6.2.1) the assessment is fully based on those parameters. Specifically, the assessment identifies the activities that will take place (e.g. cable repairs along the export cable) and the determination of the magnitude of the effect is noted to be no greater than that of the construction phase as the scale of any works will be smaller. This leads to confirmation of the effects for maintenance activities being of minor adverse effect, which is not significant in EIA terms.<br><br>B. For ease of reference, full details of the maximum design scenario for maintenance activities is provided within Annex A of Appendix 1 to the Applicant's Deadline 1 Submission – Project Description Audit note. | | |

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| 1.1.33. | The Applicant, Natural England and the Marine Management Organisation | Benthic Ecology: Post-Construction Monitoring<br>Section 5 of [APP-149] states that post-construction monitoring will consist of geophysical surveys of the whole development site, but Table 5.5 of APP-046 states that post-construction monitoring will only be undertaken where core reef is identified within the order limits during pre-construction surveys. The Marine Management Organisation (paragraphs 5.5 -5.8 of its representation) raises concerns with this approach and the methodology proposed for defining core reef. In addition, the Marine Management Organisation questions whether there is sufficient evidence to demonstrate that only one year of post-construction monitoring is sufficient and recommends post construction monitoring is extended to three years.<br><br>a) Could the applicant | A. The Applicant wishes to note that geophysical monitoring in the context of the Thanet Extension post-construction phase forms dual purposes which should be distinguished from one another but utilise the same data. The Applicant can therefore confirm that monitoring of benthic habitats will be limited to those areas of relevance to the sensitive habitats being monitored, i.e. biogenic reef plans. The Applicant can also confirm however that geophysical monitoring will be conducted across the whole area in which construction was undertaken for the purposes of ensuring other features (such as archaeological features) have been avoided and that the project has been installed as expected (i.e. cables buried, cable protection installed where predicted, scour protection installed where predicted etc.<br>B. The Applicant has noted the MMO (and Natural England as the relevant Statutory Nature Conservation Body) relevant representation and further comments provided on the Biogenic Reef Plan. A revised Biogenic Reef Plan (Version B Appendix 43) has been submitted to Natural England for further comment and the subsequent revision (RevB) has been submitted with the Deadline 1 submissions for agreement.<br>C. The monitoring strategy laid out in the Saltmarsh Mitigation, Reinstatement and Monitoring Plan (PINS Ref APP-147/ Application Ref 8.13) has been informed by the data | Natural England's response:<br><br>Natural England welcomes the clarification requested by the examining authority from the applicant in point a.<br><br>With regards to point c, and as stated above, Natural England would like to see:<br><br>□ Further expansion of the benthic surveys outside of core reef areas across the development site, including scour protection and cable protection would be welcome, particularly in designated sites. Geophysical data must be ground truthed using drop down video and grab samples to provide adequate benthic monitoring.<br><br>c) Natural England is concerned that only one swath bathymetry survey at year 1 will not be sufficient and further targeted surveys within designated sites, such as Goodwin Sands pMCZ, should be added to allow any potential effects of cable burial and cable protection to be monitored. We would like to retain the provision of three years of surveys in case recovery is not as suspected. However, if recovery has been good then discussions on the need for further surveys can be held. | The Applicant notes this response and considers that the Applicant's response to Natural England's Relevant Representation at Deadline 1 addresses these concerns, alongside the updated Biogenic Reef Mitigation Plan which was submitted at Deadline 1. |
| | | | | Marine Management Organisation's response:<br><br>The MMO has concerns regarding using the Core Reef approach at Thanet Extension due to the limited data available. The MMO queries the suitability of the characterisation survey as a pre-construction survey which was not designed to target areas of biogenic reef, as opposed to a specific survey designed to use the acoustic data to identify areas of potential reef and ground truthing these areas with video. The MMO understands that this will only be undertaken as part of the pre-construction survey, therefore there will only be one year of suitable data to use in the | The Applicant notes this response and considers that the Applicant's response to Natural England's Relevant Representatio |

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| | | please clarify the approach to post-construction monitoring in this regard?<br>b) Please could the applicant respond to the Marine Management Organisation's concerns about the methodology for defining core reef.<br>c) Please could the applicant explain how the proposed monitoring strategy set out in APP-147 and APP-149 is sufficient to understand the longer term effects of the proposed development?<br>• Comments from Natural England and the Marine Management Organisation are also invited on this point. | collected during the post-construction of the saltmarsh for TOWF (within a connected area of saltmarsh to that assessed for Thanet Extension). The TOWF surveys clearly demonstrated complete recovery of the saltmarsh within the timescales anticipated for the Thanet Extension surveys. With complete recovery demonstrated, there will be no long term effects from the proposed development on the saltmarsh. In the unlikely scenario that recovery is not complete at the end of the monitoring period, a mechanism for monitoring recovery of the saltmarsh will be agreed with the MMO and Natural England as appropriate.<br>With respect to the Biogenic Reef Mitigation Plan, the purpose of the monitoring is to confirm that there have been no physical impacts from construction on the core reef features. As such, where the monitoring confirms this, there would not be any longer terms effects from the proposed development. If impacts are discovered as part of the monitoring, a way forward would be agreed with the MMO and Natural England. | core reef assessment.<br><br>The MMO suggest that all types of reef should be identified during the pre-construction survey, and the MMO is consulted on the results to inform and agree that all appropriate areas of 'reef' have been identified.<br><br>The MMO also considers that a single year of post construction monitoring is not sufficient to understand the long term impact of the proposed development, and suggest that monitoring is undertaken over at least three (non-consecutive) years.<br><br>The MMO required more evidence to justify whether the approach is appropriate and hopes to continue to discuss this with the applicant to reach agreement on the monitoring approach. | n at Deadline 1 addresses these concerns, alongside the updated Biogenic Reef Mitigation Plan which was submitted at Deadline 1. |
| 1.1.34. | The Applicant | Benthic Ecology: Decommissioning<br>[APP-046] recognises that direct loss of benthic species and habitats could occur as a result of removal of foundations during the decommissioning phase. | The revised draft Order submitted at Deadline 1 includes a Decommissioning condition in both of the deemed marine licenses (Schedule 11, Condition 20 and Schedule 12, Condition 19). This condition requires the undertaker to submit a plan for the carrying out of decommissioning activities to the MMO for approval at least six months before the intended start of decommissioning. The plan produced in | No further response received from other Interested Parties | No response required from Applicant |

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| | | • Could the applicant please confirm whether or not it deems it appropriate to include a condition within the DMLs requiring that a survey of any species, habitats and reef structures present on the foundation structures is undertaken prior to decommissioning. | accordance with this condition will include the details of any surveys, which requires the approval of the MMO prior to any decommissioning being undertaken. As such, the condition as currently worded is drafted very widely, requiring as it does any necessary plans (including survey work to demonstrate the appropriateness of those plans) to be submitted to, and approved by, the MMO. Therefore the Applicant does not consider it appropriate to include such an element of specificity in the draft DCO, when the decommissioning plan provides for this. | | |
| 1.1.35. | Natural England, Marine Management Organisation and all IPs | Subtidal and Benthic Intertidal Habitats: In-Combination Assessment<br>In respect of the Subtidal and Benthic Intertidal Habitat in-combination assessment, paragraph 8.2.4 of [APP-031] states that "…it is considered that there is potential for LSE in-combination with Thanet Extension. The potential for such an effect will vary, depending on parameters such as the timing of works and the nature of those works, | The Applicant would like to take this opportunity to clarify the statement made in paragraph 12.2.1 of the Report to Inform Appropriate Assessment (RIAA) (PINS Ref APP-031/ Application Ref 5.2). Table 12.2 of the RIAA (PINS Ref APP-031/ Application Ref 5.2) screens the sites identified as having the potential for an in-combination Likely Significant Effect (LSE) based on the potential for a temporal overlap with the construction, operation and decommissioning stages of Thanet Extension. It is in Table 12.2 that it has been identified that, due to there being no temporal overlap or the chances of a temporal overlap being very low, and all effects on benthic receptors being temporary, there will be no potential for an in-combination effect with Thanet Extension. Specifically, the disposal sites are either for construction works for Nemo | Natural England's response:<br><br>As stated in our written representation, further consideration needs to be given to impacts, sensitivity and recoverability of habitats to deposition of material from sandwave clearance / pre-sweeping including the habitat and size of area affected. Disposal areas should avoid protected sites and areas of habitats of conversation interest.<br><br>For completeness, this aspect of the assessment should include an in combination assessment with other known dredging and disposal activities for the pressure of siltation/sedimentation. Natural England notes that impacts from suspended sediments associated with the Nemo cable do not coincide with the proposed development, and is therefore content for this to be screened out of further assessment.<br><br>While it may be difficult to predict future dredging and disposal volumes and timings, a check of previous activity is possible and could be used as a basis for undertaking a reasonable assessment going forward. | The Applicant notes this response and considers that the Applicant's response to Natural England's Relevant Representation at Deadline 1 addresses these concerns, alongside the updated Biogenic Reef Mitigation Plan which was submitted at Deadline 1. |

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| | | with these to be considered in full in the determination of AEoI". Paragraph 12.2.1 of [APP- 031] then explains that no plans of projects have been scoped into the in-combination assessment (of AEoI) for Subtidal and Benthic Intertidal Habitats.<br><br>• Are Natural England, Marine Management Organisation and any other parties satisfied that an in-combination assessment of AEoI for Subtidal and Benthic Intertidal Habitat effects has not been undertaken on the basis that no relevant plans or projects are identified (paragraph 12.2.1 of [APP-031])? If not, why not? | Interconnector which has now completed construction or primarily for dredging at Ramsgate harbour and it is highly unlikely on the basis of the proximity of the cable route to the harbour that any dredging works would occur during cabling installation or operational works on Thanet Extension. As such no plans or projects have been taken forward to an assessment of the potential for an in-combination adverse effect on integrity on any of the relevant sites.<br><br>The Applicant notes that an updated RIAA will be submitted for Deadline 2 and this update will include increased clarity on this point. | MMO's response:<br><br>Table 8.1 in APP-031 identifies the plans and projects, and their proximity to designated sites that should be considered in-combination with Thanet Extension (TE) for benthic subtidal and/or intertidal habitats. Chapter 12 of APP-031 has assessed whether any of these plans or projects screened in for assessment of in-combination effects with TE are likely to have Adverse Effects on Integrity (AEoI) of the designated sites.<br><br>Paragraph 12.1.7 states that 'for a plan or project to have a potential in-combination effect with Thanet Extension, there needs to be sufficient information on which to base an assessment and the construction timeframe needs to be such that there is potential for temporal overlap of effect(s).'<br><br>According to table 12.2 there will be no temporal construction overlap with Nemo Interconnector cable. There is potential for permanent habitat loss only if cable protection is used within a designated site, but it is not currently known whether or not this will occur. For the open disposal sites, there is limited information on the volumes and timings for disposal as disposal is intermittent and volumes are unknown in advance. Therefore, the Applicant is unable to determine where or not the use of the sites will overlap with the impacts from the construction of Thanet Extension.<br><br>The MMO acknowledges the areas of uncertainty identified by the applicant, however defers to the advice of the Statutory Nature Conservation Bodies (SNCBs) for advice on HRA. | The Applicant notes this response. |
| | | | | We believe that the proposed (and consented) dredging of an area of the Goodwin Sands for the Dover Harbour Port Development needs to be considered for incombination assessments. The decision to consent to the dredging of this area was announced by the MMO on 26th July 2018. The area to be dredged is located close to the Thanet Extension site and will impact subtidal benthic habitats. | The Applicant notes that the consent for this activity was awarded post-submission of the Thanet Extension Application. However, the Applicant refers the ExA to the expected timescales for the dredging |

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| | | | | | at Goodwin Sands, which is scheduled to be completed by end of 2019. Therefore, there will be no temporal overlap between Thanet Extension and the dredging works at Goodwin Sands, which would have then resulted in the dredging being screened out of the in-combination assessment and would consequently not change the conclusion of no AEoI. |
| 1.1.36. | The Applicant | Saltmarsh Habitat: Study Approach<br>Table 5.9 of Chapter 5 of Volume 2 of the Environmental Statement [APP- 046] provides details of the Valued Ecological Receptors within the project's benthic ecology study area. | A) The Applicant notes that the omission of saltmarsh from Table 5.9 of Volume 2, Chapter 5: Subtidal Benthic and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5) and agrees that this should have been included. However, the Applicant also notes that the importance of saltmarsh is described in paragraph 5.7.42 alongside the other features described in Table 5.9 (PINS Ref APP-046/ Application Ref | No further response received from other Interested Parties | No response required from Applicant |

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| | | a) Could the applicant please explain why Saltmarsh has not been included in this table?<br>b) Please could the applicant provide full details for Saltmarsh equivalent to those set out in Table 5.9. | 6.2.5) and the omission of saltmarsh in Table 5.9 did not affect the associated sensitivity of the habitat in the conclusions of the chapter.<br><br>B) The equivalent details for saltmarsh are as follows: Habitat summary – *Saltmarsh*; Representative biotope – *N/A*; Protection status – *SSSI*; Conservation status – *Protected feature within the Sandwich Bay to Hacklinge Marshes SSSI. Identified as a supporting habitat for the Thanet Coast and Sandwich Bay Ramsar. UK BAP Priority Habitat*; Justification and regional importance – *National - included as a protected feature of the Sandwich Bay to Hacklinge Marshes SSSI. International - supporting habitat of the Thanet Coast and Sandwich Bay Ramsar*. | | |
| 1.1.37. | The Applicant | Saltmarsh Habitat: Effects of Landfall Option 2<br>Under Landfall Option 2, the sea wall extension would result in the permanent loss of an area of inter-tidal Saltmarsh. Table 5.10 [APP-046] sets out the maximum design scenario assessed.<br>a) What is the evidential basis for the applicant's statement at paragraph 5.11.19 (APP-046) that the saltmarsh in this area extends between approximately 45 – 110 m in a seaward | The Applicant wishes to note that it proposes to withdraw Landfall Option 2 has been withdrawn from the project envelope. A document outlining the implications of this for the existing application material is in preparation and will be discussed with relevant stakeholders as part of the statements of common ground process, before submission at Deadline 2. In light of this there is no longer a scenario under which there will be permanent loss of saltmarsh as a result of the proposed project. The following answers have been provided for clarity, noting that the underlying basis for concern (Landfall Option 2) no longer exists.<br>A. The Applicant has undertaken a GIS analysis of the saltmarsh extent data provided by the Environment Agency. This is understood to be the best available data. Further | No further response received from other Interested Parties | No response required from Applicant |

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| | | direction from the location of the existing sea wall?<br>b) Please could the applicant provide full details of the basis upon which its statements about the quality of the saltmarsh habitat across the Pegwell Bay area, and the landfall location in particular, are made<br>c) Could the applicant please respond to the concerns of the Environment Agency that the seawall extension proposed under Landfall Option 2 could bisect the existing continuous saltmarsh habitat leading to its fragmentation.<br>d) Could the applicant please respond to the concerns of the Environment Agency and Natural England that the seawall extension would cause local erosion / scour of saltmarsh habitats immediately adjacent to it.<br>e) Please could the applicant respond to the Environment Agency's evidence about the value of Saltmarsh at Pegwell Bay in providing a food | reference has also been made to 2016 satellite data (Google maps via ESRI basemaps) to chart likely saltmarsh extent through reference to the delineation of the sea wall and the intertidal mudflats.<br>B. The basis upon which the statements are made on saltmarsh habitat quality is derived from a combination of intertidal survey, site visits, and the provision of information during the evidence plan process. The latter drew on information provided by Natural England and the Environment Agency which indicated that saltmarsh quality to the North of Pegwell Bay was of a higher quality than that to the south. The former (PINS Ref APP-081/ Application Ref 6.4.5.1 Annex 5-1 Export Cable Route Intertidal Report) provided provisional qualitative data on the extent of 'saltmarsh habitats', noting at paragraph 3.1 that saltmarsh hems the western fringes at the high shore of Pegwell Bay, with this illustrated at Figure 20. With regards site visits a number of informal site visits have been undertaken with the project team noting, and discussing with relevant parties during evidence plan meetings, that immediately adjacent to the seawall, and extending down the shore in an easterly direction the habitat is dominated by tall grasses, cord grasses, and the invasive saltmarsh species *Spartina* rather than low lying high value *Salicornia* saltmarsh. The presence of this species is noted by a number of sources, including the Environment Agency during | | |

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| | | source and refuge for a range of marine fish species<br>• Please explain how the impact of the permanent loss of saltmarsh on fish and fisheries has been assessed. | evidence plan meetings and the 'Thanet Coast North East Kent Marine Protected Area' network records.<br>C. The Applicant considers this question to no longer be relevant due to its proposal to withdraw Landfall Option 2 being withdrawn from the application envelope.<br>D. The Applicant also considers this question to no longer apply due to its proposal to withdraw as Landfall Option 2 has been withdrawn from the application envelope.<br>E. The Applicant has responded in detail to the Environment Agency's relevant representation in Appendix 1 of the Applicant's Deadline 1 submission. In brief the Applicant notes that whilst the saltmarsh clearly has ecological value the importance of it, as presented within the ES, is based on its designation as a SSSI and Ramsar habitat. Saltmarsh in other areas within the UK, for example the Wash, forms Annex I designated habitat as a result of its quality, this is an important differentiation that has been captured within the application documents submitted in support of the Thanet Extension proposal.<br>F. The Applicant notes that this question is no longer considered to be relevant as Landfall Option 2 is proposed to be has been withdrawn from the application envelope. | | |
| 1.1.38. | The Applicant and Natural England | Mitigation of Effects on Intertidal Habitats: Saltmarsh Mitigation, Reinstatement and Monitoring Plan | A) The Applicant notes the relevant representation made by Natural England [RR-053] and is content to update the Saltmarsh Mitigation, Reinstatement and Monitoring Plan | Natural England's primary concern regarding the permanent loss of saltmarsh as a supporting habitat was associated with option 2, and we understand that the applicant is no longer pursuing this option. As highlighted in our answer to question 1.1.40. though, due to experience from the recent Nemo installation there is some risk associated with the uncertainty of saltmarsh recovery post construction even if best practice measures are employed. This should be factored into the | The Applicant notes this response and has, in line with Natural |

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| | | Paragraphs 11.2.20, 11.2.22 and 11.2.25 of [APP-031] state that on the basis of the Saltmarsh Mitigation, Reinstatement and Monitoring Plan (SMRMP) [APP-147], no potential for AEoI to the intertidal habitats used by the designated features of the Thanet Coast and Sandwich Bay SPA and Ramsar sites exist for the project alone (in relation to temporary habitat loss or disturbance during construction and decommissioning). In their relevant representation, Natural England raises a series of "further mitigation and management measures" that they would like to see implemented.<br><br>a) Could the applicant respond as to whether or not it intends to incorporate these measures into the SMRMP?<br>b) In light of these additional measures, could Natural England confirm its residual potential concerns (in terms of AEoI) relate to the permanent loss of | with the recommendations made with the exception of point a which refers to working during summer months to coincide with low tides and dry months. The Applicant wishes to clarify that 'spring tides are low [within the driest months of year]' is not however considered to be accurate as there is not a clear corollary that dry months result in a reduced spring tide height. Furthermore, the Applicant has already committed to a seasonal restriction between October and March which is understood to be the most sensitive period for the SPA (and therefore the supporting habitats). A revised Saltmarsh Mitigation, Reinstatement and Monitoring Plan will be submitted at Deadline 2 following further discussion with Natural England and the Environment Agency.<br>B) The Applicant wishes to note that the mitigation and management measures referred to in the Saltmarsh Mitigation, Reinstatement and Monitoring Plan does not apply to areas of temporary disturbance. The Applicant also wishes to note that decision to remove 'landfall Option 2'means that there will be no predicted permanent loss of saltmarsh. Landfall Options 1 and 3 do not result in a permanent loss of saltmarsh. | appropriate assessment.<br>In terms of residual concerns relating to invertebrates, please see questions 1.1.47 and 1.1.48 where Natural England has expanded on the progress made on determining any effects upon invertebrate species of importance.<br>However, Natural England's concerns regarding permanent loss were associated with option 2, and we understand that the applicant is no longer pursuing this option. | England's response provided further comment to response 1.1.40 |

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| | | habitat and assessment of an additional species in the Ramsar invertebrate assemblage (bug Orthotylus rubidus)? | | | |
| 1.1.39. | The Applicant, Natural England, Environment Agency, Kent Wildlife Trust, Kent County Council, Thanet District Council and Dover District Council | Saltmarsh Mitigation, Reinstatement and Monitoring Plan: Effects of Permanent Loss of Saltmarsh<br>The applicant's Saltmarsh Mitigation, Reinstatement and Monitoring Plan [APP-147] relates to the temporary construction effects of the export cable. The document states (para 1.2.1) that 'any permanent loss of saltmarsh will be addressed in a separate document through further consultation with the relevant stakeholders'.<br><br>a) With regard to this separate document, please could the applicant outline:<br>• its scope and purpose<br>• its current status<br>• the intended timetable for production<br>• whether or not it is intended to be submitted during this examination<br>• any consultation | A. The Applicant can confirm that Landfall Option 2 is proposed to be has been removed from the proposed project consent 'envelope. As such the reference to an additional plan/document to address permanent loss of saltmarsh is no longer necessary and as such subsequently the reference will be removed from the Saltmarsh Mitigation, Reinstatement and Monitoring Plan. | A number of parties responded to this question, however using Natural England's response as generally representative it is welcomed that Option 2 is no longer part of the proposed design envelope | The Applicant has no further comment to make. |

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| | | undertaken or planned; and,<br>• how the measures contained therein would be secured.<br>b) The views of the local authorities, Natural England and the Environment Agency on the above points (i-vi) are invited. | | | |
| 1.1.40. | The Applicant, Natural England, Environment Agency, Kent Wildlife Trust, Kent County Council, Thanet District Council and Dover District Council | Saltmarsh Mitigation, Reinstatement and Monitoring Plan: Recovery Assumptions<br>NE's relevant representation has referred to the experience of the recent construction of the NEMO link, from which it states that the saltmarsh has been slower to recover than expected.<br><br>a) In this context, how would the need for further post-construction mitigation (if required, depending on the success of the restoration) be determined and delivered within the provisions of the Thanet Extension Offshore Wind Farm DCO?<br>b) What are the potential options for managing this | A. The Applicant can confirm that a revised Saltmarsh Mitigation, Reinstatement and Monitoring Plan will be submitted at Deadline 2. The revision will account for the additional measures requested by Natural England in their Relevant Representations and, where possible, the lessons learnt from the Nemo Interconnector. It is noted that works are still ongoing for the Nemo Interconnector project and as such it may be necessary to delay submission to fully account for any lessons learnt. In the current understanding of the Applicant the updates are likely to be limited to reference to topographical survey of the saltmarsh and measures taken to ensure compression and/reduction in height is minimised through appropriate reinstatement.<br><br>The mitigation measures proposed within the Saltmarsh Mitigation, Reinstatement and Monitoring Plan, and additional measures to be included in the revised document, are in the view of the Applicant considered to be appropriate and, deliverable. These measures are | NE<br>The SMRMP states "Surveys will be undertaken on a monthly basis for 1 year following installation and once yearly up to 5 years' post-installation, or until recovery is agreed with Natural England in line with the SMRMP." The mechanism …"until recovery is agreed with Natural England…" will allow Natural England to determine the level of recovery each year and request further surveys or other mitigation measures if recovery has not been acceptable. The SMRMP is conditioned with the DCO and therefore the developer is bound to these commitments.<br>b) It is quite hard to determine what the potential options for mitigation would be considering the uncertainty around the potential landfall options and how the landfall area will react to the construction works. This has been proven by the relatively quick recovery displayed by the original Thanet cable and the slow recovery displayed by the NEMO cable. What is certain is that the SMRMP needs to be finalised and agreed with the relevant stakeholders and a thorough pre-construction baseline survey needs to be carried out so impacts can be measured. There is a risk that no mechanisms can be identified to further recovery in the event that recovery is slow / does not happen. However, Natural England advises that if temporary disturbance of saltmarsh is permitted provision should still be made to ensure that management options can be explored with the developer and implemented where possible post construction.<br>MMO<br>Response to b) – the MMO advises that saltmarsh reinstatement would be secured in the Saltmarsh Mitigation, Reinstatement and Monitoring Plan.<br>DDC<br>DDC would refer to Natural England and Kent Wildlife Trust to address these aspects of the mitigation strategy due to their expertise on ecology. As above, it would be expected that post-construction mitigation is addressed within the provisions of the DCO.<br>EA<br>The key issue that arose from the NEMO link saltmarsh disturbance and restoration was the change to the topography along the cable corridor. Saltmarsh communities are extremely sensitive to change in bed level as this<br>affects the extent and duration of tidal emersion. The reinstated sediment<br>that was excavated for the cable trench settled to a level below the<br>adjacent saltmarsh bed level. This was compounded by the impact of | The Applicant accepts the need to provide the SMRMP and the DCO has always been drafted to specifically secure it through certification by the Secretary of State (article 35). The Applicant also agrees that a thorough baseline survey should be carried out and the dML provides for pre- and post-construction surveys (Schedule 12, Part 4, conditions 13 and 15) to be |

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| | | eventuality? | secured in the submitted plan and associated conditions within the dMLS at Schedule 11, Condition 15 and Schedule12 (Part 4 conditions, Condition 1315)12 of the DCO. The need for the mitigation measures to be implemented would be determined through consultation with Natural England and the MMO, as the relevant SNCB and regulator respectively.<br>B. The Applicant would draw the ExA's attention to the existing monitoring arrangements in Pegwell Bay for the existing Thanet offshore windfarm. The monitoring was undertaken until agreement was reached that the saltmarsh had recovered to pre-construction quality. This stage of recovery was reached after two years. If at this stage recovery for TEOWF was not complete the monitoring would, in consultation with Natural England and the MMO, be extended for an appropriate period. | compaction by the machinery in the working corridor. This resulted in a tidal breach of the saltmarsh that is damaging the surrounding habitats. Therefore we suggest that the Saltmarsh Mitigation, Reinstatement and Monitoring Plan should cover the potential for change to the current topography and have a plan with a clear timetable to assess the degree of level change pre/post construction and if the levels are significant, an action plan is required to increase the saltmarsh level back to an acceptable level.<br>KCC<br>This needs to be addressed within the Saltmarsh Mitigation, Reinstatement and Monitoring Plan. It needs to clarify the minimum number of years that saltmarsh monitoring will be carried out and detail the measures to be implemented if the habitat establishment has not occurred at the end of the time period. There will be a need for funding information for the re-establishment of the saltmarsh, which would need to be at the applicant's expense.<br>KWT<br>In accordance with the Society for Ecological Restoration, ecological restoration should „seek the highest and best recovery outcomes to both compensate for past damage and to progressively effect an increase in the extent and healthy functionality ecosystem" and we believe this should be the aim for the saltmarsh at Pegwell Bay. Monitoring the restoratoration of the saltmarsh following the disturbance caused by the construction phase will be imperative. The applicant could include some or all of the key ecosystem attribute targets for establishing the success of ecological restoration, including determining: an absence/ cessation of threats; restoration of physical conditions; presence of desirable species; reinstatement of spatial habitat diversity; recovery of ecosystem functionality (e.g. high quality saltmarsh).<br>We also advocate longer-term monitoring of the saltmarsh following construction, e.g. 15-20 years rather than 5 has been recommended for freshwater marshes.<br>Taken from Denning, 2017, mitigation measures to be considered and incorporated into the DCO could include: • use option 1 - HDD construction method • locate work and storage compounds outside sensitive habitats; • use low-ground pressure vehicles with caterpillar tracks to distribute vehicle weight more evenly; • use trackways (e.g. aluminium panels in saltmarsh) to distribute vehicle weight. Underlay trackways with a suitable grade geotextile membrane. Do not leave the trackway in-situ; • for construction equipment (e.g. excavators) use approved biofuels and avoid refilling when working in saltmarsh; • ensure all contractors have received a toolbox talk on the site ecology, including information on why a site is important, and how they can help minimise impacts on the habitats and species present; • Restrict the number of vehicle movements, and limit the number of people accessing the site, even along trackways, to minimise vegetation trampling; • where trackways are laid over vegetation, minimise the number of days it is left in-situ so to prevent complete die-back of plants; • reduce noise by, for example turning off vehicle engines when stationary. This can minimise disturbance to birds when feeding or resting in and around the saltmarsh and surrounding habitats.<br>We believe that there may also be opportunities to enhance the saltmarsh habitat at Pegwell Bay.<br>NLLL | agreed with the MMO in consultation with the relevant nature conservation bodies. The SMRMP makes provision for the implementation of mitigation measures which will ensure that there are no adverse effects on the integrity of the European site. This will be achieved by the verification of saltmarsh conditions through pre-commencement surveys, so as to confirm the baseline position before any construction works take place. Post-construction monitoring will then allow the Applicant, in conjunction |

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| | | | | NLL notes the relevant representation from Natural England. However, saltmarsh monitoring is ongoing and is subject to a lengthy period of monitoring controlled by a planning condition. No interim results have been shared with Natural England, and NLL is unaware of any Natural England officers undertaking their own surveys of the site.<br>Therefore, NLL is unsure as to what evidence Natural England has to substantiate its claim that the Saltmarsh isn't recovering well.<br>TDC<br>Thanet District Council has no comments to make on this matter as it does not have sufficient expertise in saltmarsh recovery. The Council defers to Natural England's findings and knowledge on this matter. | with stakeholders, to measure recovery and implement identified mitigation mechanisms, such that targets derived from the baseline study are reached and agreed restoration is secured |
| 1.1.41. | Natural England | Information to Inform an Appropriate Assessment: Conservation Objectives In light of the references to conservation objectives, site improvement plans and supplementary advice for sites considered to be likely to experience significant effects as a result of the proposal (provided in section 9 of the RIAA [APP-031], can NE confirm that all the relevant information is correct such that an appropriate assessment could be made in light of those conservation objectives? | The information was considered correct and up to date at the time of writing (June 2018) (PINS Ref APP-031/ Application Ref 5.2). It should be noted that the information in section 9 of the RIAA (PINS Ref APP-031/ Application Ref 5.2) is being revisited and updated for the revised RIAA (to be submitted at Deadline II). In particular, it has been confirmed that the French sites do not have conservation objectives, that the Southern North Sea cSAC should be referred to as cSAC/SCI, that additional documents are available for the Outer Thames Estuary SPA (SPA citation and Conservation Objectives) and that the Flamborough and Filey Coast is now a SPA (no longer pSPA) and has been merged with the Flamborough Head and Bempton Cliffs SPA. These changes/additions have been reflected in the revised RIAA to be issued at Deadline II. None of these changes alter the conclusions of the assessment. | Natural England's response:<br><br>Natural England can confirm that the information is correct. We also point the examining authority to section 4 of our written representation which also provides additional information on sites that are could experience significant effects as a result of the proposal.<br><br>If additional information is needed, or Examining Authority feels something is missing or new information has come to light we would be happy to provide it at the examiners request. | The Applicant notes this response and has responded in full to Natural England's Written Representation |

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| 1.1.42. | Natural England and the Applicant | Information to Inform an Appropriate Assessment: Flamborough and Filey Coast pSPA<br>With regard to the Flamborough and Filey Coast pSPA, the ExA is aware that on 23 November 2018 Natural England's published recommendations to DEFRA2 regarding the outcomes of a consultation process on the formal designation of this SPA (as well as the Flamborough Head pSAC, which would not appear to have been identified as being potentially affected by the proposed development).<br><br>• Can Natural England and the Applicant please comment on the implications of this consultation outcome in respect of:<br>i. The status of the pSPA;<br>ii. Implications on the assessment undertaken | With respect to the three questions:<br><br>i. It is the understanding of the Applicant that the site is now a classified SPA as evidenced by:<br>a. The 'classification citation' of the Flamborough and Filey Coast SPA (accessible[2]) that bears the date of registration as an amendment of 23 August 2018 and the text "*The site was extended and renamed Flamborough and Filey Coast SPA on 23rd August 2018*".<br>b. The map of the boundary of the Flamborough and Filey Coast SPA, published by Natural England as a pdf format map (accessible[3]), that bears the text "*SPA Extension Classified by the Secretary of State for Environment, Food and Rural Affairs. Date: 23/08/2018*"<br><br>ii. The site was assessed (See section 9.14 of the RIAA (PINS Ref APP-031) as if it were a classified SPA in accordance with Government policy. As a result the assessment does not change and the conclusions of the assessment do not change.<br><br>iii. The assessment carried out was based on the conservation objectives published by Natural England in 2014. The conservation objectives published by Natural England in 2018 do not differ other than to be re-phrased without the words 'potential' and 'may'. As a result the assessment does not | i) With regards to the status of the pSPA please section 5.2.3 of Natural England's Written Representations. The following is taken from that section: "The Flamborough and Filey Coast SPA has now been classified as an SPA under the provisions of the Birds Directive. The public consultation concluded in April 2014 and the minister publicly noted the intention to classify the site as an SPA in late 2018.<br><br>ii) Once a European site is a proposed Special Protection Area (pSPA) it is considered to have a material consideration and is afforded the same level of protection as fully designated SPAs. The applicants have identified this within the Report to Inform Appropriate Assessment and as the site is treated equally, as if it was fully designated or not, there should be no implications on the assessment or conclusions the applicants have reached. However, please note that the seabird assemblage total given on the pSPA citation has increased from 215,750 to 216,730 (see http://publications.naturalengland.org.uk/publication/5400434877399040?category=5758332488908800). This reflects revised calculations regarding the number of puffin present at the site (the contribution of this species to the assemblage having increased from 980 to 1960). This revision is not likely to affect the applicant's conclusions regarding impacts on the seabird assemblage feature. For the SPA qualifying species, given that the Applicant, has carried out an assessment of impacts on all of these as pSPA features, the change in status neither requires additional information from the applicant regarding these. Nor does it affect Natural England's advice. Furthermore, Flamborough Head pSAC should not be affected by this development.<br><br>iii) Currently only high level conservation objectives for this site have been published, which provide a framework for informing any Habitats Regulations Assessment. These high level objectives have been provided at deadline 1. Supplementary advice to support the conservation objectives is not currently available, however may become available further into the examination process and will be provided by Natural England in due course should this be the case. | The Applicant considers that no further action is required in response to the Examining Authority's question on this topic, as Natural England agree that as the pSPA was treated at the time that the application was submitted as if it was fully designated there are no implications for the assessment or the conclusions in the RIAA (PINS Ref APP-031/Application Ref 5.2). |

[2] http://publications.naturalengland.org.uk/publication/5400434877399040
[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/758629/flamborough-filey-coast-spa-final-area-map.pdf

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| | | by the applicant (and their conclusions); and, iii. Any other relevant matters that may have a bearing on the Secretary of State's ability to undertake an appropriate assessment in respect of the pSPA (such as revised conservation objectives). | change and the conclusions of the assessment do not change. The assessment carried out was based on the named seabird interest feature population figures published by Natural England in 2014. The named seabird interest feature population figures published by Natural England in 2018 do not differ. As a result the assessment does not change and the conclusions of the assessment do not change. It is noted that in light of the removal of landfall Option 2 from the proposed project design envelope the RIAA is being redrafted and submitted at Deadline II; all relevant stakeholders have been informed of this. | | |
| 1.1.43. | Dover District Council | Habitats Regulation Assessment: Cable Route Selection<br>Dover District Council's relevant representation [RR-029] questions whether sufficient information in relation to the cable route selection has been provided for an Appropriate Assessment to be undertaken.<br><br>• Please could Dover District Council explain the basis for raising this question and the specific nature of its concerns in this regard? | This matter is now the subject of agreement with DDC and is captured within the associated SoCG submitted at Appendix 3 of this Deadline 1 submission. | DDC<br>Although raised in DDC's Relevant Representation (RR-029), on further consideration of the applicants submitted Appropriate Assessment and associated Annexes it is considered that this matter has now been sufficiently addressed in the submission and DDC does not wish to raise any further concerns in relation to this aspect of the proposal. This position is confirmed in DDC's SoCG (Table 5 Page 25) with the applicants and DDC would refer to Natural England in respect of any further direction on this matter. (It can be confirmed that the initial concerns related to the above ground works to the cable route, but all above ground works in relation to the cable route and landfall options have now been removed from the application.) | The Applicant can confirm that this is agreed and has nothing further to add. |
| 1.1.44. | The Applicant | Marine Conservation Zone Assessment: Goodwin Sands<br><br>In its relevant representation [RR- | In its response to Natural England's' relevant representation [RR-053], the Applicant has outlined its position that a further MCZ Assessment for the Goodwin Sands pMCZ is not required. The then Goodwin Sands rMCZ was brought forward for formal consultation | No further response received from other Interested Parties | No response required from Applicant |

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| | | 053], Natural England highlights that the Goodwin Sands rMCZ is now a proposed Marine Conservation Zone (pMCZ). It is not satisfied that it can be concluded beyond all reasonable scientific doubt that the project would not hinder the conservation objectives of the Goodwin Sands pMCZ. Paragraph 5.3.3 of the MCZ Assessment [APP-083] states that "MCZs not designated or brought forward for consultation are not required to be considered however the Applicant has undertaken a proxy MCZ assessment for the Goodwin Sand rMCZ…". Chapter 6.2.5 of the ES [APP-046] also explains that… whilst the habitats in the vicinity of Goodwin sands are considered where appropriate the Goodwin Sands rMCZ has not been brought forward for consultation and is not therefore considered within this assessment or the associated MCZ assessment".<br><br>• Can the applicant | just before the Thanet Extension application and became a pMCZ after application in July 2018. However, an assessment (in the absence of any specific conservation objectives) was undertaken as part of the MCZ Assessment process (Volume 4, Annex 5-3: Marine Conservation Zone Assessment (PINS Ref APP-083/ Application Ref 6.4.5.3)). The assessment focused on the habitats and features present within Goodwin Sands pMCZ as assessed within the (Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref: 6.2.5) of the Environmental Statement) and found all potential effects to be of no greater than minor significance, including as a result of secondary deposition from sandwave clearance.<br><br>The nature of overlap between the Thanet Extension Offshore Export Cable Corridor and the Goodwin Sands pMCZ is partial and limited in extent (1.13km2) relative to the overall area of the pMCZ (277km2). All habitats and features within the cable corridor, including those in the area of overlap with the Goodwin Sands pMCZ have been appropriately considered. The MCZ Assessment (Volume 4, Annex 5-3: Marine Conservation Zone Assessment (PINS Ref APP-083/ Application Ref 6.4.5.3) of the Environmental Statement) concluded that any cable rock protection (if required) would become covered by surficial sediments within a matter of weeks to months, depending on local sedimentary deposition rates.<br>The habitats and features in the area of overlap are not expected to be sensitive to the level of increased sedimentary deposition resulting from cable installation activities. Indeed, the "Consultation on Sites | | |

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| | | please provide a revised Marine Conservation Zone Assessment to reflect the change in status from Goodwin Sands rMCZ to pMCZ after it was included in Tranche Three of MCZ consultation, which was announced on 8 July 2018. | Proposed for Designation in the Third Tranche of Marine Conservation Zones" for Goodwin Sands (DEFRA, 2018) concludes that renewable energy and cable activities are not likely to be damaging to the features of interest at this site.<br>In relation to biogenic reefs, DEFRA (2018) 1 identifies that there are no reef features within the area of overlap. Furthermore, the Applicant has committed to undertaking pre-construction surveys with micro-siting around any identified biogenic reef features. In addition, the Applicant has made a commitment to monitoring sensitive biogenic reef features identified. | | |
| 1.1.45. | The Applicant | Goodwin Sands pMCZ: Benthic Ecology<br>The ES does not clearly set out evidence to demonstrate that no benthic Features of Conservation Importance in the Goodwin Sands rMCZ would be affected by the proposed cable works.<br><br>• Please could the Applicant clarify the data sources used in arriving at the conclusion that no benthic Features of Conservation Importance in the Goodwin Sands rMCZ would be affected by the cable works, including site preparation works such as sandwave clearance, | The Applicant has considered all relevant available data sources in the baseline environmental characterisation including site-specific data in the cable corridor section that partially overlaps with the Goodwin Sands pMCZ. The sources used to inform the MCZ Assessment (Volume 4, Annex 5-3: Marine Conservation Zone Assessment (Application Ref 6.4.5.3) of the Environmental Statement) are as follows:<br>• Site-specific data collected for the Thanet Extension baseline characterisation (Figure 5.9 of Volume 4, Annex 5-3: Marine Conservation Zone Assessment (PINS Ref APP-083/ Application Ref 6.4.5.3) of the Environmental Statement);<br>• EU SeaMap broad-scale predictive habitats mapping (Figure 5.9 of Volume 4, Annex 5-3: Marine Conservation Zone Assessment (PINS Ref APP-083/ Application Ref 6.4.5.3) of the Environmental Statement);<br>• Goodwin Sands rMCZ subtidal verification data (Cefas, 2014) (Figure 5.10 of Volume 4, Annex 5-3: Marine Conservation Zone Assessment (PINS Ref APP-083/ Application Ref 6.4.5.3) of the | No further response received from other Interested Parties | No response required from Applicant |

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| | | and provide further explanation as to how this data has informed the assessment. | Environmental Statement);<br>• Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref: 6.2.5) of the Environmental Statement; and<br>• Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (PINS Ref APP-043/ Application Ref 6.2.2) of the Environmental Statement.<br><br>The baseline data indicated that the habitats present within the area of overlap with the Goodwin Sands pMCZ (predominantly clayey to silty sand, with fine to coarse sand and much smaller pockets of gravelly sand and sandy gravel). No circalittoral rock habitats were identified within the area of overlap. No Ross worm (*Sabellaria spinulosa*) reefs or blue mussel beds were identified as being present within the area of overlap with the Goodwin Sands pMCZ. *S. spinulosa* reefs are known to be non-sensitive to light increases in sediment deposition[4]. Therefore, the only features of conservation importance that could be affected by cable works, including site preparation works such as sandwave clearance are subtidal sand and subtidal coarse sediment.<br><br>The proxy MCZ Assessment for the Goodwin Sands pMCZ draws upon information from the Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref: 6.2.5) of the Environmental Statement, which itself draws upon | | |

[4] http://www.marlin.ac.uk/habitats/detail/377

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| | | | information from the Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (PINS Ref APP-043/ Application Ref 6.2.2) of the Environmental Statement. As detailed in paragraph 5.10.44 Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref: 6.2.5) of the Environmental Statement, "sandwave clearance and cable installation are likely to occur where the cable corridor passes through the Goodwin Sands rMCZ. The features of the rMCZ that may be affected include subtidal coarse sediment and subtidal sand. It is likely that any impacts from the construction works for Thanet Extension would be limited to tens to hundreds of metres from the source and would not result in the introduction of non-native sediments to the rMCZ. Therefore, it is considered that there will be no significant impacts on the features of the rMCZ." This assessment was also informed by the MarESA[5] assessments on benthic habitats for the impacts of increased Suspended Sediment Concentrations (SSC) and smothering. For the biotopes identified within the area of overlap between the export cable corridor and the Goodwin Sands pMCZ, the sensitivity assessments concluded that these biotopes were not sensitive or had low sensitivity to the impacts of changes to SSC, light smothering and heavy smothering (Table 5.14 of Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref: | | |

[5] https://www.marlin.ac.uk/habitats/

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| | | | 6.2.5) of the Environmental Statement). | | |
| 1.1.46. | Marine Management Organisation, the Applicant | Goodwin Sands pMCZ: Other Consents<br>Kent Wildlife Trust's relevant representation [RR-048] refers to an extant consent to dredge part of the Goodwin Sands pMCZ.<br><br>a) Could the Marine Management Organisation please provide a copy of that consent, including a map showing the extent of the permitted works.<br>b) Please could the applicant clarify to what extent the ES has evaluated the cumulative impacts of the proposed dredging activity as part of the assessment for Thanet Extension Offshore Wind Farm? | The extant consent to dredge part of the Goodwin Sands pMCZ refers to the Dover Harbour Board marine license to use dredged material from the south Goodwin Sands as for land reclamation and berth construction as part of the Dover Western Docks Revival project. This consent was granted on 26th July 2018.<br><br>Appendix 1 of Volume 1, Annex 3-1: Cumulative Effects Assessment (PINS Ref APP-039/ Application Ref 6.1.3.1) of the Environmental Statement identified an open status aggregate extraction and option area operated by Dover Harbour Board, with high data confidence attributed to the status of this project. At the time of drafting, it was considered that this project would be in the consenting/ pre-construction phase and was therefore considered that there would be no temporal overlap between the two projects. Additionally, any potential overlapping effects from Thanet Extension and the dredging on discrete features of the pMCZ would only be short-term and temporary in nature (i.e. temporary increases in suspended sediment which would rapidly decrease to background levels within hours after the end of activities) as there is no physical overlap between the RLB for Thanet Extension and the dredging area. It is now clear that works are anticipated to be undertaken between September 2019 and 2020. Offshore works for Thanet Extension are anticipated to be undertaken between Q1 2021 and Q2 2023 and as such there is no potential for temporal overlap of activities.<br>The aggregate extraction and option area was screened out of the cumulative assessments for benthic ecology and fish | MMO's response:<br><br>A copy of the Marine Licence is provided in Annex 1 to this response (file 'EN010084 - Thanet Extension - Deadline 1 - MMO Response to ExA Questions Annex 1'). The decision documents can also be viewed on the MMO's public register, available here.<br><br>The Environmental Impacts Assessment Consent Decision and Decision Report that was completed to document MMO's decision making process includes maps of the licensed dredge location (p.5), the location of the licensed activities in relation to European and Ramsar sites (p.25), and in relation to SSSIs and Goodwin Sands pMCZ (p.27) – copies of these maps are provided in Appendix 1 of this document. | The applicant acknowledges that the MMO have provided further information on the Marine Licence in question. With regard to potential in-combination impacts with the proposed aggregate extraction at Goodwin Sands by the Dover Harbour Board, please refer to the Applicant's response to ExA Q1.1.46(b).<br><br>In light of the ongoing concerns surrounding the Goodwin Sands pMCZ, the Applicant has provided a clarification note in relation to potential impacts on the Goodwin Sands pMCZ |

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| | | | and shellfish ecology.<br>The Applicant notes that Thanet Extension was not considered as part of the cumulative effects assessment presented in the Dover Harbour Board Marine Licence application[6]. | | (see Appendix 25 of the Deadline 2 submission) This document follows Natural England's suggestion of assessing impacts in the context of the Conservation Objectives, General Management Approaches and the Advice on Operations for the Thanet Coast MCZ as a proxy, in the absence of published advice on the Goodwin Sands pMCZ. |
| 1.1.47. | Natural England | Onshore Biodiversity: Survey Methodology Section 5.6 of [APP-061] describes "Uncertainty and Technical Difficulties Encountered" as part of the onshore | Although this question is specifically addressed to Natural England, to provide further context and clarity, access restrictions are summarised below in respect of each of the affected surveys:<br>• Phase 1 habitat survey – access was not granted to four areas for Phase 1 habitat survey, although the habitats within all | Natural England's response:<br>Natural England are aware of the access restriction that have hampered the applicant's data acquisition as part of the baseline assessment for onshore biodiversity.<br><br>In terms of European and National Protected Species such as great crested newt, reptiles, bats, water vole and otter, Natural England have determined the proposed development in unlikely to impact these legally protected species. However, the onus is on the developer to ascertain the likelihood of impacts upon these protected species and whether any wildlife licences will be | The Applicant is pleased to note that following the removal of landfall Option 2 from the project |

[6] Goodwin Sands Aggregate Dredging Scheme (https://www.gov.uk/government/publications/goodwin-sands-aggregate-dredging-scheme)

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| | | biodiversity assessment. Access restrictions prevented access to certain parts of the study area, which has affected a number of surveys including the Phase 1 habitat survey and surveys for great crested newts, reptiles, bats, water vole and otter. In some cases survey restrictions were temporary but in other areas surveying has been prevented entirely. The applicant states that most of these cases refer to areas in which significant effects are unlikely or where existing data is available. In addition, changes to the red line boundary have meant that some areas were not subject to a full suite of surveys. This includes the proposed tenant relocation area, which was added to the red line boundary in early 2018.<br>• Please can Natural England provide commentary as to the sufficiency of the Applicant's assessment in the onshore biodiversity aspect | four areas were able to be mapped using recent aerial photography (see Volume 5, Annex 5-10: Additional Phase 1 Habitat Survey Report (PINS Ref APP-106/ Application Ref 6.5.5.10) of the Environmental Statement (ES)). Of these, three are located outside the Red Line Boundary (RLB) and will not be affected by the Project. The other relates to intertidal habitat, which is assessed in Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5) of the ES.<br>• Great crested newt (GCN) survey – one waterbody within 250m of the RLB was not accessible for survey (waterbody 196 within Pegwell Bay Country Park) (see Volume 5, Annex 5-11: Additional Great Crested Newt (GCN) Survey Report (PINS Ref APP-107/ Application Ref 6.5.5.11) of the ES). Given the lack of GCN records within 2km this waterbody is very unlikely to support GCN. Furthermore, as a precaution, a pre-construction survey of this pond will be undertaken to confirm absence (see Table 5.11 in Volume 3, Chapter 5: Onshore Biodiversity (PINS Ref APP-061/ Application Ref 6.3.5) of the ES).<br>• Reptile survey – access for survey was not granted to the Richborough Energy Park (REP) site. However, existing reptile survey data exists for this site and no suitable habitats for these species were present within the parts of the REP site that could be affected by the proposed development in March 2018 (see paragraph 5.7.77 (PINS Ref APP-061/ Application Ref: 6.3.5).<br>• Bat survey – access to Pegwell Bay Country Park and Stonelees Nature Reserve was not permitted for the bat activity surveys undertaken in April and | required. We are encouraged by the applicant's assurances to carry out further pre-construction surveys to further determine the likelihood of these species being present.<br><br>Similar shortcomings have been highlighted within the invertebrate surveys, which were limited to only one visit late in August, where a few visits should have been undertaken. Natural England have provided further information to the applicant, which included further information on the potential invertebrate species that could reside in this area and their conservation status. Furthermore, and as highlighted within the applicants OLEMP a Terrestrial Invertebrate Mitigation Strategy is to be developed. This is alongside further preconstruction surveys to further identify invertebrate species of importance at the landfall location, to act as a baseline and to aid in post construction comparisons.<br><br>In terms of assessing the worst case scenario, which is landfall option 2, and the permanent loss of saltmarsh, Natural England were concerned at the level of surveys that had been carried upon the saltmarsh considering the potential for adverse effect on site integrity of the SPA and Ramsar. Following the decision from the applicant that landfall option 2 has now been dropped our concerns have been lessened to a degree, however we will await formal confirmation from the examining authority. Therefore, for landfall options 1 and 3, the measures secured in the OLEMP such as the TIMS and preconstruction surveys, but also measures within the Saltmarsh Mitigation Plan has allowed Natural England to determine that the current information is sufficient. | Natural England agrees that the current information is sufficient and the worst case scenario has been adequately assessed. |

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| | | chapter, and in particular whether the worst case scenario has been adequately assessed, in light of the survey access restrictions? | May 2018 (see Volume 5, Annex 5-12: Additional Bat Survey Report (PINS Ref APP-108/ Application Ref 6.5.5.12) of the ES). However, no potential roost features are located within these areas and the areas were covered by bat activity surveys undertaken between August and October 2017.<br>• Water vole and otter survey – a number of watercourses within the wider survey area (i.e. within 500m of the RLB) were not able to be accessed (see Volume 5, Annex 5-2: Water Vole and Otter Survey Report (PINS Ref APP-098/ Application Ref 6.5.5.2) of the ES). However, all watercourses within or adjacent to the RLB, including all watercourses potentially affected by the Project, were accessible for survey.<br>None of the access restrictions set out above have affected the validity of the assessment or the assessment conclusions.<br><br>The proposed tenant relocation area was not included in most of the species-specific faunal surveys undertaken in 2017, although it was covered by the Phase 1 habitat survey. A precautionary approach has been taken with regard to this area's potential to support notable invertebrate species, reptiles and bats and no other protected or notable species are likely to be present within this area (see Section 3.2 of PINS Ref APP-106/ Application Ref 6.5.5.10).<br><br>As stated in paragraph 5.10.76 of PINS Ref APP-061/ Application Ref 6.3.5 the habitats within the proposed tenant relocation area will be retained *in situ* and the land use is expected to be similar to its current use, i.e. vehicle storage. Given the limited potential for impacts and the precautionary approach | | |

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| | | | adopted the lack of survey data for some species groups has not affected the validity of the assessment or the assessment conclusions.<br><br>The Applicant notes that the implications of the various access restrictions have been discussed through the Evidence Plan process and that Natural England has previously agreed that the survey data obtained are sufficient to inform the assessment. For example, paragraph 3.1 of Natural England's Relevant Representation (PINS Ref RR-053) states "Natural England considers that the documents presented to the Planning Inspectorate, to support the application for Development Consent, are of sufficient quality and detail to allow a considered assessment of the impacts on nature conservation issues…"<br><br>The Applicant also notes that in their letter dated March 8th 2018 (at Annex B of this Deadline 1 submission) Natural England state that "the current NVC survey, plus the addition of the Phase 1 habitat survey has provided sufficient information to determine the baseline conditions and the vegetation communities that occur within the red line boundary of the proposed development." The applicant also refers to the minutes of a telephone conference with Natural England on 17th May 2018, presented within the EIA Evidence Plan (PINS Ref APP-137/ Application Ref 8.5) at which Natural England confirmed that the available data in respect of GCN are adequate for the EIA. | | |
| 1.1.48. | Natural England and the | Onshore Biodiversity: Terrestrial Invertebrates | Although part a) is specifically addressed to Natural England, to provide further context and clarity, the Applicant notes that Table | Natural England's response:<br>a) Natural England has discussed this issue with the applicant. We have provided further information to the applicant on the potential invertebrate species that could reside within the | a) As stated in the Applicant's Response to |

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| | Applicant | Natural England at page 38 of its relevant representation [RR-053] states that "Given the relatively limited invertebrate survey work to date and the potential reliance on embedded mitigation we would advise that a conclusion of no AEOI on the Ramsar invertebrate assemblage through temporary habitat loss / disturbance is premature".<br><br>a) Could Natural England confirm whether, in light of this comment, they expect further definition of invertebrate surveys and at what stage (eg as embedded mitigation through the OLEMP)?<br>b) Does Natural England consider that further work is necessary to enable the ExA to reach meaningful conclusions around AEoI during this Examination?<br>c) Could the Applicant indicate whether they intend to carry out further work? | 5.11 in Volume 3, Chapter 5: Onshore Biodiversity (PINS Ref APP-061/ Application Ref 6.3.5) of the ES states: "a terrestrial invertebrate mitigation strategy (TIMS) will be developed post consent and will form part of the detailed LEMP [Landscape and Ecological Management Plan]. The TIMS will be informed by a detailed invertebrate survey of affected areas prior to production and agreement of the detailed LEMP."<br><br>Further details regarding the proposed invertebrate survey are provided in Table 5.1 in the Outline LEMP (PINS Ref APP-142/ Application Ref 8.7). Table 5.1 in PINS Ref APP-142/ Application Ref 8.7 also provides details of the proposed survey timing, i.e. May to September, prior to development of the detailed LEMP. The detailed LEMP will be produced and agreed with Thanet District Council and Dover District Council, in consultation with Natural England, post consent but prior to construction commencing.<br><br>Although part b) is specifically addressed to Natural England, the Applicant notes that Natural England has previously agreed, in their letter dated March 8th 2018 (Annex B to this submission), that "the current assessment [i.e. a draft version of Volume 5, Annex 5-6: Terrestrial Invertebrate Assessment Report (PINS Ref APP-102/ Application Ref 6.5.5.6) of the ES] has provided sufficient data to characterise and evaluate the value of the site for terrestrial invertebrates."<br><br>The Applicant notes that comments in Section 5.9.1 (Points 7.5.27-28) of Natural England's Relevant Representation (PINS Ref RR-053) regarding consideration of the bug | Pegwell Bay area. As stated above, we have raised the shortcoming in the invertebrate surveys with the applicant. However, following the publication of the OLEMP, which includes further pre-construction surveys and a dedicated TIMS which will be developed in consultation with ourselves and other stakeholders we feel the further information provided at the pre-construction stage will successfully characterise the area further.<br>b) Apart from the further work described above, such as the TIMS and the pre-construction surveys at this stage Natural England deem further work is not necessary. However, it should be noted that this in line with the applicant dropping landfall option 2. | this question at Deadline 1, the OLEMP (PINS Ref APP-142/ Application Ref 8.7) includes a commitment to carry out a detailed invertebrate survey and provide a Terrestrial Invertebrate Mitigation Strategy prior to construction commencing.<br>b) The Applicant is pleased to note that following the removal of landfall Option 2 from the project, Natural England do not consider that further invertebrate survey work is necessary at this stage. |

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| | | | *Orthotylus rubidus*. This species, which is associated with glassworts, is not found on open saltmarshes, but occurs in areas which, though saline, are not regularly inundated by the sea (see Table 3.1 in PINS Ref APP-102/ Application Ref 6.5.5.6). *O. rubidus* is therefore not likely to be present within the area that would be affected by cable laying operations and the works at the landfall, which is characterised by open saltmarsh and mudflats.<br><br>The above notwithstanding, as the possible presence of this species cannot be conclusively ruled out, an assessment of adverse effect is included in an updated version of the Report to Inform Appropriate Assessment (PINS Ref APP-031/ Application Ref 5.2) (to be submitted at Deadline 2). Given the very low chance that *O. rubidus* is present within the affected area and following the implementation of the embedded mitigation, the assessment concludes that there is no potential for AEoI. With respect to embedded mitigation the Applicant confirms that the TIMS and associated pre-construction invertebrate survey (as referred to in Table 5.11 in PINS Ref APP-061/ Application Ref 6.3.5 and Table 5.1 of PINS Ref APP-142/ Application Ref 8.7) will include *O. rubidus*.<br><br>With respect to part c) the Applicant confirms that they intend to carry out further survey work for invertebrates. As stated above the survey will be undertaken prior to development of the detailed LEMP, post consent but prior to construction commencing. | | |
| 1.1.49. | The Applicant | Onshore Biodiversity: Trees and Woodlands | As set out in Table 5.7 in Volume 3, Chapter 5: Onshore Biodiversity (PINS Ref APP-061/ | No response provided by Forestry Commission. | n/a - no response |

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| | and Forestry Commission | Please could the applicant provide a comprehensive statement outlining any trees or woodlands that are likely to be lost as a result of the project.<br>a) What mitigation measures are proposed to minimise the risk of net deforestation as a result of the project and how are those measures (if any) secured?<br>b) What compensation measures (if any) are proposed and how are those measures secured?<br>c) Do the applicant and Forestry Commission consider that any Ancient Woodlands and Ancient or Veteran Trees would be affected by the project?<br>• If so, please provide details. | Application Ref 6.3.5) of the ES, 1.24 ha mapped as broad-leaved woodland during the Phase 1 habitat survey is present within the onshore RLB. This is located in three areas (see Figures 5.4a-d in PINS Ref APP-061/ Application Ref 6.3.5):<br>1. a triangular area of relatively young woodland in the south-west corner of Pegwell Bay Country Park, dominated by the non-native white poplar *Populus alba* with abundant field maple *Acer campestre* and occasional ash *Fraxinus excelsior*;<br>2. an area of immature, relatively open broad-leaved woodland at the southern end of Stonelees Nature Reserve, with trees including ash and occasional oak *Quercus robur* and white poplar and a number of shrubs such as hawthorn *Crataegus monogyna*; and<br>3. a strip of woodland containing various broad-leaved tree species along the western edge of the proposed tenant relocation area.<br><br>The strip of woodland along the western edge of the proposed tenant relocation area will not be affected by the Project but some tree removal will be required in the other two areas. The maximum area mapped as woodland that could be affected by the Project is approximately 0.37 ha, although the precise number, species and age of the trees that will be lost within these areas will not be known until the detailed design stage.<br><br>In addition to the areas mapped as woodland, four lines of trees (mapped as scattered trees in Figures 5.4a-d in PINS Ref APP-061/ Application Ref 6.3.5) will be affected by the Project. These are situated | | provided by Forestry Commission. |

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| | | | in the following locations:<br>1. a line of non-native Lombardy poplars *Populus nigra Italica* in the north-west corner of the Baypoint Sports Club site, along its boundary with Stonelees Nature Reserve;<br>2. a line of trees along the western boundary of the Baypoint Sports Club, along the route of the proposed new access from Sandwich Road;<br>3. a line of white poplars at the south-eastern corner of the Baypoint Sports Club pitches; and<br>4. a line of semi-mature trees (mostly white poplar) and shrubs (mostly hawthorn) at the boundary between the Baypoint Sports Club and British Car Auctions sites.<br><br>The maximum length of tree line affected by the Project is 95m (i.e. three lengths of up to 30m along the cable route plus 5m at the location of the new access into the Baypoint Sports Club site. The precise number, species and age of the trees that will be lost will not be known until the detailed design stage.<br><br><u>Mitigation Measures</u><br>Mitigation measures will be employed to minimise the number of trees removed and to protect retained trees from inadvertent damage. As set out in Section 4 of the Outline LEMP (PINS Ref APP-142/ Application Ref 8.7) working areas will be kept to the minimum area necessary with the extent of the working area dependent upon the final design solution adopted. All retained trees located directly adjacent to working areas will be protected by Root Protection Areas (RPAs) during construction, in accordance with BS 5837:2012 (British | | |

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| | | | Standards Institution, 2012). Working areas and the location and extent of any RPAs will be specified in the detailed LEMP. In addition, as set out in paragraph 1.6.1 of PINS Ref APP-142/ Application Ref 8.7, a suitably qualified Ecological Clerk of Works will be employed for the duration of the construction period and would oversee the implementation of the mitigation measures.<br><br>These mitigation measures will be secured via the submission, agreement and implementation of the detailed LEMP, as per Requirement 23 (*Landscape and Ecological Mitigation Plan*) in the draft DCO.<br><br><u>Compensation Measures</u><br>It is not possible to replace felled trees along the cable route for operational reasons, i.e. because access to the cable route may be required and to avoid tree roots damaging cables. However, additional tree planting is proposed to provide screening of the substation (see Section 4 and Figures 2 and 3 in PINS Ref APP-142/ Application Ref 8.7), which will provide compensation for the loss of trees along the cable route and at the new access to the Baypoint Sports Club. The total extent of the proposed tree planting at the substation will be between approximately 0.36 ha and 0.41 ha, with the precise area dependent on the detailed design solution adopted. Although this is likely to be slightly smaller than the area of woodland and tree lines to be lost tree planting is likely to take place at a higher density than the density of trees to be removed. Planting will also feature a higher proportion of native species than will be removed.<br><br>The Applicant is also willing to carry out | | |

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| | | | additional tree planting, if the number of trees to be removed is greater than the number of trees to be planted at the substation. Additional tree planting would take place within the RLB (away from buried cables) or adjacent to it, in agreement with the relevant landowner(s). Any additional planting would involve native species appropriate to the site. Although this additional tree planting is not proposed within the ES the proposals set out here have been included within an updated version of the Outline LEMP (PINS Ref APP-142/ Application Ref 8.7), also submitted at Deadline 1 (Appendix 42 to Deadline 1. These compensation measures will be secured via the submission, agreement and implementation of the detailed LEMP, as per Requirement 23 in the draft DCO. In addition, the tree planting at the substation will be secured via the submission, agreement and implementation of a substation landscaping management scheme, as per Requirement 12 (*Onshore Substation Landscaping*) of the draft DCO.<br><br><u>Ancient Woodland and Ancient or Veteran Trees</u><br><br>There are no areas included on the Ancient Woodland Inventory and no areas identified as wood pasture or historic parkland (which can represent ancient woodland but do not always appear on the Ancient Woodland Inventory because their low tree density did not register as woodland on historic maps) within 2km of the RLB. This has been checked by reference to the MAGIC website (Natural England, 2019).<br><br>No veteran trees, as defined in paragraphs 3.2.4-3.2.5 of Volume 5, Annex 5-1: Extended Phase 1 Habitat Survey Report | | |

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| | | | (PINS Ref APP-097/ Application Ref 6.5.5.1) of the ES, have been identified within 50m of the RLB (see paragraph 4.3.11 of PINS Ref APP-097/ Application Ref 6.5.5.1 and Volume 5, Annex 5-10: Additional Phase 1 Habitat Survey Report (PINS Ref APP-106/ Application Ref 6.5.5.10) of the ES.<br><br>No ancient woodlands and ancient or veteran trees will therefore be affected by the Project. | | |
| 1.1.50. | The Applicant | Onshore Biodiversity: Classification of Scrub<br>In describing habitat types within the study area, Tables 5.7 and 5.8 together with Figures 5.4a-5.4d of Chapter 5 of Volume 3 of the Environmental Statement [APP-061] refer to 'Scrub-Dense/Continuous' and 'Scrub- Scattered'.<br><br>a) Noting the contents of the relevant representation of the Forestry Commission, please could the applicant provide further clarity sufficient to ensure the correct classification of the identified scrub land.<br>b) In particular, clarity is sought as to the extent to which any of the identified scrub land should be considered to be woodland for the purposes of the EIA | Under the Phase 1 habitat survey classification (JNCC, 2010) scrub is defined as "seral or climax vegetation dominated by locally native shrubs, usually less than 5 m tall, occasionally with a few scattered trees." It goes on to state that "the following should, amongst others, be<br><br>included in this category:<br><br>stands of mature *Crataegus monogyna* [hawthorn], *Prunus spinose* [blackthorn] or *Salix cinerea* [grey willow], even if more than 5 m tall…; and all willow carr less than 5 m tall."<br><br>As set out in paragraph 4.3.8 of Volume 5, Annex 5-1: Extended Phase 1 Habitat Survey Report (PINS Ref APP-097/ Application Ref 6.5.5.1) of the ES, scrub within the Phase 1 habitat survey study area was typically dominated by hawthorn and willow *Salix* sp. with abundant dogwood *Cornus sanguinea*, frequent blackthorn and bramble *Rubus fruticosus* and occasional dog rose *Rosa canina* and ash saplings. The scrub within the study area has therefore been correctly classified under the Phase 1 classification. The Phase 1 classification currently remains the standard method for habitat survey in the UK and its use to inform the EIA was agreed through the Evidence Plan process. | No further response received from other Interested Parties | No response required from Applicant |

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| | | regulations. | The scrub mapped within the study area also meets the definition of scrub used by Mortimer *et al*. (2000), as referenced in Forestry Commission's Relevant Representation (PINS Ref RR-019). Mortimer *et al*. state that: "scrub includes all stages from scattered bushes to closed-canopy vegetation, dominated by locally native or non-native shrubs and tree saplings, usually less than 5m tall, occasionally with a few scattered trees."<br><br>It is acknowledged that Forestry Commission (PINS Ref RR-019) uses a different definition and that areas within the RLB that were not mapped as woodland in the Phase 1 habitat survey (PINS Ref APP-097/ Application Ref 6.5.5.1), mostly within Pegwell Bay Country Park, are defined as woodland on the National Forest Inventory. However, the Applicant's position is that scrub has been identified correctly in accordance with the widely accepted definitions and the methodologies agreed through the Evidence Plan process. The Applicant also notes that the current Pegwell Bay Country Park Management Plan includes objectives for the control of scrub to promote grassland diversity and prevent trees from maturing and potentially damaging landfill capping (see paragraph 6.1.9 of the Outline LEMP (PINS Ref APP-142/ Application Ref 8.7)). Removal of scrub within the Country Park, much of which is defined as woodland on the National Forest Inventory, is therefore likely to take place whether or not the Project takes place. | | |
| 1.1.51. | The Applicant | In Principle Monitoring Plan<br>Natural England has raised concerns that there is no In Principle | A. It is the Applicant's view that whilst the inclusion of an IPMP may be appropriate for other projects of a larger scale or proposed in new/novel areas, it would be | No further response received from other Interested Parties | No response required from Applicant |

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| | | Monitoring Plan (IPMP) included within the application, which it appears to have been expecting to be submitted as part of the application as a result of correspondence through the evidence plan process. The ExA recognises the existence of the Schedule of Mitigation document [APP- 135] but nevertheless requires further clarity on this point.<br>a) Please can the Applicant explain why an IPMP does not form part of the application?<br>b) Could the Applicant please confirm whether or not such a plan will be prepared and if so, by when?<br>c) If an IPMP is not to be made available at Deadline 1, can the Applicant please provide a single document which consolidates all of the monitoring requirement plans and provides clarity as to what relevant monitoring will be carried out to validate conclusions within the ES and HRA Reports.<br>i. Please do so by | disproportionate for a comparatively small extension project. The Project includes detailed monitoring proposals that are based on the uncertainties present. By virtue of the Project being an extension to an existing wind farm which has been subject to a number of programmes of ecological monitoring since construction, the uncertainties that remain with regards the sensitivity of the receiving environment to change are therefore very limited. The monitoring undertaken includes benthic and geophysical monitoring, and ornithological monitoring. The latter in particular is worthy of note as it was undertaken under the auspices of Offshore Renewables Joint Industry Programme with a view to reducing uncertainty at offshore windfarms.<br>B. Furthermore the Project position on monitoring has been informed by the Marine Management Organisation's review of post-construction monitoring which concluded inter alia that there is limited justification for monitoring of ecological receptors such as fish and shellfish, and monitoring in the wider sense should be focussed on specific questions and uncertainties rather than generic or broad scale monitoring. The monitoring proposals put forward are therefore very focussed, advanced and created to address the very limited areas of uncertainty.<br>The offshore monitoring proposals put forward are the Saltmarsh Mitigation, Reinstatement and | | |

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| | | onshore and offshore topic areas, and in particular in respect of ornithology and benthic ecology.<br>ii. Please set out how each of these monitoring commitments would be secured as part of the DCO/DMLs. | Monitoring Plan and the Biogenic Reef Mitigation Plan.<br>C. The Applicant acknowledges the Examining Authority's request for a single document consolidating the monitoring requirement plants. However, as these plans are very concise, to avoid where possible the administrative burden of submitting an additional document, these plans have been clearly set out within this response. If the Examining Authority remains of the view that an additional document will assist, the Applicant is content to provide this document as may be requested. Requirement 35 (Certification of plans etc.) of the draft Order requires the undertaker to submit copies of both the Saltmarsh Mitigation, Reinstatement and Monitoring Plan and the Biogenic Reef Mitigation Plan to the Secretary of State for certification as soon as possible after the Order is made.<br>The Pre-construction monitoring surveys condition in both deemed marine licenses (Schedule 11, Part 4, Condition 15 and Schedule 12, Part 4, Condition 13) requires the undertaker to conduct "appropriate surveys to determine the location and extent of any biogenic reef features (Sabellaria spinulosa) inside the area(s) within the Order limits in which it is proposed to carry out construction works, as provided for in the biogenic reef mitigation plan" before commencement of the licensed activities.<br>The Pre-construction monitoring surveys condition in the export cable | | |

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| | | | license (Schedule 12, Condition 13) requires the undertaker to carry out "appropriate surveys in order to monitor the impact of development authorised by the Order within any areas of saltmarsh, as provided for in the Saltmarsh Mitigation, Reinstatement and Monitoring Plan" before commencement of the licensed activities.<br>The onshore monitoring proposals are secured through the Landscape and Ecological mitigation plan. Requirement 23 (Landscape and Ecological Mitigation plan) requires the undertake to provide a Landscape and Ecological mitigation plan before commencing any stage of the connection works. The Plan is required to include an implementation timetable and must be carried out as approved. | | |
| 1.1.52. | The Applicant | Project Environment Management Plan (PEMP)<br>The PEMP appears to be relied upon as one form of embedded mitigation to reach a conclusion of no adverse effects on site integrity. DML conditions include some headline requirements for inclusion in the PEMP, but little further detail has been provided.<br><br>a) Could the applicant please explain why it is appropriate for the | A. The Applicant would draw the attention of the ExA the fact that the PEMP relates to works below MHWS and is therefore applicable to the marine environment, rather than the terrestrial/onshore environment. It is therefore appropriate that it is secured within the DML(s) at Schedule 11, Condition 12 (d) and Schedule 12, Condition 10(e). A Construction Environmental Management Plan (amongst a number of other onshore management plans) which relates to onshore matters is secured within the DCO. (Requirement 15). It should also be noted that the PEMP will not, in the most recent revision of the RIAA to be submitted at Deadline 2, be relied on as embedded mitigation. | No further response received from other Interested Parties | No response required from Applicant |

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| | | PEMP to be secured through DML condition rather than DCO requirement?<br>b) Can the applicant provide an outline structure for the PEMP and a table itemising the particular environmental performance that will be secured within it? | The PEMP requires development of *inter alia* marine pollution contingency plans which are a requirement of works within the marine environment and are embedded as such within the EIA. In light of the Sweetman II rulings, despite these types of plans being required by the London Convention (on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter) 1972, they are no longer 'embedded' for the purposes of the RIAA. In light of the above the PEMP is to be secured within the dMLs as it is the MMO as the relevant regulator that is ultimately responsible for the approval of the document.<br>B. The Applicant can confirm that the contents of the PEMP will reflect the condition(s) within the DML(s). The requirements are to provide a marine pollution contingency plan which will provide the Applicant (developer) proposed structure to ensure that pollution events are addressed rapidly and appropriately and in line with strategic and regional marine pollution contingency plans. The additional requirements, to provide a chemical risk assessment, waste management, and disposal arrangements further ensure that the Applicant and any contractors working on behalf of the Applicant will manage chemicals and waste appropriately to ensure that nothing is released to the marine environment. The requirements are underlined by *inter alia* the London Convention (on the Prevention of | | |

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| | | | Marine Pollution by Dumping of Wastes and Other Matter) 1972. In light of the proposed contents of the PEMP being detailed within the dML(s), and the environmental performance it will secure is compliance with either those commitments or other Conventions, the Applicant would request further clarification as to what an outline PEMP should include. | | |
| 1.1.53. | The Applicant | Ornithology Clarification in Non Technical Summary Please review and clarify [APP-129] Non Technical Summary: Offshore Ornithology para 120, which seems to be incorrectly proofed. | The Applicant acknowledges this proofing error and provides a clarified paragraph as follows (bold text represents revised text):<br><br>"**The assessment of potential impacts to offshore ornithology is focused on individual birds, populations and colonies, rather than the integrity of nature conservation sites (e.g. SPAs and Ramsars) designated for those ornithological receptors. Only where likely significant effects (in HRA terms) on birds are predicted, are those designated sites taken into account, with a full HRA submitted separately. Nature conservation designations are also considered in Volume 2, Chapter 8: Offshore Designated Sites (Document Ref: 6.2.8).** The offshore ornithology study area includes the operational TOWF array area, the proposed Thanet Extension array area with a 4 km buffer around it, as well as the OECC up to the Mean Low Water Springs (MLWS) mark. The assessment considers potential effects on offshore ornithology in the construction, O&M and decommissioning phases of the proposed development, using existing data, site-specific survey data as well as results from collision Risk Modelling (CRM). A full description of the assessment can be found within the ES (Volume 2, Chapter 4: | No further response received from other Interested Parties | No response required from Applicant |

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| | | | Offshore Ornithology (Document Ref: 6.2.4)).” | | |
| 1.1.54. | Natural England | Competent Authority for HRA<br>Point 2 of the Actions arising from Issue Specific Hearing 1 (ISH1) requests that the Applicant provides legal submissions on the question of who is the competent authority for HRA appropriate assessment when the relevant sites are in France. It further seeks views as to whether the Secretary of State can call on UK statutory nature conservation bodies (SNCBs) for advice on these sites.<br><br>a) Can Natural England (which was not represented at ISH1) please provide its considered opinion in respect of this matter?<br>b) In particular, it would assist the Examining Authority to understand whether Natural England considers its remit to include providing advice as to the likely significant effects of projects in England or English waters on European sites in France or French waters? | The Applicant refers the Examining Authority to Appendix 27, Annex E of Deadline 1 Submission: Defining "Competent Authority" in relation to Transboundary HRA issues which sets out the Applicant's understanding of the competent authority for HRA appropriate assessment for sites in France.<br><br>As detailed within the Note, the Applicant confirms that section 1(3) of the Natural Environment and Rural Communities Act 2006 makes clear that "except where otherwise expressly provided, Natural England's functions are exercisable in relation to England (including, where the context requires, the territorial sea adjacent to England] only." This is not expressly stated to the contrary in the Planning Act 2008 or any other associated relevant primary or secondary legislation. | NE<br><br>In Natural England's considered opinion, it is not within our remit to comment upon HRA issues and assessments when the relevant designated sites are in France. These should be addressed by the relevant nature conservation body in the country of concern. Natural England points the examining authority to sections 2.1.5 and 2.2.1 of our written representation which explains in more detail our current remit. | The Applicant notes and welcomes Natural England's response. |

## 3 ExQ1.3 Compulsory Acquisition, Temporary Possession and other Land or Rights Considerations

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| 1.3.1. | Applicant | National Trust Land<br>The Book of Reference [APP-027] Parts 1, 3 and 5 identify that the application proposal affects land or rights held by the National Trust, but seeks in all instances to describe the land or rights sought as 'excluding interests held by the National Trust…'<br>With regard to the outcomes from on-going diligence, the Applicant is asked to confirm that the application proposal does not seek to compulsorily acquire any land belonging to the National Trust which is held by the Trust inalienably and subject to the operation of s130 PA2008. | The Applicant does intend to seek compulsory acquisition powers over the National Trust's interest, as it may need to go through the Special Parliamentary Procedure to obtain authority to exercise them.<br><br>The Applicant has scheduled land interests belonging to the National Trust in its application BoR in Plots 00/05, 00/10, 01/01, 01/02, 01/05 and 01/06. The application BoR originally 'excluded' the National Trust's interests from the effect of compulsory acquisition with the note "Excluding interests held by The National Trust for Places of Historic Interest or Natural Beauty" placed below the description of the land (the exclusion wording).<br><br>At the time of submission, negotiations with the National Trust were at an early stage. Indications were positive that a favourable outcome would be reached. The exclusion wording was included in line with normal practice (as is also common for Highways England and Crown interests) to reflect the unlikelihood and undesirability of the Applicant entering into the Special Parliamentary Procedure process, and to avoid entering into a contentious process with the Trust following acceptance of the application.<br><br>Since the summer of 2018, negotiations have not progressed as steadily as hoped. The Applicant now considers there is a real prospect that it may need to compulsorily acquire all the interests it requires in the land including those of the National Trust. Accordingly the Applicant intends to strike out the exclusion wording, submitting an amended draft BoR in due course.<br><br>The Compulsory Acquisition Regulations<br><br>To be clear, the Applicant's view is that the Infrastructure Planning (Compulsory Acquisition) Regulations 2010 (the CA Regulations) are not engaged, because the Trust's interests are not "additional land" under the definition in the CA Regulations. We give the detail below.<br><br>Statutory rules<br><br>Section 123 of the 2008 Act states that an Order granting development consent can include compulsory acquisition provisions only if the Secretary of State is satisfied that:<br><br>• the application for the Order included a request for the | No further response received from other Interested Parties | No response required from Applicant |
| 1.3.2. | National Trust | National Trust Land<br>Does the National Trust consider that the proposed development seeks to compulsorily acquire any land belonging to the National Trust which is held by the Trust inalienably and subject to the operation of the Planning Act 2008 (as amended) section 130 (s130 PA2008)? | | The position is not entirely clear from the drafting of the Order and the Book of reference. In its written representations, The National Trust has made some suggestions for amendments to the draft DCO and the Book of Reference, which if combined with a legally binding undertaking from the applicant that it will not compulsorily acquire any of the Trust's interests in its land (including the compulsory acquisition of rights over those interests) then it would be satisfied.<br>However, on the date of the submission of this response, the Trust received an email from Mr John Hillis (Director of Blackhall and Powis, Chartered Surveyors acting for the applicant) saying "I write further | The Applicant confirms its answer to Question 1.3.2. at D1.<br>The Applicant intends to remove the exclusion of the National Trust's interests from the Book of Reference (albeit the land is already scheduled to be authorised for compulsory acquisition in the dDCO). Following this, the Trust's interests could potentially be compulsorily acquired.<br>This would also permit the Applicant to seek authorisation under the Special Parliamentary Procedure if a voluntary agreement with the Trust cannot be reached. |

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| | | | compulsory acquisition of the land to be authorised (s123(2)); or<br>• that all persons with an interest in the land consent to the inclusion of the provision (s123(3)); or<br>• that the 'prescribed procedure' has been followed in relation to the land.<br><br>The CA Regulations apply to proposals "to include in an Order.. a provision authorising the compulsory acquisition of additional land".. "and a person with an interest in the additional land does not consent to the inclusion of the provision" (Regulation 4).<br><br>"Additional land" is defined in Regulation 2 of the CA Regulations as "land which it is proposed shall be subject to compulsory acquisition and which was not identified in the Book of Reference submitted with the application as land".<br><br>Plots 00/5, 00/10, 01/01, 01/02, 01/05 and 01/06 are identified in the Land Plans for the dDCO, and are also scheduled in the application Book of Reference. The National Trust is aware that the Applicant needs to acquire rights in its land, and that its land was included in the Order.<br><br>Furthermore, if the Applicant's DCO is made with the exclusion wording included, this land would be excluded from compulsory acquisition, but would still be subject to the Applicant's development consent and the other statutory powers provided by the Order.<br><br>The interests of the National Trust do not constitute 'additional land' for the purposes of the CA Regulations, and accordingly cannot be the basis of a "proposed provision" under the CA Regulations.<br><br>For clarity, the exclusion wording in the Book of Reference can be removed without engaging the prescribed procedure under the CA Regulations, so that the Applicant is able to go through the Special Parliamentary procedure if that should prove necessary, however the Applicant remains committed to seeking to reach an agreement with the National Trust. | to my email of 10 December 2018 to confirm that<br>Vattenfall are intending to amend the DCO submission at the next PINs deadline to bring<br>the National Trust interest into the scope of the application for powers of compulsory acquisition.<br>This would appear to suggest that whatever the views of the Trust are on the application<br>as made, they are likely to be overtaken by events imminently. | |
| 1.3.3. | Applicant | Commons, open spaces etc.<br>Part 5 of the Book of Reference [APP-027] suggests that the Applicant seeks to acquire land and/or rights in Pegwell Bay Country Park that is defined as public open space. | The Applicant acknowledges that the compulsory acquisition of rights over the land known as Pegwell Bay Country Park ("the Park") could potentially be subject to the operation of section 132 of the Planning Act 2008 in relation to open space land (see the Special Category Land Plan (Document 2.4).<br><br>Plots identified as open space on that plan are being treated as such on | No further response received from other Interested Parties | No response required from Applicant |

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| | | The Applicant is asked to confirm whether the identified land is subject to the operation of s131 PA2008, or rights over such land are subject to the operation of s132 PA2008? | a precautionary basis. This approach has been taken albeit that the Park is not entirely accessible to the public, as explained below, due either to being fenced off, or clearly signposted as not for walking due to specific habitats potentially being disturbed. Further, the undertakers for the Nemo Link interconnector installed a berm within the Park to accommodate underground cables running to the Richborough substation; and no issue was raised during the application process to the effect that the Park was open space for the purposes of section 132. The Applicant does not understand there to be any local policy suggesting that the Park is open space.<br><br>Notwithstanding this precautionary approach, it is the Applicant's view however that under subsection 132(3) of the Act, the compulsory acquisition of rights over this land does not leave the order subject to special parliamentary procedure and that exchange land is not required. Section 132(3) states that section 132(2) does not apply where the Order land will be no less advantageous than it was before to the persons in whom it is vested and the public.<br><br>The Applicant expects a five month construction period at the Country Park (as set out within Table 4.12 of Environmental Statement Volume 3, Chapter 4: Tourism and Recreation (APP-060)). Following this, there will be a period of approximately 12 months where the wider onshore cable trenching/HDD and pull-through exercise for the whole project would relate to the Country Park. The Park would not be closed at any point during the entire construction period; and the public would be able to access the Park, including through specified routes. During the pull-through exercise most of the plots would be accessible as the pull through exercise would be undertaken sequentially and on a rolling basis. Only small areas of land within the plots would be cordoned off on a limited and temporary basis. Table 4.1 of the Access Management Strategy (APP-136) contains further information about the implementation of diversions to ensure the retention of a high level of access around the Country Park during this time.<br><br>This approach is in keeping with the current layout of the Park. As set out on pp 7 of the Access Management Strategy (APP-136), the Country Park is divided into six small fields, of which five are subject to regular grazing. As mentioned above, this means that approximately 46% of the Park's total area is subject to permanent or regular closure. This is part of the management of the Park undertaken by its tenants, Kent Wildlife Trust, to further open up the Country Park and make it more accessible; this also meets the aspiration of Kent County Council in improving access to the Country Park. As access to the Park is infrequent in any event, the | | |

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| | | | altering of routes through the Park during the construction period will not cause the land to be less advantageous to the public. Any temporary altering of routes through the Park during the construction period should be seen in this context and will not cause the land to be less advantageous to the public. Any effects during works affecting the Park are therefore entirely temporary and will not adversely affect the overall use of the land.<br><br>Following construction, the Applicant will at times require access to the land during anticipated maintenance periods, likely on an annual basis. The maintenance work will be limited to small, discrete parts of the Park which would be affected only intermittently, essentially through the use of created manhole covers. Any works would be of short duration and would not be inconsistent with the ongoing management of the country park by Kent County Council and Kent Wildlife Trust. It is not expected that any intrusive maintenance works will be required. The maintenance periods will in no way diminish the use of and access to the Country Park. Further information about the nature and impact of the anticipated maintenance works can be found at Table 4.12 of Environmental Statement Volume 3, Chapter 4: Tourism and Recreation (APP-060). To the extent that the installation of the cable may have involved the creation of a berm above ground, access to the berms would be maintained and comply with the various guidance and legislative requirements relating to accessibility.<br><br>For these reasons the land would be no less advantageous than it was before to any person and the public and the exception in section 132(3) is considered to apply. | | |
| 1.3.4. | Applicant | Commons, open spaces etc.<br>With regard to the outcomes from on-going diligence, the Applicant is asked to confirm that the application proposal does not seek to compulsorily acquire any land forming part of a common, open space or fuel or field garden allotment subject to the operation of s131 PA2008, or rights over such land subject to the operation of s132 PA2008, other than the plots already identified. | The Applicant can confirm that the outcomes from ongoing diligence have not led to any additional land which may be form part of a common, open space or fuel or field garden allotment subject to the operation of s131 PA2008, or rights over such land subject to the operation of s132 PA2008, other than the plots already identified. | No further response received from other Interested Parties | No response required from Applicant |
| 1.3.5. | Applicant | Crown land<br>With regard to the outcomes from on-going diligence, the Applicant is | The Applicant has provided this table at Annex C - ExQ1.3.5: Crown Land and Consent and a revised table will be provided at subsequent deadlines as requested. | No further response received from other Interested Parties | An updated Annex has been provided with this Deadline 2 submission |

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| | | requested to provide and at each subsequent deadline to maintain and resubmit a table identifying any Crown interests subject to PA2008 s135 with reference to the latest available Book of Reference and the Land Plans, to identify whether consent is required with respect to s135(1)(b) and/or s135(2) and what progress has been made to obtain such consent(s).<br><br>Written evidence of consent(s) obtained must be provided at the first available deadline and in any case by Deadline 6.<br><br>The table should be titled ExQ1.3.5: Crown Land and Consent and provided with a version number that rolls forward with each deadline. If at any given deadline, an empty table is provided, a revised table need not be provided at any subsequent deadline unless the Applicant becomes aware that the data and assumptions on which the empty table was provided have changed. | | | |
| 1.3.6. | Applicant | Compulsory acquisition and temporary possession: general<br>With regard to the outcomes from on-going diligence, the Applicant is requested to complete the attached Objections Schedule with information about any objections to the compulsory acquisition and temporary possession proposals in the application and at each successive deadline to make any new entries, or delete any entries that it considers would be appropriate, taking account of the positions expressed in relevant | The Applicant has provided this table at Annex D - ExQ1.3.6: Schedule of CA and TP Objections and a revised table will be provided at subsequent deadlines as requested. | No other Interested parties provided a response. | An updated Annex has been included with this Deadline 2 submission |

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| | | representations and written representations, giving reasons for any additions or deletions.(See Annex A to ExQ1 below).<br><br>The Objections Schedule should be titled ExQ1.3.6: Schedule of CA and TP Objections and provided with a version number that rolls forward with each deadline. If at any given deadline, an empty table is provided, a revised table need not be provided at any subsequent deadline unless the Applicant becomes aware that the data and assumptions on which the empty table was provided have changed. | | | |
| 1.3.7. | Applicant | Statutory undertakers: land or rights<br>The Applicant is requested to review relevant representations and written representations made as the examination progresses alongside its land and rights information systems and to prepare and at each successive deadline update as required a table identifying and responding to any representations made by statutory undertakers with land or rights to which PA2008 s 127 applies. Where such representations are identified, the Applicant is requested to identify:<br><br>a) the name of the statutory undertaker;<br>b) the nature of their undertaking;<br>c) the land and or rights affected (identified with reference to the most recent versions of the Book of Reference and Land Plans available at that time);<br>d) in relation to land, whether and if so how the tests in PA2008 | The Applicant has provided this table at Annex E - ExQ1.3.7 PA2008 s127 Statutory Undertakers Land Rights V1 and will provide an updated table at subsequent deadlines as requested. | No further response received from other Interested Parties | An updated Annex has been provided with this Deadline 2 submission |

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| | | s127(3)(a) or (b) can be met;<br>e) in relation to rights, whether and if so how the tests in s127(6)(a) or (b) can be met; and<br>f) in relation to these matters, whether any protective provisions and /or commercial agreement are anticipated, and if so:<br>i. whether these are already available to the ExA in draft or final form,<br>ii. whether a new document describing them is attached to the response to this question or<br>iii. whether further work is required before they can be documented; and<br>g) in relation to a statutory undertaker named in an earlier version of the table but in respect of which a settlement has been reached:<br>i. whether the settlement has resulted in their representation(s) being withdrawn in whole or part; and<br>ii. identifying any documents providing evidence of agreement and withdrawal.<br><br>The table provided in response to this question should be titled ExQ1.3.7: PA2008 s127 Statutory Undertakers Land/ Rights and provided with a version number that rolls forward with each deadline. If at any given deadline, an empty table is provided, a revised table need not be provided at any subsequent deadline unless the Applicant becomes aware that the data and assumptions on which the empty table was provided have changed. | | | |
| 1.3.8. | Applicant | Statutory undertakers: | The Applicant has provided this table at Annex F - ExQ1.3.8 PA2008 s138 | No further response received | An updated Annex has been |

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| | | extinguishment of rights and removal of apparatus etc.<br>The Applicant is requested to review its proposals relating to CA or TP of land and/ or rights and to prepare and at each successive deadline update a table identifying if these proposals affect the relevant rights or relevant apparatus of any statutory undertakers to which PA2008 s138 applies. If such rights or apparatus are identified, the Applicant is requested to identify:<br><br>a) the name of the statutory undertaker;<br>b) the nature of their undertaking;<br>c) the relevant rights to be extinguished; and / or<br>d) the relevant apparatus to be removed;<br>e) how the test in s138(4)can be met; and<br>f) in relation to these matters, whether any protective provisions and /or commercial agreement are anticipated, and if so:<br>i. whether these are already available to the ExA in draft or final form,<br>ii. whether a new document describing them is attached to the response to this question or<br>iii. whether further work is required before they can be documented; and<br>g) in relation to a statutory undertaker named in an earlier version of the table but in respect of which a settlement has been reached:<br>i. whether the settlement has resulted in their representation(s) being withdrawn in whole or part; | Statutory Undertakers Apparatus V1 and will provide an updated table at subsequent deadlines as requested. | from other Interested Parties | provided with this Deadline 2 submission. |

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| | | and<br>ii. identifying any documents providing evidence of agreement and withdrawal.<br><br>The table should be titled ExQ1.3.8: PA2008 s138 Statutory Undertakers Apparatus etc. and provided with a version number that rolls forward with each deadline. If at any given deadline, an empty table is provided, a revised table need not be provided at any subsequent deadline unless the Applicant becomes aware that the data and assumptions on which the empty table was provided have changed (for example as a consequence on ongoing diligence). | | | |
| 1.3.9. | Applicant and National Grid Electricity Transmission (NGET) | Richborough Connection and Substation<br>The application proposal includes land on which the consented Richborough 400kV substation would be constructed within the Order limits.<br><br>a) NGET [RR-027] states that it is 'concerned' about the prospect of CA and/ or TP affecting this land. It is requested to explain why CA and/ or TP is inappropriate, with reference to the effect that it would have on:<br>i. the intended operational land required for the transmission and substation facilities proposed to be developed in the Richborough Connection; and/ or<br>ii. any other land that NGET may hold that is intended to be non-operational.<br>b) The Applicant is asked to explain why CA and/ or TP is required and whether or not its needs could be | A connection agreement is in place between The Applicant and NGET for a 400KV connection between the proposed Thanet Extension Offshore Windfarm and the transmission network.<br><br>Acquisition of permanent rights (Easement) is required because NGET are not the Freehold owners of the land and might require permission from the landowner to grant Vattenfall an easement for the cables within the substation fenceline to the interface point.<br><br>The Applicant is not looking to CA the freehold of NGET's operational land just have the ability to lay cables to the interface point.<br><br>The applicant is working to agree the terms for an option to grant an easement with the Freehold owners and to agree the terms of bespoke Protective Provisions with NGET. | (a) NGET have a leasehold interest in Plot 2/130 which is the Richborough Sub Station plot. This is NGET Operational Land required for the operation of their existing 400kV Sub Station. No property rights should be authorised to be acquired or created that would acquire/override or conflict with NGET's existing property rights within the Sub Station boundary in order to ensure that the integrity of the existing system is not affected by the promoters DCO. NGET have entered into a connection agreement with the Promoter to facilitate connection of the Thanet Offshore Windfarm into the Richborough 400kV Sub Station. The Connection Agreement will apply from the boundary of the substation and the connection works will be | The Applicant acknowledges NGET's comments regarding its interest in Plot 2/130.<br>The Applicant confirms that it has scheduled NGET's leasehold interest in plot 02/130. The exercise of compulsory acquisition powers over this plot will be prevented by the protective provisions, unless NGET agrees to the powers being exercised.<br>The Applicant wishes to retain NGET's interest in this plot scheduled for compulsory acquisition in order to permit the widest range of possible options for the delivery of the scheme. |

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| | | met by any alternative provisions, a lease or other legal agreement relating to NGET intended operational and/ or non-operational land.<br>c) NGET is requested to identify whether any alternative provisions, a lease or a legal agreement could address its concerns. | | done by NGET in accordance with the Connection Agreement and are allowed for in the NGET lease. As such NGET is of the view that the Promoter does not need to acquire any rights from the NGET leasehold interest to be able to connect into the Richborough 400kV Substation from this point. However this is one issue that we would like further clarity from the Promoter on as it is not usual to seek compulsory acquisition rights across NGET Sub Station Land and NGET would ordinarily require such rights to be taken out of the Order.<br>The right to connect into the Sub Station can only be secured from NGET under a Connection Agreement. NGET therefore object to any compulsory acquisition powers being used against their interests in this plot. The need or otherwise for compulsory acquisition powers against other parties with different ownership categories within plot 2/130 is a matter for the promoter and the relevant parties to address.<br>NGET will clarify the position in relation to non-operational land, if any, held in this area affected by the DCO and update the ExA shortly.<br>(b) For the Applicant<br>(c) As explained above it is NGET's contention that the Connection Agreement between the parties is sufficient to ensure the Connection into NGET's Sub | |

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| | | | | Station across the Sub Station land as this isn't in conflict with NGET's lease. | |
| 1.3.10. | Applicant and Nemo Link Ltd. | Nemo Link Onshore Facilities<br>The application proposal includes land on which the Nemo Link interconnector is sited within the Order limits.<br>a) Is Nemo Link Ltd or any related body that might operate the Nemo Link interconnector or facilities related to it classed as a statutory undertaker for the purposes of PA2008?<br>b) Nemo Link Ltd [RR-010] states that it objects to CA and/ or TP affecting this land and related facilities. Nemo Link Ltd is requested to explain why CA and/ or TP is inappropriate, with reference to the effect that it would have on:<br>i. the operational land of the interconnector; and/ or<br>ii. any other land that Nemo Link Ltd may hold that is associated with the interconnector.<br>iii. Nemo Link Ltd is requested to identify whether any affected land is operational land and if it contains any apparatus that might be affected.<br>c) The Applicant is asked to explain why CA and/ or TP is required and whether or not its needs could be met by any alternative provisions, a lease or other legal agreement relating to NGET intended operational and/ or non-operational land.<br>d) NGET is requested to identify whether any alternative provisions, a lease or a legal agreement could address its concerns. | The Applicant seeks the acquisition of permanent rights (Easement) in certain land where NEMO Link Ltd enjoys easements and other rights. NEMO Link Ltd is not the freehold owner of this land, and the Applicant requires rights from the freehold landowner to install the cables within the relevant land.<br>The only potential onshore crossing of NEMO is within the Richborough Energy Park at plot 02/21 if the north eastern routeing through the energy park is opted for.<br>The Applicant is not seeking to extinguish or relocate any of NEMO Link Ltd's infrastructure or rights, but is seeking rights from the same freehold landowners to lay cables in proximity to NEMO Link Ltd's cables, and rights relating to its cables. CA and TP powers are sought in the event that the relevant landowners do not complete a negotiated agreement with the Applicant. In accordance with practice standard in infrastructure orders, CA and TP powers are sought in parallel with voluntary negotiations in the event that voluntary negotiations fail.<br>The Applicant is working to agree the terms for an option to grant an easement with the freehold landowners.<br>In addition, the Applicant is negotiating with NEMO Link Ltd to agree the terms of a crossing and proximity agreement and we understand that, providing agreement can be reached before the end of the examination, NEMO Link Ltd will at that point remove its objection. | a) NLL is a statutory undertaker for the purposes of the Planning Act 2008 by virtue of section 127 of the Planning Act 2008, section 112(1) of the Electricity Act 1989 and Paragraph 2 of Schedule 16 to the Electricity Act 1989.<br>NLL is the holder of an electricity interconnector licence under section 6(1)(e) of the Electricity Act 1989, and NLL is the owner and operator of Nemo.<br>b) NLL's objection to the compulsory acquisition of its land or its interests in or rights over land or the creation of new rights over its land is set out in sections 4 to 7 above in more detail. In response to the ExA's questions:<br>i. The full extent of Nemo's cable route and the converter station site is operational land. The compulsory acquisition of NLL's land or NLL's rights or interest in land would adversely and unacceptably impact on NLL's ability to operate and maintain its operational apparatus.<br>The land is operational land because it is land:<br>i. which is used for the purpose of carrying on NLL's undertaking;<br>ii. in which an interest is held by NLL for that purpose;<br>iii. over which there is, and has been, a specific planning permission for its development; | The Applicant notes this response and can confirm it has already addressed these points in its response to the Examining Authority's question. |

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| | | | | and<br>iv. that development, if carried out, would involve or have involved its use for the purpose of the carrying on of the statutory undertakers' undertaking.<br>ii. NLL has significant additional landholdings in the vicinity of the Project, including its converter substation (which is excluded from the order limits and is shown on the land plans and work plans as the smaller of the two "islands" in between Work No.16). This converter station is required to convert HVDC electricity into HVAC electricity in order to connect to the NGET substation.<br>iii. The land affected by Works No.6 and Works No.16 is operational land, which includes Nemo's cables.<br>The Applicant has confirmed that it does not intend to compulsory acquire any of NLL's land or relocate any of NLL's apparatus, therefore NLL's interests should be excluded from compulsory acquisition and it should be made clear in an article to the DCO that none of NLL's land or interests in or rights over land may be compulsorily acquired and that no such interests or rights may be extinguished.<br>Nemo has recently been constructed and is due to commence commercial operation in Q1 2019. Nemo was consented following a detailed and optioneering and site selection | |

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| | | | | process, and Nemo has a maximum capacity of almost three times that of the Project.<br><br>As identified above, there is no compelling case in the public interest for NLL's land or NLL's rights or interests in land to be compulsorily acquired and the requirements of section 127 of the Planning Act 2008 are not met in respect of such acquisition.<br><br>c) NLL has no comment to make at this stage.<br><br>d) This question is not addressed to NLL.<br><br>As noted above, NLL would wish to appear at the CAH on Thursday 21 February 2019. | |

## 4 ExQ1.5 Debris, Waste and Contamination

| PINS Question number: | Question is addressed to: | Question: | Applicant's Response: | Interested Party Response at D1 | Applicant Comment on IP response |
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| 1.5.1. | The Applicant | Onshore Site Investigation and Contaminated Land and Groundwater Plan<br>Table 6.12 of ES Chapter 6.3.6 [APP-062] states that "The contaminated management plan (CLGP) [sic] will be drafted following SI works", whereas page 13 (item 6.2) of the Schedule of Mitigation [APP-135] states that "Site investigation works to inform final design and potential hazards" will be secured by the Contaminated Land and Groundwater Plan. Can the applicant clarify this apparent discrepancy? | Site investigation including geotechnical surveys are needed to inform the mitigation measures that will form part of the Contaminated Land and Groundwater Plan (CLGP) as set out in the ES chapter. The requirement to undertake these surveys and to use the data gathered to inform the CLGP is set out in the Code of Construction Practice (CoCP) (PINS ref: APP-133).<br><br>The CLGP must be drafted in accordance with the CoCP as set out in Requirement 19 (Contaminated land and groundwater plan). It is through this mechanism that the requirement for site investigation to inform the plan is secured within the DCO. | No further response received from other Interested Parties | No response required from Applicant |
| 1.5.2. | The Applicant | Onshore Site Investigation<br>Please identify what additional site investigation works requiring access to private land still need to be carried out / completed pursuant to applications made under s53 PA2008?<br><br>In relation to this question, please:<br>a) Identify any plots of land remaining to be investigated (using BoR / Land Plan plot references);<br>b) Itemise the outstanding investigations and explain whether, irrespective of access considerations, there are any elements of these with particular seasonal or timing requirements (and if so please itemise these);<br>c) With regard to the fact that you are now engaged in a separate application process under s53 PA2008, please estimate when investigations are likely to be complete; and<br>d) Where investigations are completed, at the next relevant | Notwithstanding the Applicants decision to remove landfall option 2 (surface laid cables covered in a berm) the Applicant intends to conduct geotechnical ground investigations within the former landfill site area of Pegwell Bay Country Park, such that it may provide additional context to the baseline data:<br><br>A. The plot numbers from the BoR and Land Plans to which access is required are 01/10, 01/11, 01/15, 01/20, 01/60, 01/65, 01/70.<br>B. There are 13 trial pits and 7 boreholes proposed within those land parcels.<br>C. All of the proposed site investigations within those land parcels are subject to seasonal restrictions in line with the permits for the works that have been issued by the Environment Agency.<br>D. The Applicant anticipates that the SI works could be complete by end May 2019, assuming that access is obtained by the end of March 2019. It is recognised that this is likely to be too late to introduce the data acquired into the examination. It is, in part, for this reason that the decision to drop landfall option 2 has been made at Deadline 1.<br>E. The Applicant notes the requirement to provide a report on site investigations once they are complete.<br>The Applicant notes the requirement to provide a report at Deadline 6 identifying how they intend to address the need for site investigation works that may need to be carried out after the closure of the Examination. Pre-construction site | No further response received from other Interested Parties | No response required from Applicant |

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| | | deadline up to Deadline 6, please provide a report of investigations.<br>e) If any investigations remain incomplete at Deadline 6, please provide a report at that deadline identifying how you intend to address the need for site investigation works that may need to be carried out after the closure of the Examination.<br>It should be noted that it is distinctly preferable for all site investigations to be complete in sufficient time to be reported to the Secretary of State (SoS) by the ExA. However, this question cannot affect the exercise of discretion by the SoS under s53 PA2008 which is a separate matter to this Examination. | investigation is a requirement set out in the Code of Construction Practice. This is explained further in response to ExQ 1.5.1. | | |

## 5 ExQ1.6 Electric and Magnetic Fields (EMFs)

| PINS Question number: | Question is addressed to: | Question: | Applicant's Response: | Interested Party Response at D1 | Applicant Comment on IP response |
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| 1.6.1. | All IPs | Effects on Human Health<br>Public Health England states that it is satisfied that the project would not pose a significant risk to public health in terms of the potential impact of electric and magnetic fields.<br><br>• Do any IPs disagree with this view? If so, please explain why. | The Applicant notes that it has nothing to add to this ExQ at this time beyond noting that following multiple phases of consultation PHE agreed this position to be accurate. | DDC agreed with this opinion and do wish to raise any comments in respect of this matter. | The Applicant has nothing further to note, and welcomes DDC's positive response. |
| 1.6.2. | The Applicant, Natural England and Marine Management Organisation | Effects on Benthic Ecology<br>The embedded mitigation identified within the ES includes burying offshore cables to a maximum target depth of 3m "where possible" to reduce received Electric and Magnetic Field effects on benthic species. As cables will be buried to a maximum target depth only where possible, there is some uncertainty as to how these embedded mitigation measures will be secured.<br><br>a) In respect of table 5.11 of APP-046, can the applicant explain (with reference to the DCO, DMLs and/or other documents) how the embedded mitigation measures identified are capable of being secured as part of the scheme design?<br>b) What will be the approach taken in areas where it is not possible to bury cables at the desired depth and where are the EMF effects of this | The Applicant notes that, due to the inherent uncertainty as to whether burial to the target depth can be achieved, the worst case parameters assessed within Volume 2, Chapter 5: Subtidal Benthic and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5) assumed that the full length of all cables installed for the proposed development would be buried to less than 1.5m (i.e. the depth at which electromagnetic fields (EMF) from the cables will be detectable).<br><br>A. The Applicant will undertake a Cable Burial Risk Assessment (CBRA) as part of the engineering works which will inform the Cable Specification and Installation Plan (CSIP) which is one of the required pre-commencement documents outlined in the dMLs (Condition 12(g) of the Generation Assets dML and Condition 10(h) of the Export Cable System dML). These documents will detail the burial methodologies and how the target burial depth will be met or what measures will be used if the target burial depth is not achieved. These documents will be submitted to the MMO at least 4 months prior to construction for approval and the MMO will consult with Natural England to ensure that they are content that the methodology is appropriate.<br>B. Where it is not possible to bury the cables to the target burial depth, it is likely that cable protection will be used. This typically comprises of rock deployed in a berm or concrete mattresses, but full detail of this cable protection will be provided to the | Natural England's response:<br><br>Natural England confirm no further mitigation is needed to reduce the impacts of EMFs on benthic species. We refer the Examining Authority to Natural England's relevant representations where we state on page 30 in relation to table 5.11:<br>"Electromagnetic Fields - If it is not be possible to bury cables to 1.5 m, Natural England do not want cable protection to be used as de facto to minimise the impacts from EMF. The use of cable protection should be minimised and agreed on a case by case basis depending on what will lead to the lowest environmental impact. In environmental terms, it may be better to leave a cable surface laid or shallow buried." | The Applicant notes and agrees with this response. |

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| | | scenario assessed?<br>c) As no significant effects resulting from the proposed development are identified, no further mitigation is proposed as necessary beyond those measures embedded in the project design. Please could NE and the Marine Management Organisation confirm whether or not they are satisfied that no further mitigation is proposed? | MMO for approval in the CSIP, based on the information provided in Volume 2, Chapter 1: Project Description (Offshore) of the ES (PINS Ref APP-042/ Application Ref 6.2.1). The worst case scenario for EMF effects is that all cables will be buried to less than 1.5 m depth (i.e. assumed full effects of EMF received by benthic organisms) and this has been assessed in section 5.11 of Volume 2, Chapter 5: Subtidal Benthic and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5).<br>C. The Applicant notes that this question is not directed at them but considers that it would aid the ExA to clarify that the embedded mitigation (i.e. cable protection)will be fully implemented for the project and where the target burial depth is not achieved, cable protection will be deployed to ensure the integrity of the cable, therefore also providing a degree of mitigation for EMF effects. | MMO's response:<br><br>Table 5.11 of APP-046 states that 'Inter-array and export cables will be buried to a maximum target depth of 3m, subject to a cable burial risk assessment. Where it is not possible to bury the cables sufficiently, cable protection will be used. While cable protection or burial does not decrease the strength of EMF at source, it does increase the distance between the cables and benthic receptors, thereby reducing the received EMF (from attenuation of the EMF) and potentially reducing the effect on those receptors.' The MMO considers that this is satisfactory mitigation for cable burial for EM, however the MMO recognises that the use of scour protection could result in additional negative impact on other receptors, and the worst case scenario for all receptors should be assessed when considering whether or not scour protection should be used.<br>The MMO also notes that reduced burial depth could occur during the construction phases (i.e. the target depth could not be achieved), as well as during the operational phase (for example cable becoming expose due to sandwave movement), and expects that the detailed management/mitigation of this will be captured in the cable specification, installation, and monitoring plan. | The Applicant notes this response and confirms that the assessment has used the worst case scenario at all stages - i.e. for scour protection it has been assumed that the full volume will be required and for EMF it has been assumed that all cable will be buried less than 1.5 m below the seabed, without scour protection deployed. As such, while these situations cannot occur in conjunction with each other, they therefore a worst case assessment which covers any combination of EMF fields and scour protection deployment. |

## 6 ExQ1.7 Electricity Connections and Other Utility Infrastructure

| PINS Question number: | Question is addressed to: | Question: | Applicant's Response: | Interested Party Response at D1 | Applicant Comment on IP response |
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| 1.7.1. | The Applicant | Richborough Connection and Substation: Integrity of and access to existing 132kV underground cable:<br>In its Relevant Representation [RR-027], National Grid commented: "Between National Grid's 400kV substation and UKPN's 132kV substation will be a 132kV underground cable. Careful consideration will need to be given by the Thanet Extension Offshore Windfarm project team to ensure none of the proposed works impact on the integrity of this cable. Unfettered access to this cable will also need to be maintained at all times."<br><br>Please provide a detailed response on this matter? | The Applicant seeks consent for sufficient land within the order limits to provide for 3 cable routing options through Richborough Energy Park.<br><br>• Option 1 – To The North East of the NEMO HVDC Converter Building approaching the NGET 400KV Richborough Substation from the east.<br>• Option 2 – Between the NEMO HVDC Converter Building and the UKPN 132KV Substation approaching the NGET 400KV substation from the south<br>• Option 3 – A route to the south west of the UKPN substation broadly following the south western boundary of the Richborough A Ltd. ownership<br><br>The south western option (Option 3) would involve cable laying in proximity to the 132KV underground cable referred to in NGETs Relevant Representation.<br><br>The Applicant is in discussions with NGET and UKPN to ensure that the routing of this 132KV cable would not preclude installation of its own 400KV cable in the same vicinity.<br><br>Construction of the Applicant's scheme will also be governed by protective provisions in the Order benefitting NGET, which will ensure that the Applicant's works cannot be commenced until (for example) satisfactory designs and construction methodologies are approved by NGET.<br><br>The Applicant is engaged in an ongoing process of consultation with Richborough A Ltd. as freehold owner of the energy park and all other energy park stakeholders who enjoy easement and other rights in the common areas thereof with a view to agreeing the optimum cable routing bearing in mind the constraints that exist.<br><br>Bearing in mind the constraints that exist and the pace of development within the energy park the applicant considers it reasonable and necessary to have sufficient land available within the Order Limits for any of the 3 options to be taken forward in order to allow sufficient flexibility for the constraints to be worked around. | No further response received from other Interested Parties | No response required from Applicant |
| 1.7.2. | Nemo Link Ltd. | Nemo Link Onshore and Offshore Facilities<br>Nemo Link Ltd identifies [RR-010] | The Applicant notes that this question is for Nemo Link, and has provided a response to ExQ 1.7.3 which responds to the themes of both questions. | Please see NLL's representation at sections 5 to 10 above (NLL's Deadline 1 submission) which | Please see document 'Appendix 1 to Deadline 2 Submission: Applicant's Response to Written |

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| | | that there is insufficient information in the application document set to enable it to reach a full understanding of the impacts of the proposed development on the Nemo Link interconnector. Nemo Link Ltd is requested to identify:<br>a) Whether additional information is required in relation to works at sea and/ or works on land?<br>b) What additional information it considers would be necessary to enable the impacts to be fully understood? | | detail the particular concerns that NLL has in respect of the Project. | Representation' which addresses NLL's Written Representation in detail and specifically sections 5 to 10. |
| 1.7.3. | The Applicant | Nemo Link Onshore and Offshore Facilities<br>With reference to ExQ1.7.2 the Applicant is requested to address responses to that question with additional information and, where appropriate mitigation proposals at Deadline 2. | The Applicant and NEMO Link Ltd. are in engaged in an ongoing process of dialogue with the objective of agreeing a crossing and proximity agreement addressing how the Applicants proposed offshore and onshore works will impact NEMOs rights and assets during the Applicants construction and operational phases and how those impacts can be managed to ensure the integrity of both assets.<br><br>In common with standard agreements with statutory undertakers, the agreement will require the Applicant to produce documents describing and explaining their detailed project design and construction methodologies and NEMO Link will be required to give timely consideration to these and give approval for the works post consent in advance of construction commencing. This provides the statutory undertaker with the necessary protection for their assets whilst understanding that detailed design information is not available at this time.<br><br>It is expected that this agreement will in place during the examination. The Applicant and NEMO Link Ltd. expect NEMO Link Ltd. objections to the DCO Application to be withdrawn at the point that agreement is entered into.<br><br>The Applicant will respond to Nemo Link's specific concerns at Deadline 2. | No further response received from other Interested Parties | No response required from Applicant |
| 1.7.4. | The Applicant | Landfall Option 2 Double Berm<br>If the Option 2 landfall were to be adopted, resulting in a "double" berm where the Thanet Offshore Wind Farm Extension cable route runs in parallel with Nemo Link, | The Applicant has made the decision to remove landfall option 2 and to commit to undergrounding the cables for the entirety of the onshore cable route. As such there will not a second berm adjacent to the Nemo Link berm. Drainage for the buried cables will be designed and constructed as set out in paragraphs 1.5.89, 1.5.90 and 1.5.93 of the Project Description (Onshore) chapter of the ES (PINS ref: APP-057). The | No further response received from other Interested Parties | No response required from Applicant |

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| | | would the applicant confirm whether this would result in an "M-form" berm? If the answer to this question is yes:<br>• How will drainage of the resulting valley between berm crests be managed. | decision to remove landfall option 2 is set in Appendix 45 of the response to Deadline 1. | | |

## 7 ExQ1.11 Marine and Coastal Physical Processes

| PINS Question number: | Question is addressed to: | Question: | Applicant's Response: | Interested Party Response at D1 | Applicant Comment on IP response |
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| 1.11.1. | The Applicant | Scour Protection: Volumes<br>The Marine Management Organisation has provided detailed comments in paragraphs 1.12-1.20 and 1.59 of its relevant representation [RR-049] regarding the maximum total volumes of scour protection presented within the ES project description and limited by requirement in the DCO or condition in the DMLs. Uncertainty between these relate to seemingly differing cable protection, scour protection and disposal volumes.<br><br>a) Please respond to these points using a comparative schedule or similar method of presentation:<br>i. Please clarify the total volume of scour protection that has been assessed within the ES for the turbine structures and offshore substation;<br>ii. Please confirm whether or not these maximum parameters are correctly reflected within the appropriate DCO requirement and DML conditions; and,<br>iii. If not, please provide an updated version of the relevant DCO requirement and DML conditions.<br>b) Please confirm whether any scour protection is proposed for the offshore met mast foundation?<br>• If so, please: specify the parameters of the Rochdale Envelope, signpost to where this has been assessed within the ES and advise whether and where this should be dealt with in the DCO/DMLs. | A. Annex A, of the Applicants' Response to Relevant Representations (Appendix 1 of the Deadline 1 submission) presents the maximum design parameters of Volume 2, Chapter 1: Project description (Offshore) (PINS Ref APP-042/ Application Ref 6.2.1). This document presents the maximum design parameters in a tabular format, including the total scour protection volume assessed. The Applicant seeks to consent a maximum total scour protection volume of 1,112,647.4 m3 and 39,269.9 m3 for all wind turbine generator (WTG) foundations and the offshore substation (OSS) foundation (if required) respectively.<br>The Applicant notes that there is a discrepancy in the transcription of scour protection volumes into the draft DCO, which is presented in Annex B of the Applicants' Response to Relevant Representations (Appendix 1). The Applicant has submitted a revised DCO (and dMLs) (Appendix 35) which has been updated as per the changes outlined in the DCO changes log (Annex B of Appendix 35) of the of the Applicants' Response to Relevant Representations of the Deadline 1 submission).<br>B. The Applicant can confirm it is seeking the provision of scour protection for the Met Mast. A maximum volume of 39,269.9 $m^3$ is being sought for the Met Mast. Full details of the maximum design parameters of the Met Mast being sought for consent is provided in Annex A, of the Applicants' Response to Relevant Representations (Appendix 1 of the Deadline 1 submission). Annex A, of the Applicants' Response to Relevant Representations (Appendix 1 of the Deadline 1 submission) presents the parameters for all relevant parameters inclusive of the offshore met mast foundation. As noted in response to part A, a revised DCO (and DMLs) is included in Appendix 35 of the of the Applicants' Response to Relevant Representations of the Deadline 1 submission. | No further response received from other Interested Parties | No response required from Applicant |
| 1.11.2. | The Applicant | Cable Protection: Offshore | The Applicant can confirm that 25% of cable length for additional cable | No further response received | No response required from |

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| | | Natural England has raised concerns as to the worst case scenario that has been assessed for the cable protection, which is noted as 25% of the total cable length in the array area and the export cable corridor. Natural England believes that this figure is incorrect in view of the number of developments foreseen in the area.<br><br>• Please provide further justification for the worst case scenario that has been assessed for the cable protection (25% of the total cable length).<br>The response should make reference to the maximum permissible volumes for cable protection (and lengths of cabling) that have been specified in DCO requirement 4. | protection has been put forward as a conservative upper limit for the amount of cable protection that may be required for the Thanet Extension Cables. The Applicant understands the concerns that the respondents have with regards to excessive amounts of above ground protection and will work to keep such protection to a minimum as it offers less through project life protection for cables and requires additional ongoing monitoring and maintenance over and above that required for buried cables.<br>Noting the project will endeavour to keep cable protection to a minimum it is also felt important to balance this with the request made by Natural England to ensure lessons learnt from the existing Thanet OWF and NEMO interconnector are applied. The project has therefore sought to ensure appropriate methods of trenching are included within the design envelope, alongside adequate cable protection. | from other Interested Parties | Applicant |

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| 1.11.3. | The Applicant, Natural England, Marine Management Organisation | Scour Protection: Additional DCO Parameters<br>Natural England's relevant representation [RR-053] states that additional parameters are required such that scour and cable protection should be limited by both volume of material and area of impact.<br><br>a) Could Natural England please provide further specific detail about the recent experience alluded to in its relevant representation in this regard?<br>• What does Natural England consider to be the implication of this experience for Thanet Extension Offshore Wind Farm?<br>b) Please could the applicant and Marine Management Organisation respond to Natural England's suggestion that the use of volume parameters alone no longer provides sufficient certainty?<br>c) Could the Applicant please comment as to whether it would be possible and /or appropriate for the DCO and DMLs to provide maximum scour protection areas per turbine. | A. The Applicant can confirm that the introduction of scour protection to the receiving environment has been assessed in the following assessments on the basis of lessons learnt from other projects and consideration of the receiving environment:<br>• Benthic Subtidal and Intertidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5);<br>• Fish and shellfish (PINS Ref APP-047/ Application Ref 6.2.6);<br>• Offshore Archelogy and Cultural Heritage chapters (PINS Ref APP-054/ Application Ref 6.2.13); and<br>• and the RIAA (PINS Ref APP-031/ Application Ref 5.2).<br><br>These assessments concluded that the effects associated with the presence of the requested consent volume of scour protection (1,191,187.2 $m^3$) was not significant in EIA or HRA terms.<br><br>B. It is the Applicants position that the assessment considers volume, height, and area where relevant within the assessment. As such all parameters associated with scour protection are presented with sufficient clarity to give certainty to the regulatory body.<br><br>As identified in the Applicant's response to Natural England's Relevant Representation (response to NE-40), the Applicant is content to provide the maximum cable protection volumes and maximum scour protection volumes on the face of the DMLs in the revised draft Order submitted for Deadline 1. A scour protection management and cable protection plan is secured in Schedule 11, Part 4 (12)(e) and Schedule 12, Part 4 (10)(f) of the DCO which will be required to be approved in writing by the MMO and provides amongst other things the opportunity for a 'sense check' of volumes and areas assessed within the ES and the volumes/areas proposed to be utilised as part of the final design. As such the Applicant does not feel that it is necessary to include this information of the face of the DML. | Natural England's response:<br>"a) The relevant experience relates to an issue which arose in relation to post consent applications for burial / reburial and sandwave clearance at a windfarm in the southern North Sea. It highlighted that the use of volume for assessing benthic impacts was not sufficient as the area impacted by area exceeded that assessed in the application, despite the volume being the same. Based on this experience NE and the MMO determined that in relation to benthic impacts it is more appropriate to condition the activity on volume and area of impact in order to avoid the footprint of the impact exceeding that assessed.<br><br>i. The implications are that the applicants should specifically state the area of impact that will be affected by scour and cable protection, so it is clear what the worst case scenario will be. This is particularly pertinent in designated sites, where it is necessary to determine any potential effects upon the designated features. Without this information being available and conditioned in the DCO there is potential for the actual impacts to be more significant than those assessed using volume alone." | The Applicant notes these responses and considers the answer provided at D1 to address this in their response to the question. A scour protection management and cable protection plan is secured and will be provided to enable a sense check of the scour protection areas against those which were assessed in the ES. All relevant worst case scour protection area parameters have been provided by the Applicant and are presented in Table 3 of Annex A to Appendix 1 of the Applicant's Deadline 1 Submission. As such the Applicant does not feel that it is necessary to include this information of the face of the DML. |

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| | | | | "The MMO notes Natural England has provided comment on a UK offshore windfarm where the developer only adhered to the volume on the marine licence.<br><br>The MMO can provide an example that relates to seabed preparation works of sandwave levelling prior to cable installation being undertaken for Race Bank Offshore Wind Farm (Marine Licence number L/2016/00094). The licence was issued in 2016 for permitted quantities of dredging and disposal, and a request to increase the permitted dredge volumes for the second cable installation was submitted on January 2017.<br>It was evident from the supporting environmental information at for the first phase of sandwave levelling that the footprint of seabed was much greater than the maximum footprint assessed and permitted in the marine licence, although the actual volumes dredged had remained within the permitted quantities.<br><br>This resulted in an impact greater than that which was assessed under Habitats Regulations Assessment (HRA) for the Inner Dowsing Race Bank North Ridge SCI (now SAC) and the Wash and North Norfolk Coast SAC.<br>The MMO supports Natural England's suggestion that the use of volume parameters alone no | |

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| | | | | longer provides sufficient certainty, as indicated in the example above, volumes of permitted quantities were within the assessment however, the footprint impacted was greater than assessed, which could have led to an adverse effect on integrity on a designated site. The MMO considers the above should also be taken into consideration for scour and cable protection. " | |
| 1.11.4. | The Applicant | Effects on Wave Climate<br>Paragraph 2.11.94 of APP-043 states that changes to local wave height as a result of the Thanet Extension Offshore Wind Farm would dissipate over distance towards the coast and be 'immeasurable'.<br><br>a) Please could the applicant provide further detail to support this statement and the conclusion that there would be no morphological changes to any of the coastal feature receptors.<br>b) Could the applicant explain how the assessment has taken account of the potential combined effects of turbines from the Thanet Extension Offshore Wind Farm together with | A. The predicted reduction in significant wave height due to interaction with WTG foundations in the Thanet Extension Array area is approximately 2.5%. This includes the realistic worst-case effect of WTGs in both the Thanet Extension Array area and TOWF. The predicted reduction in the overall sea state wave height is small in both relative and absolute terms. The relative reduction will be smaller than the difference in height between the individual waves that are present at any given time, and smaller than the difference in significant wave height over time (e.g. from hour to hour, varying from calm to everyday to storm conditions).<br>The predicted small reduction in wave height is the maximum expected reduction, which will occur at the downwind edge of the Thanet Extension Array area. With time and distance downwind of the Thanet Extension Array area, wave height will recover toward unaffected conditions due to further input of energy from wind and wave spreading.<br>Any remaining difference in significant wave height at the adjacent coastlines is expected to be so small that it would not be practicably measurable ('immeasurable') using normal wave | No further response received from other Interested Parties | No response required from Applicant |

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| | | those from the existing Thanet Offshore Wind Farm on wave regime in assessing the consequential effects on coastal geomorphology. | measurement technology.<br>Coastal morphological processes are primarily controlled by the wave climate, i.e. the magnitude, frequency and direction of incoming wave energy. As there will be no measurable change to the wave climate at the coast, it is concluded that there will be no measurable change to the naturally occurring rates and patterns of morphological change.<br>B. The method for the assessment of potential impacts on wave height is described in Section 7.4 of Volume 6, Annex 2-1: Marine Geology, Oceanography, Physical Processes Technical Report (PINS Ref APP-070/ Application Ref 6.4.2.1) of the Environmental Statement. The assessment takes account of the potential combined effects of both Thanet Extension and TOWF by accounting for the total obstacle cross section presented by the realistic worst-case and actual installed WTG foundations in the two areas, respectively. | | |
| 1.11.5. | The Applicant | Effects of Migration of Sandwaves<br>In Relevant Representation Winckworth Sherwood on behalf of Port of London Authority (PLA) [RR-054] notes ongoing concerns about the "potential migration of sandwaves into navigable waters between the North East Spit and the shore. The proposals would result in an adverse impact on coastal processes, reducing further the amount of sea room…".<br><br>• Would the Applicant please provide a response? | The naturally occurring migration rate or distribution of nearby sand wave (and sand bank) features are very unlikely to be altered by the presence of turbine foundations in the Thanet Extension Array area. The reasons for this are set out in paragraph 2.11.26 et seq. and paragraph 2.11.77 et seq. of Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (PINS Ref APP-043/ Application Ref 6.2.2) of the Environmental Statement. In brief, this is because the patterns of sediment transport controlling the morphology and evolution of sand wave features will be primarily determined by the patterns of tidal currents and sediment supply, none of which will be measurably influenced at this distance and orientation from the Thanet Extension Array area. The source of the potential effect has no clear pathway to the receptor in this case. | No further response received from other Interested Parties | No response required from Applicant |

## 8 ExQ1.12 Navigation: Maritime and Air

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| 1.12.1. | The Applicant, Port of London Authority, Estuary Services Ltd, London Pilots, London Gateway Port Ltd, Port of Tilbury London Ltd, Trinity House and the Maritime and Coastguard Agency | Navigability of the inshore approach to NE Spit pilot station<br>Several Interested Parties and Other Persons at Issue Specific Hearing 2 (ISH2) raised concerns about continued prudent navigation by deep draught vessels "north-south/south-north" inshore of the proposed Thanet Extension Offshore Wind Farm. Evidence on use of the "inshore route" by large commercial vessels restricted in ability to manoeuvre ("RiAM") by reason of length, type or draught (i.e. on passage between the Dover Strait and the Princes Channel or the Fishermans Gat; to take refuge anchorage at Margate Roads or Tonge anchorages; or to transfer pilots at North East Spit or on passage between the Dover Strait and the northerly extent of the deep-water channels into the Thames at Sunk) as follows:<br>a) what would be a reasonable maximum size of vessel by length, type or draught that is able to prudently use the inshore route at present in moderate MetOcean conditions?<br>b) What is an estimated existing annualised use of the inshore route by "RiAM" vessels in baseline conditions of sea-room without the Thanet Offshore Wind Farm Extension (TEOWF);<br>c) What would be a reasonably foreseeable annualised future use of the inshore route by "RiAM" vessels based on trend for change of vessel size using the Thames ports and anchorages as a whole in baseline conditions of sea-room without TEOWF;<br>d) What would be a reasonably foreseeable annualised future use of the inshore route by "RiAM" vessels as a consequence of the reduction in sea room due to the pinch-point presented between the NE Spit bank | The Applicant refers to Supplementary Note at Annex M to this Deadline 1 submission in support of the response to this ExQ | PLA and ESL response:<br><br>a) The inshore route is currently routinely used by vessels of up to 9m draught and up to 175m length in moderate MetOcean conditions. It is occasionally used by vessels up to 250m and 12m draught; this represents the reasonably maximum size of vessel that can be prudently served in moderate MetOcean conditions on the inshore route. The inshore route is more likely to be used by larger vessels when the outer boarding position, the Tongue, is not in use due to adverse weather conditions.<br>b)-d) From a boarding and landing pilots perspective, RiAM would be heavily affected by operational sea room as well as draft, because of the potentially large deviation in heading that may be required to make a lee. Depth of water is not the only factor that can restrict a vessel: for example, a tug and tow can display RiAM signals when engaged in towing operations that restricts their ability to deviate from their course. With this in consideration, a substantial number of the current vessels could be considered RiAM if there is a reduction in existing sea room (this reduction is greater when incorporating a 500m safety zone).<br>Due to this variation and the time constraints, the PLA and ESL do not have sufficient data available in order to produce more precise estimates prior to Deadline 1, but will continue to seek to establish what information can be provided concerning the use of the inshore route by RiAM vessels. | a) The Applicant notes and agrees with this aspect of the response and draws ExA attention to the following information (as per Section 5 Para 34 – 36 of Appendix 25 Annex M) which present that:<br>a. The largest length of vessels observed using the inshore route from the vessel traffic survey is 299m LOA (only 3 vessels over 240m LOA) and the maximum draught of vessel observed using the inshore route is 10.1m draught.<br>b. The most frequent length category of vessels using the inshore route is between 90 – 120m LOA and for draught of vessels observed using the inshore route, it was for vessels between 5 and 7.5m draught.<br><br>b) - d) The Applicant notes the definitions of 'Restricted in Ability Manoeuvre' and 'Constrained By Draught' (Section 3.3 Para 15 – 23 of Appendix 25 Annex M) and how they relate to classification and usage of the inshore route by existing and future vessels. The Applicant has provided a breakdown of vessel usage by length, draught and type in tabular and graphical form showing usage of the available sea room by these parameters. The applicant does not agree with the statement "continued use of the inshore route by RiAM vessels is likely to be intolerable in most MetOcean conditions" and also does not consider that boarding and landing operations will become redundant. Further explanation, in terms of sea room requirements for vessels using the inshore route is provided at Appendix 3 of this Deadline 2 submission evidenced by analysis of the sea room used by existing transiting the area (using the vessel traffic survey data) and application of MGN543. |

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| | | and the proposed TEOWF Red Line Boundary plus 500m. proposed safety zone during construction and maintenance, with vessel size mix and volume of traffic using the Thames ports and anchorages as a whole as per baseline;<br>e) What would be a reasonably foreseeable annualised future use of the inshore route by "RiAM" vessels as a consequence of the reduction in sea room due to the pinch-point presented between the NE Spit bank and the proposed TEOWF Red Line Boundary plus 500m. proposed safety zone during construction and maintenance with reasonable predictions of change of traffic mix based on trend for change in vessel size and number of vessels using the Thames ports and anchorages as a whole.<br><br>In responding to this question, please have regard to Annex 3 of MGN:543 – "Shipping Route" Template Notes and indicate whether continued use of the "inshore" channel by "RiAM" vessels is likely to be intolerable, tolerable on the basis of being ALARP (identifying the risk assessment and mitigation measures that control risk to ALARP) or broadly acceptable. | | The TEOWF would substantially reduce the sea room to the south-west and north-west of the existing wind farm on the inshore route. The reduction is such that the continued use of the inshore route by RiAM vessels is likely to be intolerable in most MetOcean conditions. It is likely to result in RiAM vessels being unable or unwilling to use the inshore route during construction and operation of the TEOWF. Further, the PLA and ESL consider that with the increased risk to vessels, it would not be safe to continue to undertake boarding and landing operations in the area of the NE Spit diamond; this position would become redundant. Those vessels that currently board and land pilots at the NE Spit via the inshore route would be forced to use the Tongue boarding and landing position, which will itself need to be re-located further to the north of its existing position to accommodate the TEOWF.<br>Only vessels that currently transit the area via the inshore route, but do not need to board or land a pilot, could continue to use the inshore route – provided the Master was content to do so – as these vessels would no longer be in conflict with boarding and landing operations due to the redundancy of the NE Spit.<br>The decision to bring deeper drafted vessels to the inner boarding ground would be primarily driven by the DPC (duty port controller for PLA) or Medway duty pilot, the ships master, MetOcean conditions and the pilot and then finally agreed with ESL. These are assessed on a case by case basis. Frequently vessels with a draft over 10m are served to the East of the inner boarding ground towards the deeper water area. The usage of the Margate Roads anchorage is unlikely to decrease due to the TEOWF because of the shelter | Furthermore, the Applicant maintains that that boarding and landing operations remain feasible for vessels that board and land pilots at NE Spit diamond via the inshore route. This evidenced by analysis of vessel traffic datasets, the bridge navigation simulation and also with reference to MGN543 and the submissions of LPC provided at Deadline 1. |

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| | | | | it affords smaller ships. This potential through traffic into the anchorage through a reduced 'sea lane' is likely to create additional restrictions for boarding and landing pilots. | |
| | | | | PoTLL/ London Gateway response:<br><br>a) 400 metres length / 14 metres draft<br><br>b) to e):<br>The number of ship calls to POTL and DPWLG in the year to 30/11/18 was 3533 and 1054 respectively. An informed assessment of the number of these ships which routed via the inshore channel, or may do so in the future, with or without the TEOWF in place, requires historical information that neither POTLL nor LGPL receive or hold at present. POTLL and LGPL are, however, of the understanding that such information is available within the wider UK shipping and maritime community and are in discussions with other Interested Parties regarding its provision to inform the ongoing Examination process.<br><br>POTLL and LGPL are of the view that continued use of the inshore channel by RiAM vessels is likely to be intolerable. | a) The Applicant does not agree with the 400m LOA and 14m draught vessel which is significantly in excess ( by >100m LOA and 3.9m draught) than that evidenced by the vessel traffic survey data (as per Section 5 Para 34 – 36 and accompanying schematics) also conflicts with the response by PLA and ESL.<br><br>b) – d). The Applicant notes that whilst the number of ship calls to POTLL and London Gateway are as stated albeit this does not indicate the routes by which these vessels access these ports and specifically the volume of traffic to/from these ports which navigate via the Fishermans Gat or Princes Channel or the deep water routes via the SUNK and/or the usage of transfer Pilot Transfer Stationss at (NE Spit, Tongue, NE Goodwin and SUNK). This information is understood to likely be available via the PLA's POLARIS system which will provide detail of a vessels port of entry/departure and pilot transfer. As regards information on forecasts, the Applicant requests that further information be placed before the examination regarding existing and future traffic profiles. The Applicant does not agree that future use of the inshore route (noting this is not a defined channel) by RiAM vessels will be intolerable. |

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| | | | | Trinity House response:<br><br>We are unable to answer question as TH use current data when assessing such projects and are unable to predict future trends in traffic flow<br><br>Unlike the NRA, which averages out large vessel movements over a 24hr period, we assume these will be within a tidally restricted time frame. During these time frames the risk highlighted in the NRA by the compression of traffic will be increased. | a) The Applicant notes that tidal distribution and relationship of transits to tidal times has been considered within the NRA (Reference Section 7.1.3) and furthermore notes that the limiting depth constraints of the NE Spit area are equivalent to those of Princes Channel and Fishermans Gat (as outlined in Appendix 25, Annex M to Deadline 1 submission, Para 9).<br>. |
| | | | | MCA response:<br>The MCA supports the concerns raised by other consultees regarding pilot boarding and landing. There is a clear interface with the safety of navigation; longer passage plans, deviation, impact on pilotage boarding, which result in additional requirement on navigators, lookout personnel; ships' Safety Management Systems); emergency response preparedness etc.<br><br>It is highly likely that large vessels will be tidally constrained at specific times, and it is then when the risk increases. We expect these results would look different to the applicant's NRA which averages these movements out over a 24h period. | a) The Applicant notes the MCA's reflection of concerns raised by others. As the statutory authority for marine navigational safety in the area beyond the PLA's VTS limits (which intersect the exiting wind farm within the study area) the Applicant continues to seek to identify the MCA's own position to safety of navigation in the study area<br>b) The Applicant notes that tidal distribution and relationship of transits to tidal times has been considered within the NRA (Reference Section 7.1.3) and furthermore notes that the tidal level constraints of the NE Spit area are equivalent to those of Princes Channel and Fishermans Gat (as outlined in Appendix 25, Annex M to Deadline 1 submission, Para 9). |
| 1.12.2. | The Applicant | Traffic along the NW façade of the proposed RLB<br>Responding to concerns raised at ISH2 about the survey data presented in the NRA, please present a gate analysis of the | The Applicant has created an additional Gate Analysis termed F – see Annex H for details. This Annex contains:<br>• Schematic Plot of Gate F by transit numbers | No other Interested Parties have provided responses to this ExQ | The Applicant therefore has nothing further to add. |

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| | | surveyed traffic passing SW-NE/NE-SW past the North West façade of the proposed RLB. | • Chart / graph of Gate F vessel transits by length<br>• Chart / graph of Gate F vessel transits by draught<br>The Gate Analysis shows the distribution of traffic passing the NW façade of the proposed RLB, showing two distance peaks – which relate to vessels passing in and out of the NE Area (either for pilot boarding or to make use of the Margate Road Anchorage) and through traffic continuing directly into or out of the Port of London Statutory Harbour Authority area. The distribution of vessel lengths and drafts also reflects the general use of the area with limited numbers of vessels over 200m in length or 10 m in draft.<br>Reference is also made to the schematic plots from ExA Questions 12.1.1 and Annex G to this Deadline 1 submission showing the distribution of vessel types, lengths and drafts for these routes. | | |
| 1.12.3. | The Applicant, Port of London Authority, Estuary Services Ltd, London Pilots, London Gateway Port Ltd, Port of Tilbury London Ltd, Trinity House and the Maritime and Coastguard Agency | Conditions for pilot transfer simulation<br>Responding to concerns raised at ISH2 about the continued ability to board pilots in adverse MetOcean and draught-constrained vessel manoeuvering conditions at the existing NE Spit pilot station, please identify whether the Bridge Simulation of feasibility of pilot transfer was adequate or not, covering the following points:<br>a) to what extent can the ExA rely on the conclusions of the Simulation carried out?<br>b) how many simulated runs in different MetOcean conditions would provide a reasonably robust test of feasibility and operating risk?<br>c) what variables in MetOcean conditions would be reasonably representative of baseline normal operating conditions which would enable the NE Spit pilot station to remain "on station" without the proposed Thanet Extension? | Supplementary note has been prepared at Annex N of this Deadline 1 submission. | PLA and ESL response:<br>a)<br>In the PLA's and ESL's view, the ExA cannot rely on<br>the conclusions of the Bridge Simulation to determine if pilot boarding and landing operations could safely continue in the area of the NE Spit boarding and landing diamond with the proposed extension in place.<br>Bridge simulations are an accepted process when<br>investigating the possible impact of a development such as the TEOWF. However, in this instance the PLA and ESL have concerns about the planning and technical restraints of the simulator study and the rigour with which it was carried out, which make the conclusions drawn from it unreliable.<br><br>b) Any future simulation study would have | a) The Applicant refers to the response provided within Section 3 of Appendix 25 Annex N noting specifically that PLA and ESL were integrated into the planning process and had opportunity to comment and rectify planning and technical restraints (of the methodological process and or the simulator itself) during the following stages:<br>a. Consultation meetings (inc. meeting minutes)<br>b. inception report<br>c. set-up day<br>d. simulation workshop<br>e. simulation report<br>*b)* The Applicant refers to their response provided within Section 4 of Annex N and considers that the numbers of runs were adequate and representative. The Applicant notes the reference by PLA and ESL to the |

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| | | d) to what extent the exercise represented "real world" conditions in respect to local knowledge and communications ability in English of the actors in the simulation and their learning gained by performing multiple runs during the simulation?<br>e) to what extent did the exercise incorporate impinging factors such as small vessels without AIS and crossing traffic?<br>f) are there any other relevant factors or considerations that should have been taken into account? | | to have a<br>greatly increased number of simulations in order to provide a robust test of feasibility and operating risk, based on a more thorough and representative set of runs. The runs would need to represent the extent of environmental conditions and traffic situations that may be encountered, which the runs carried out for the Bridge Simulation do not. A range of emergency scenarios would need to be simulated and more realistic traffic situations, including those where ships / bridge crews do what they are expected to. The PLA simulator is not necessarily the best tool to use to quantify the operational risk, as it cannot realistically simulate the sea conditions and other environmental factors, or on-board situations.<br>Annex 1 of MGN 543 notes that the use of the MCA's Methodology for Assessing the Marine Navigational Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI) should be closely followed. This methodology document states that 'Where appropriate the algorithms should include the results of Rule violations, mistakes, lapses or slips, these categories being transparent and variable amongst the simulation algorithms' (section B. 1.3 – Design Traffic and Types: Human Element). However, no emergency situations or rule violations were tested during the Bridge Simulation.<br>The purpose and extent of any future simulation discussed and agreed upon with relevant stakeholders, including the PLA and ESL, in advance of runs being carried out, in order to achieve a thorough bridge simulator design and specify an appropriate number of runs to provide a robust test of feasibility and operating risk.<br><br>c) The conditions below should serve as a | methodological document *Methodology for Assessing the Marine Navigational Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI)* and notes that the NRA was supported by navigation simulation <u>and</u> the collision risk modelling to ensure good practice of incorporating a fit for purpose evidence base to the overall assessment. The intention to undertake collision risk modelling was discussed in the consultation with PLA on 03-Jul-17 and stated in the simulation inception report and simulation findings report. The collision risk modelling (which it noted is used extensively by the PLA in the Upper District to quantify navigation risk) includes algorithms which incorporating baseline vessel traffic data (includes representative human element factors, rule violations, weather conditions, etc). It is noted that exploration of emergency situations was outwith the focussed scope of the simulation – which was, as agreed, to test feasibility of the pilot operations under normal conditions.<br>The Applicant notes the PLA consider the capability of the PLA simulator to be "highly advanced" and state "Pilots can test out and perfect manoeuvres against a background of the highest wind speeds and worst weather" (Source PLA Handbook 2018). The simulator is used extensively for pilot training purposes and also for familiarisation and in testing new and updated vessels and infrastructure.<br>c) The Applicant notes this useful |

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| | | | | basic guide to baseline MetOcean conditions worked by ESL. Other conditions that can further influence this baseline are the strength, state (height) and direction of tide, and historical wind conditions (wind history in hours and direction).<br>West-North-West to South:<br>0 - 40 knots: With a wind direction starting at west-north-west through to southerly ESL can work all boarding positions with no restrictions.<br>40 /45 knots: The use of the Tongue would mostly likely become restricted and any shipping needing to be served at this location would be assessed on a case by case basis (it maybe that the area can be worked at low water for example).<br>45 knots and above: this would mostly likely result in the Tongue and NE Goodwin being suspended (depending on the size of vessel being served, vessels over 10m draft and 200m length overall (loa) would be considered on a case by case basis).<br>The inner boarding position is particularly sheltered and can be worked fully in 45+ knots. It is very rare for the inner boarding ground to be off service with this wind direction.<br>South to South-East:<br>0 - 40 knots: would not cause a disruption to the service at any of the boarding areas.<br>40 – 45 knots: The NE Goodwin and Tongue boarding areas would possibly see a restriction put in place and vessels/runs would be assessed on a case by case basis.<br>45 knots and above: Most likely to result in a suspended service at NE Goodwin and the Tongue (depending on the size of vessel being served, vessels over 10m draft and 200m loa would be considered on a case by case basis). ESL would still expect to operate a full service at the inner boarding position, winds would have to consistently exceed 50 knots before it considered any | submission and requests confirmation that this relates to the 'planning diamond tool as referenced by ESL at the meeting held on 14-Aug-2017, and not yet received by the Applicant.<br>d) The Applicant also refers the ExA to the Physical Processes chapter (Application Ref 6.2.2 and the series of wind and wave roses that represent a 40 year dataset for this location.<br>e) The Applicant refers to Section 6 of Annex N, and notes that ESL and PLA participated in the set-up of the exercise and did not provide contrary comment at that time on issues which weren't addressed to the agreement of participating parties to a level sufficient to undertake simulation from which meaningful conclusions can be drawn (nor did they comment in the associated documentation). The use of the tug in lieu of the pilot launch was reviewed with ESL (and PLA) and agreed (as reported) to be sufficiently facsimile for purposes of simulation and provides an element of precaution to the simulation outcomes. Provision of an ECDIS screen was made in lieu of radar to ensure that comparative information was available<br>f) The Applicant refers to Section 7 of Annex N and notes that interactions with other traffic (such as non AIS vessels and crossing traffic) was primarily addressed through other aspects of the overall assessment (collision risk modelling for example) and therefore the objectives of the bridge simulation were specifically focussed on the question of sea |

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| | | | | restrictions or full suspension, again very rare when the wind is in this direction.<br>South-East to East:<br>0 – 35 knots – Full service at inner boarding position, the Tongue likely to be in service but would possibly see the introduction of restrictions at NE Goodwin. Larger vessels would be assessed case by case.<br>35 – 40 knots – NE Goodwin and Tongue would very likely be restricted and possibly fully suspended. Also likely that a restricted service would introduced at the inner boarding ground. As a guide this would usually mean no vessels under 6m draft and no freeboards under 1.5m but vessels will be assessed on a case by case basis.<br>40+ knots: Highly likely NE Goodwin and Tongue boarding positions would be suspended and a restriction would be in place at the area around the NE Spit (the "inner boarding" area).<br>East to North:<br>0 – 25 knots: Full service at inner boarding ground, and Tongue and NE Goodwin would be on full service for larger vessels (over 10m draft). Where possible all traffic would be brought to the inner boarding ground.<br>25 – 30 knots: Full service at inner boarding ground but possibly a restricted service at Tongue/NE Goodwin, drafts over 10m may still be considered but conditions would be difficult and boarding would be a case by case assessment.<br>30 – 40 knots: Inner boarding ground could see restrictions put in place, as a guide this would usually mean no vessels under 6m draft and no freeboards under 1.5m. Highly likely to see a restricted service at both the Tongue and NE Goodwin, very large vessels would possibly be considered (over 200m and possibly 12m draft and above) but this would require extensive planning with the ports and pilots.<br>40 – 45 knots: Highly likely to result in a | room for pilot transfers.<br>g) The Applicant refers to Section 8 of Annex N. The Applicant states that contrary to the IP response, the grading criteria for the study <u>was</u> discussed and agreed with participants prior to commencement of the simulation runs, and that all participants contributed to the debrief and assessment of each run and the overall simulation workshop. |

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| | | | | restricted service at the inner boarding ground, tidal conditions would become a major factor (low water offering the best opportunity to work but that window could only last for a couple of hours). The Tongue would likely be suspended and NE Goodwin would be restricted or potentially suspended.<br>45 knots and above: Both The Tongue and NE Goodwin would be suspended. Inner boarding area would also very likely be suspended.<br>North to West-North-West:<br>0 - 30 knots: Full service at inner boarding ground and the Tongue and NE Goodwin would be on full service for larger vessels (over 10m draft). Where possible all traffic would be brought to the inner boarding ground.<br>30 – 40 knots: Inner boarding ground could see restrictions put in place, which would usually mean no vessels under 6m draft and no freeboards under 1.5m. Highly likely to see a restricted service at the Tongue, very large vessels would possibly be considered (over 200m and possibly 12m draft and above) but this would require extensive planning with the ports/pilots. NE Goodwin likely to be restricted but would become the preferential position for larger traffic (over 10m draft).<br>40 – 45 knots: Highly likely to result in a restricted service at the inner boarding ground, tidal conditions would become a major factor (low water offering the best opportunity to work but that window could only last for a couple of hours). The Tongue would likely be suspended, NE Goodwin would be restricted or potentially suspended.<br><br>d) The extent to which the exercise represented real world conditions was very limited. The simulator presented an | |

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| | | | | unrealistic and sterile version of shipping and landing at the NE Spit pilot station, and favourable conditions to those that are experienced in 'real world' scenarios. In particular:<br>i) Communication between pilot launch and all vessels served was good with no language/communication 'barrier' tested. There was no provision made for the potential lack of understanding of the cutter's requirements in the case of any restricted ability to communicate in English.<br>ii) All vessels were 'manned' by participants with extensive local knowledge as either a pilot or launch coxswain, which would not be the case in real conditions. The simulations did not fully take into account the lack of local knowledge of a Master bringing his vessel to the NE Spit for the first time.<br>iii) MetOcean Conditions:<br>•The extent to which the PLA simulator can re-create true environmental conditions is limited. It does not represent true darkness and does not give a true impression of the weather that may be being experienced. The simulation runs undertaken did not represent the full range of environmental conditions, e.g. wind strength and direction in which the pilot cutters are able to operate, using a maximum of 25 knots.<br>•It was agreed between the Applicant and ESL that 25 knots could represent 'challenging operational conditions', particularly from the direction of north west through to east but ESL expressed concern that the simulator did not realistically represent 25 knots.<br>In ESL's experience winds of 25 knots from the northwest through to east would generate a minimum wave height of 1.5m (and above), which would be further influenced and increased by tidal conditions (height, strength and direction), historical | |

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| | | | | weather conditions (wind history in hours and direction) and charted depth of water. These effects were not apparent during the simulation. Height of tide during the simulation was represented by two states of tide (being either high water or low water (+3)) which is not an exhaustive representation of the scope of tidal heights, and in particular does not represent low water conditions. Vessels of a deeper draft (approx 10m) can be served closer to low water, this would be factored into the launch programme typically after consultation with the coxswain/DPC and pilot. A larger (10m draft) vessel being served closer to low water would have to remain to the east of the boarding ground, at least 1nm depending on other traffic.<br>•Visibility issues, although factored in, cannot be adequately accounted for in the simulation. Night conditions under the simulation are closer to a representation of summer/dusk conditions. Pilot launches are heavily reliant upon radar in reduced visibility but the tug simulator did not have a radar which, in real world conditions, would have been essential for 5 of the simulated runs.<br>•Met-ocean conditions in the simulator did not reflect the reality of launch/ship interaction.<br>iv) Pilot Launch:<br>•The simulator does not have a model of a pilot cutter so the pilot cutter was substituted with a tug, which reacts very differently. This raised obvious issues in terms of a 'true' launch representation. The tug's handling alongside the ship and interaction with MetOcean conditions were very limited. The tug simulator, as explained in iii) above (MetOcean conditions), was also without a radar facility which is an essential navigational tool used on pilot launches, particularly in reduced | |

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| | | | | visibility; ESL standing orders are that they cannot proceed to sea without a fully operational radar.<br>v) No emergency scenarios were simulated<br>vi) Other craft<br>•Overall, representation of leisure/'other' craft was too simplistic, particularly as all traffic outside of pilotage behaved in full compliance with the rules of the road which is not always the case in real world conditions.<br><br>e) The representation of crossing traffic and small vessels without AIS, such as leisure craft, was overly simplistic. Mostly notably, all traffic outside of pilotage behaved in full compliance with the rules of the road which, as previously stated, does not accurately represent the real world experience. The simulations involved up to four vessels, coming to or from the pilot station, at any one time. A couple of runs included an additional vessel passing through the area, but the simulations did not include the range of small vessels such as recreational vessels and crossing traffic, such as windfarm support vessels, that may be found in the area. Unlike in real world conditions, there was no radar available to track 'unknown' small craft. Instead their presence was tracked on a 'chart plotter' display, which ESL would not in real world conditions be able to rely upon.<br><br>f) Due to the high volume of traffic that can be served at the NE Spit there are often be scheduling issues. Typically these occur when multiple vessels are travelling both inward and outward consistently over a period of several hours. Whilst the boat programme tries to account for this there can often be spontaneous adjustments made to the run programme by the launch coxswain. Unforeseen delays – for example | |

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| | | | | due to deteriorating weather, incorrect ladder preparation, or traffic congestion – means vessels may need to be 'pushed back' to the following run to accommodate other shipping. This 'pushed back' vessel will have to remain in the vicinity of the boarding ground while avoiding conflict with other traffic. During the simulator process every run was individual and isolated with no consideration given to intensive multiple run workload periods.<br>In ESL's view, the 'failure criteria' (1-6) seem unlikely to occur with the types of scenario being tested (section 4.2, Simulation Run Grading of the Bridge Simulation Report). Apart from point 1 (Ship lost control and was unable to manoeuvre safely), which was not factored into any of the simulations, each of the 'failure criteria' points would be very hard to meet when looking at the limitations of the simulator (limited number of vessels being simulated at any one time for example) combined with the experience of the participants in the study. All non-pilotage vessels in the study were operated by a pilot or pilots and fully adhered to the rules of the road, which was combined with good communication and all participants being aware of the structure of each run. The conditions were therefore favourable to what would be experienced as a whole in practice. Further, the successful/marginal/failure criteria for the study should have been discussed with all stakeholders, and reviewed based on the feedback received. | |

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| | | | | PoTLL/ London Gateway response:<br>a) POTLL and LGPL are of the view that the Pilot Transfer Bridge Simulation report is of limited reliability and have set out factors of concern in Appendix A to their Written Representations submitted at Deadline 1 in response to point 17 of the ExA's ISH2 Actions List (Document Reference: EV-003).<br><br>b) To POTLL and LGPL's knowledge there is no set guidance regarding the number of simulation runs however POTLL and LGPL consider that in order to provide a reasonably robust test of feasibility, simulation runs for each of the 16 points of the compass (NNE) for at least 3 wind conditions (force 5, 7 and 9) would need to be carried out Simulation runs for a range of these wind directions/strengths should then be carried out for varying ocean conditions (i.e. wind against tide) and fog in addition to scenarios relating to unforeseen events such as engine failure and the presence of leisure and fishing craft.<br><br>c) The NE Spit pilot station will remain on station with any wind direction, in any tidal conditions up to and including Force 9 wind strength.<br><br>d) POTLL and LGPL consider that the simulation runs carried out:<br><br>i) were poorly representative of the range of real world conditions that would reasonably be expected to be encountered over a reasonable study period; and<br><br>ii) were carried out with reference to only moderate conditions and did not take account of potential extremes in | a) The Applicant refers to their response provided within Section 3 of Appendix 25 Annex N which provides a detailed basis of why the bridge simulation can be c relied upon. In response to the specific points of Appendix A to their Written Representations submitted at Deadline 1 in response to point 17 of the ExA's ISH2 Actions List (Document Reference: EV-003 the Applicant has provided a response in Appendix 4<br>b) With the agreement of the participants, the metocean conditions selected were prioritised to provide a representative set of conditions. With regards to the compass points it should be noted that a full compass sweep was tested and that 8 of the 14 runs (20 of the 30 transfers) were conducted with wind directions in the sectors from West-North-West through South (clockwise) (as stated by ESL in ExAQ response to 1.12.3) where NE Spit is used more due to a greater propensity for Tongue, SUNK NE Goodwin to be off station. Wind strengths of 25kts as tested represent a Beaufort Force 6 or 'Strong Breeze' and were agreed with participants.<br>c) As stated by ESL (in ExAQ response to 1.12.3) the NE Spit remains on station in Force 9 (41-47kts) however is often restricted at wind speeds in excess of 30kts (Force 7) for wind directions from West-North-West to East and in excess of 35kts for wind directions from South-East to East.<br>d) The Applicant, as stated in Para 13 of Appendix 25 Annex N, and with |

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| | | | | circumstances.<br><br>For example, the simulation runs considered only 25 knot winds (pilots are known to operate in up to 75 knot winds); the presence of leisure or fishing craft was not taken in to account; and language difficulties (which can be encountered when vessels sailed by foreign crews enter the Thames) did not occur.<br><br>e) POTLL and LGPL's review of the simulation report suggests that such factors were not considered.<br><br>f) Yes, mechanical engine/rudder) failure, foreseeable accidents, fog and the need for the pilot boat to abort the boarding process. | reference to long term hindcast wind data, considers that the wind conditions as tested are representative and not moderate. Some other traffic types were incorporated into the simulation although, as stated, the collision risk modelling<br>e) The Applicant notes that failures, poor visibility and the need for the pilot boat to abort (e.g. due to ladder rigging failure) were incorporated into the simulation run plan and also formed a component of the grading criteria as reviewed by all participants following each run. |
| | | | | MCA's response:<br><br>As stated as part of Action 17, the MCA believes that there are limitations to the reliability of the simulation study, as it used experience pilots in familiar waters and is unlikely to reflect the variety of real life scenarios experienced in the marine environment at that location. | The Applicant refers to their responses above and provided within Section 3 of Annex N. |
| | | | | Trinity House's responses:<br><br>As documented in the minutes of meetings between the application and TH we still maintain that the Pilot Transfer Simulation was undertaken under sterile conditions with experience personnel and that this does not adequately reflect "real world" conditions. | The Applicant refers to their responses above and provided within Section 3 of Annex N. |
| 1.12.4. | The Applicant | Consideration of effects of relocation of NE Spit pilot station: Responding to concerns | The Applicant refers to Supplementary Note at Annex O of this Deadline 1 submission. | PLA and ESL's response:<br>a) The proposed Thanet Extension Red Line | The Applicant refers to their response provided within Section 3 of Annex O. |

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| | | raised at ISH2, please comment on the opinion recorded in minutes of Dec 2017 meeting with ESL (appended to the NRA [APP-089]) that moving the NE Spit pilot station from its current location would be sub-optimal because it had been carefully located as a consequence of the Thanet Offshore Wind Farm project to be "2nm from all hazards and therefore makes maximum use of the space":<br>a) to what extent the proposed Thanet Extension Red Line Boundary plus safety zone during construction and maintenance would encroach within that zone of 2nm radius from the NE Spit pilot station diamond?<br>b) to what coordinates the NE Spit boarding station diamond could be relocated in order to maintain an operating zone of "2nm from all hazards"?<br>c) what hazards or obstacles whether geographic, physical or based on use of the sea space should be considered as bounds for this operating zone?<br>d) What account has been taken of the consultation with Estuary Services Ltd in regard to the effects to pilot operations, to navigational safety and the operating efficiency of commercial shipping, fishing and ports of relocating the NE Spit boarding station.<br>Ref: minutes of Dec 2017 meeting with ESL appended to Section 4 of the [APP-089] NRA. | | Boundary<br>(RLB) plus 500m safety zone would encroach on the 2nm radius by 0.5nm; the RLB to the boarding ground is 1.7nm (3148meters) less 500m (safety zone) = 2648m (1.43nm). The existing TOWF boundary is approximately 3.2nm from the pilot boarding ground. ESL would consider 2nm to be a minimum 'working' area with a buffer of at least 1nm being required in additional to that working area. The current boarding area is unchanged from its pre-TOWF position because of 3.2nm distance between the pilot boarding ground and the existing TOWF boundary. The current Tongue location is as a result of a relocation necessitated by the construction of the existing TOWF.<br>b) to d) N/A (for Applicant to respond) | a) The Applicant specifically requests the evidential basis of a 2nm minimum working area radius (on the assumption that ESL assume radius and not diameter) plus the further 1nm buffer. The Applicant notes that the 2nm radius does not exist in current conditions due to existing constraints. The Applicant agrees with the noted comment on Tongue albeit it was also implemented to create a deep water alternative to NE Spit. It is unclear why Tongue is not used more in normal operating conditions – specifically when drawing comparison between the wind rose evidence (Figure 2.6 of Chapter 2 of Volume 2 (Marine Physical Processes PINS Ref APP-043/Application Ref 6.2.2) and the evidence presented by ESL and PLA in response to ExA Q 1.12.3 at Deadline 1 which indicates Tongue is on station at up to 40kts wind speed for wind directions between West-North-West through to South-East, up to 35kts between South-East and East and up to 25kt/30kts from all other directions (with restrictions coming into place for vessels <10m draught). The Applicant notes (with reference to the wind rose) that wind speeds of up to 19.4 kts account for circa 50% of the time indicating that, at a minimum, Tongue is on station for an equivalent period of time (and considerably more when analysing the wind rose by direction).<br>b) – d) as per Annex O |
| 1.12.5. | Maritime and Coastguard | Hierarchy of appropriate risk assessment:<br>This MCA/DECC 2013 methodology advises | The Applicant anticipates that further information will be placed before the | MCA's response:<br>The key features of the Methodology are | The Applicant welcomes the continuing observation that the MCA, as a statutory |

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<td>the development of a "hierarchy of assessment" (see Annex D1 p63 Table 1). With respect to this recommended hierarchy of Navigation Risk Assessment would MCA confirm to what extent it is satisfied that for the Thanet Extension Offshore Wind Farm application to date:<br>a) "Site Specific Assessment" has been carried out; and<br>b) This was carried out in compliance with Definition 4 on page 65.<br><br>Ref.: MCA/DECC 2013 Methodology Annex D1 p63 Table 1</td>
<td>examination at Deadline 1, although notes that no issues have been raised to date by the MCA on the Navigation Risk Assessment methodology and supporting studies.<br><br>In order to assist the ExA in reviewing the questions please find some notes below.<br><br>A. "Site Specific Assessment" has been carried out; the Applicant believes the ExA is referring to Table 18 of the guidance which relates to the Hierarchy of Assessment and Trials in support of the Formal Safety Assessment, and has represented the table (above) with an extra column which references the analysis undertaken and the supporting studies that have been conducted in support of the Navigation Risk Assessment.
<table>
<tr><th>#</th><th>Possible Hierarchy of Assessment and Trials in Support of Navigation Risk Assessment</th></tr>
<tr><td>1a</td><td>Area Traffic Assessment of the Strategic Area leading to</td></tr>
<tr><td>1b</td><td>Area Traffic Assessment of the OREI Area leading to where necessary</td></tr>
<tr><td>2a</td><td>Specific Traffic Assessment in and around the OREI Area leading to (where necessary and appropriate to the development proposal)</td></tr>
<tr><td>2b</td><td>Specific Traffic Simulation in and around the OREI Area leading to (where necessary and appropriate to the development proposal)</td></tr>
<tr><td>3</td><td>Specific Traffic Bridge Control Simulation in and around the OREI Area for training and research purposes leading to (where necessary and appropriate to the development proposal)</td></tr>
<tr><td>4</td><td>Site Specific Trials</td></tr>
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Increasing Human Involvement</td>
<td>that developers should:<br>1. Produce a submission that is proportionate to the scale of the development and the magnitude of the risks.<br>2. Produce a submission based on assessing risk by Formal Safety Assessment (FSA) using numerical modelling and/or other techniques and tools of assessment acceptable to government and capable of producing results that are also acceptable to Government.<br>3. Estimate the "Base Case" level of risk based on existing densities and types of traffic and the existing marine environment.<br>4. Predict the "Future Case" level of risk based on the predicted growth in future densities and types of traffic and reasonably foreseeable future changes in the marine environment.<br>On this occasion we do not have any major concerns with regards to the process the applicant has followed with regards to FSA in their NRA. Our concerns are regarding the conclusions made, the risk mitigations applied and the overall assessment of the risks being tolerable.<br><br>In addition, as stated in the response to Action 10 The Formal Safety Assessment checklist which is part of MGN 543 was not included in their NRA making it difficult to identify the full implementation of FSA, and leaves it open to misinterpretation and assumption. This was raised with the Navigation Risk consultants who undertook the NRA.</td>
<td>stakeholder in the project area and authors of MGN543, do not have specific or major concerns with the process the Applicant has followed with regards to FSA in their NRA. The Applicant would therefore welcome feedback/discussions on the apparent methodological disconnect between the correct approach being followed and the concerns that the MCA have on the overall assessment of the risks being tolerable.<br><br>The Applicant notes that the MGN543 checklist was included in the NRA albeit recognises the comments in relation to enhanced signposting within the checklist (as discussed at the meeting on 23-Aug-2018 and in a follow up meeting on 19-Sep-18) noting that 'comments were only minor' (Ref email from Helen Croxson to Jamie Holmes on 31-Aug-18). Notwithstanding that the MCA had observed the submission complies in full with the checklist, an updated checklist was not re-submitted (noting this was post submission) but the Applicant has elected to now undertake this to aid the ExA and other Interested Parties. The MGN543 checklist is provided at Annex 10E to this Deadline 2 submission.</td>
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| | | | • This was carried out in compliance with Definition 4 on page 65.<br>• The Applicant wishes to draw attention to the ExA that the MCA have confirmed the NRA has been undertaken in compliance with MGN 543 which references both the:<br>• Methodology for Assessing the Marine Navigational Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI) – 2013<br>• Methodology for Assessing the Marine Navigational Safety Risks of Offshore Wind Farms - 2005 | | |
| 1.12.6. | The Applicant | Cumulative effects of increased density of traffic:<br>Please provide further detail of to what extent the effects of increased congestion of traffic around the development have been assessed to increase the frequency of occurrence of the following risks in reasonable worst case MetOcean conditions in which the navigable water inshore of the proposed Thanet extension can be expected to be used:<br>a) ship collision;<br>b) ship grounding;<br>c) ship stranding; and<br>d) ship/WTG contact. | The Applicant has assessed the increased density of traffic brought about by the development for:<br><br>A. Ship collision;<br>Collision risk has been assessed though identification of 21 construction / decommissioning and 15 operational collision hazards that cover the NRA study area – 5nm buffer of the proposed Thanet Extension Offshore Windfarm.<br>Collision risk modelling (see NRA Section 7.3) was undertaken to assess the change in risk brought about by the development, which includes the inshore route between the extension and the shore. The collision risk modelling was undertaken by using 1 month of AIS data from December 2016 – which accounts for a worst case MetOcean conditions a winter month was used.<br>Vessel tracks were displaced based on the wind farm extension resulting in higher traffic density leading to an increase in the number of vessel encounters logged by the modelling. | No other Interested Parties have responded to this ExQ | No further Applicant comment |

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| | | | The change in domain encounters brought about displacing vessel traffic can be seen in NRA Table 12 and NRA Figure 55 on Pg 81 of the NRA report.<br>B. Ship grounding/ (c) ship stranding<br>Ship grounding is when a vessel makes contact with the seabed. The definition of stranding is not widely standardised, though frequently relates to a grounding in which a vessel is not able to re-float within a tidal cycle. Both grounding and standing are treated as vessel groundings in the risk assessment – with a "Most Likely" outcome relating to grounding with minor consequence and "Worst Credible" related to a serious grounding such as a stranding.<br>There were a number of hazards identified for grounding covering the whole study area. Water depths in close proximity to the windfarm are not limiting of themselves, as vessels transiting into the Port of London have to transit the Princess Channel or Fisherman Gat, both of which have shallower charted depths at 8.0m and 8.4m respectively than the waters around the wind farm. Groundings hazards were therefore not identified as needing further investigation through quantitative modelling (which was the case with collisions).<br>C. Ship/WTG contact<br>There were a number of hazards associated with vessels making contact with WTG which are considered within the risk assessment. Further numerical analysis was undertaken against the routes passing the windfarm – see | | |

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| | | | NRA Section 7.4 – Modelling of Impact of Contact (Allision). This geometric modelling was undertaken based on the displaced vessel tracks used in the collision risk modelling and as such utilised data originating in Dec 2016 – which equates to a winter period where worst case MetOcean considerations would be expected. | | |
| 1.12.7. | The Applicant | Additive effects of Wind Farm Service Vessels on collision risk: Please clarify the statement in the NRA that the collision risk within 5nm is increased by 54% to one every 4 years plus "a further 9% with the addition (of) WFSVs…";<br>• does that translate by addition into an increase of risk of 54%+9% = 63%?<br><br>[APP-089] NRA para 7.3.2 | NRA Section 7.3.2 describes the results of the collision modelling undertaken prior to the reduction of the RLB at the western extent. The modelling results showed an increase in the number of encounters between vessels from 246 (Baseline) to 379 (Scenario 3 – with revised RLB), a 54% increase.<br><br>The Wind Farm Service Vessel modelling, Scenario S1b from Table 12 of the NRA on page 81, was undertaken with the original Red Line Boundary and showed 440 encounters, of which 37 involved wind farm service craft operating between Ramsgate and the Thames Estuary wind farms (9.2% of the total).<br><br>This modelling includes windfarm service vessels transiting to London Array, Kentish Flats and the existing Thanet Offshore Wind Farms. The modelling made an overly conservative estimate that the number of all WFSV encounters would double (not just those related to Thanet Offshore Windfarm). As this Scenario includes a doubling of all WFSV which was subsequently identified as highly unlikely, and was undertaken against the original Red Line boundary, the results of have limited utility.<br><br>As the two scenarios identified in the ExA question have different RLB and the assessment of WFSV is overly conservative, | PLA and ESL's response:<br><br>ESL has concerns over the methodology of assessing collision risk. Although WFSVs appear to be a 'high risk' user of the area, it is unclear from the ES and the NRA how many WFSVs will be in place during construction.<br>It is also unclear if the ship domain/collision risk study in the NRA fully accounts for MetOcean conditions, mechanical failure, vessel type and activity (i.e. fishing). These are all recommended factors to take into account in MGN 543 (Annex 3).<br>The risk collision assessment only accounts for traffic that carries AIS, and this analysis is based on one month's AIS Data (December 2016), a typically quiet month for vessel activity. It would be helpful to understand if the 9% increase accounts for all windfarm vessels (which ESL believes to be 4 in total) or whether 9% represents 2 WFSVs. | In additional to the Applicants response the ExA question, the Applicant notes that the modelling uses the baseline numbers of WFSV transits present in the underlying data for the baseline collision risk modelling. As noted in the Applicants response to the ExA question, the modelling presented in the NRA doubled all WFSV (including those servicing other wind farms).<br><br>It should be noted that the baseline data used for the collision risk modelling was for a month of data and included within that month would be 2 full tidal cycles, the effects of MetOcean conditions present at the time of the baseline data vessel types, activity and any mechanical failures that may have occurred in that period and any other issues that arose in the dataset. |

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| | | | it is not correct to translate that the total increase in risk would be 54% + 9% = 63%. | | |
| 1.12.8. | The Applicant | Effects of reduced margin for error in pilotage operations<br>In regard to pilotage operations the NRA concludes that "reduced margin for error would increase the risk of an incident."<br>Would the applicant please explain:<br>a) how has this increased risk of an incident (due to reduced margin for error) been addressed in the risk assessment?<br>b) what change of frequency of occurrence of the relevant hazards has been applied as a consequence of this reduced margin for error?<br><br>[APP-089] NRA p129 para 12 | The Applicant has addressed the margin for error in pilotage operations within the Hazard Logs.<br>A. The Applicant has re-presented the hazard log in Annex Q to show hazard return periods for the Baseline, Inherent and Residual risk profiles. This shows that hazard likelihood scores have been increased for hazards associated with pilotage to account for the reduced "margin for error". An example of this is the likelihood scores given to Operational Phase Haz ID #17 – "Contact – Large Commercial Vessel in contact with WTG that had return periods of:<br>• Baseline Hazard Likelihood<br>o "Most Likely Occurrence" - 1 in 63 years<br>o "Worst Credible Occurrence" - 1 in 6,310 years<br>• b. Inherent Hazard Likelihood<br>o "Most Likely Occurrence" - 1 in 25 years<br>o "Worst Credible Occurrence" - 1 in 2,510 years<br>These show significant changes to hazard likelihoods.<br><br>B. The hazard risk scores for likelihood have also been increased to account for the increase likelihood of collision – this is demonstrated in Annex Q. An example of this is the likelihood scores given to Operational Phase Haz ID #7 – "Collision – Large Commercial Vessel in collision with (ICW) a Large Commercial Vessel" that had return | Not Applicable | Not Applicable |

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| | | | periods of:<br><br>• Baseline Hazard Likelihood<br>o "Most Likely Occurrence" - 1 in 25 years<br>o "Worst Credible Occurrence" - 1 in 2,510 years<br>• Inherent Hazard Likelihood<br>o "Most Likely Occurrence" - 1 in 16 years<br>o "Worst Credible Occurrence" - 1 in 1,000 years<br>These show significant changes to hazard likelihoods.<br>The ExA should review the hazard scoring example presented as a Supplementary Note in answer to question No 1.12.28 (Annex P) with the re-presented hazard log table presented at Annex Q | | |
| 1.12.9. | The Applicant | Tolerability of Societal Concerns:<br>In the light of concerns about risks to safe navigation inshore of the proposed Thanet Extension raised at ISH2, please review the Navigation Risk Assessment (NRA) in respect to the MCA/DECC 2013 Methodology on Tolerability of Societal Concerns which recommends "…as a minimum, an overall assessment of societal risk…" as: "An aggregate of all entries in the risk register"; including for "Major risks such as collision, contact, grounding and stranding"; and please state a reasoned assessment of tolerability of societal concerns in regard to the aggregate of hazards of navigation in the following sea areas between the safety zone outside the proposed Red Line Boundary of the Thanet Extension and:<br>a) NE Spit Bank and the transit between Elbow cardinal mark and E Margate channel mark to the west and north-west of the site; | The "Tolerability of Societal Concerns" section of the MCA/DECC 2013 Guidance (section 6.2) advises that an assessment should consider societal risk through two mechanisms:<br><br>1. An aggregate of all entries in the risk register; and for<br>2. Major risks such as collision, contact, grounding and stranding<br><br>Section 6.2 does not however give any specific methodology for considering aggregate risk, but References Annex C4 that explains how Tolerability of Risk can be assessed. This splits Tolerability into two Questions which are focused on aggregating risk and assessing Tolerability. The questions are:<br><br>1. Is the risk below any acceptable limit?<br>2. Has the risk been reduced to as low as reasonably practicable (ALARP)? | No other IPs have provided comment | No further Applicant response |

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| | | b) the transit between Elbow cardinal mark and NE Goodwin cardinal mark to the south-west and south of the site;<br>c) South Falls bank to the east and south-east of the site;<br>d) The transits between Falls Head cardinal mark and Thanet N cardinal mark and NE Spit cardinal mark;<br><br>the boundaries described above define sea-room with unobstructed water depth no less than 10 metres below Ordnance Datum.<br><br>Ref.: MCA/DECC 2013 Methodology p.25 6.2 Tolerability of Societal Concerns. | **Response to Guidance Question 1:** Is the risk below any acceptable limit?<br><br>There is no guidance on absolute Tolerability limits provided by the MCA, or even the specific risk assessment criteria that need to be utilised (e.g. likelihood, consequence and risk classifications, risk matrix set up, consequence categories to be assessed, or use of the "most likely" / "worst credible" concept, etc.).<br><br>The (MCA/DECC 2013) guidance does give some indication of absolute tolerability and specifies *as a very broad indication*" the Health and Safety Executive individual risk of death of 1 in 100,000 per annum – which should "*represent the dividing line between what could be just tolerable for any substantial category of workers for any large part of working life and what is unacceptable for any but fairly exceptional groups*" (Annex C4). The NRA sought to address this question through Section 8.6.3 as a means of considering overall levels of risk.<br><br>The Applicant considers the approach in Section 8.6.3 to be consistent with the objectives of the guidance; and the NRA also accords with the underlying approach of ensuring that all relevant hazards are identified and presented in entries that allow for an overall assessment of risk, as the guidance envisages.<br><br>Note that the analysis conducted in NRA section 8.6.3 includes all hazard types within the risk assessment for both the construction/decommissioning and operational phases of the windfarm including the aggregate assessment of Tolerability by vessel type for:<br><br>• Large Construction Vessels<br>• Small Construction Vessels | | |

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| | | | • Large Commercial Vessels<br>• Small Commercial Vessels<br>• Fishing Vessels<br>• Recreational Vessels<br><br>The aggregate fatality rates for each vessel type were based on the summing up the hazards fatality rates for each the following hazards:<br><br>• Collision<br>• Contact<br>• Grounding<br>• Obstruction<br>• Swamping / Capsize<br><br>The analysis contained within 8.6.3 therefore produces an aggregate fatality rate for each vessel type, showing all vessel types have aggregate fatality rates in line with Tolerability levels given by guidance.<br><br>It is important to note that this assessment of overall risk is made up of a group of hazards, in the NRA case hazards grouped by vessel type; and not individual hazards or sub-areas of the study area, which would have proportionally lower fatality rates. As NRA Section 8.6.3 shows that no individual vessel type has values exceed the fatality thresholds (especially large and small commercial vessel traffic), then conducting the same analysis on the locations identified in the ExA question would only show lower fatality rates from those already shown to fall below the threshold of tolerability.<br><br>**Response to Guidance Question 2:** Has the risk been reduced to as low as reasonably practicable (ALARP)?<br><br>The guidance here also focuses on Health and Safety Executive principles, namely that of reducing hazards to As Low as Reasonably Practicable.<br><br>The ALARP principle forms the basis for | | |

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| | | | tolerability within the presented hazard logs, where every individual hazard is categorised in the risk criteria banding (see Annex B – Pg 7). A table of hazards, developed from the Risk Hazards Logs, which shows where risk controls have been applied is presented as Annex Q to this response.<br><br>These tables for the Construction/Decommissioning Phase and the Operational Phases hazard logs show that all navigation hazards have risk controls associated with them in either the "inherent" assessment of risk for embedded controls, or the "residual" assessment of risk for the additional risk controls. These risk controls are assessed against the ALARP principle. The Applicant considers that when section 6.2 and Annex C.4 of the guidance are read together, Tolerability of Societal Concerns are therefore inherently embedded within the risk assessment, Section 7 the Impact of the Thanet Extension, the analysis conducted in NRA Section 8.6.3 and the hazard logs themselves.<br><br>***Answer to ExA sub-questions a) through to d):***<br><br>As regards the areas identified in the question, it is important to note that the individual hazards for the construction/decommissioning phase and Operational phase of the wind farm (total 38 and 29 respectively), cover the whole study area (RLB + 5nm buffer – as agreed with the Maritime and Coastguard Agency).<br><br>If the hazards were broken down hazards into sub-study areas, they would have lower individual risk scores (relative to the overall hazard risk scores) as likelihood of incident occurrence is directly related to the exposure of the hazard and the sub- | | |

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| | | | area would have a lower vessel exposure – i.e. there would be less vessel transit time exposure in a smaller sub-set of the study area. Section 7 of the NRA – Impact of the Thanet Extension does however detail specific impacts of the development related to different aspects of the study area. | | |
| 1.12.10. | Maritime and Coastguard Agency and Marine Management Organisation | Acceptability of pollution, loss of vessel, operational downtime: Please advise what considerations in regard to acceptability of risk should be taken into account when the assessed risk has major or catastrophic consequences that are not necessarily loss of life (including Pollution, Loss of Vessel, Major Operational Downtime); and<br>a) at what level of assessed frequency can hazards with major or catastrophic consequences be assessed to be acceptable risks?<br>b) to what extent it is reasonable for acceptability of major risks in confined sea room to be assessed by separate analysis of component hazards as opposed to assessment of combination and interactive effects? | The Applicant anticipates that further information will be placed before the examination by the Interested Parties at Deadline 1.<br><br>The Applicant will respond in accordance with the examination timetable to any comments made by the MCA and MMO, to whom this question is directed.<br><br>To assist the ExA with their questions:<br><br>A. The Applicant would note that in order to ascertain what level of frequency hazards of catastrophic consequences can be assessed to be acceptable it is necessary to review the guidance and standards of hazard definition available. The Applicant draws attention to the detailed risk matrix presented in the | MMO's response:<br><br>The MMO defers to the expert opinion of the Maritime and Coastguard in regards to the assessment of risks to safety of navigation. However, the MMO feels there is an additional point raised in the question about how the socio-economic impacts have been assessed, for example the impacts to freight/pilotage firms due to increased downtime, loss of contingency or increased vessel transit time.<br><br>As these effects are not specifically part of the assessment of navigational risk, the MMO seeks clarification from the applicant of where these effects have been fully assessed. | The Applicant notes that the MMO have deferred opinion to the MCA who have not made a submission at Deadline 1.<br><br>The Applicant nevertheless notes, with regards to the MMO comment regarding socio-economic impacts (and as per the Applicant's Deadline 1 response), that the ES concludes there are no significant effects to freight/pilotage firms, as there is no significant increase in downtime, or loss of contingency or appreciable increase in vessel transit time. |

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| | | | supplementary note at Annex P which draws on the best available risk assessment process in order to define acceptability. Where reading from the risk matrix it is possible to determine that a catastrophic consequence hazard which occurred more often that once in 100 years would be regarded as intolerable, and that the lowest risk score a catastrophic consequence hazard could achieve (at a frequency of greater than once in 1000 years) would be 5.1/10 and would be have to be assessed as ALARP to be acceptable. This is considered to represent an appropriate calibration of the assessment as regards "acceptability" of risks.<br>B. The Applicant would highlight that the assessment as presented within both the NRA and ES identifies individual or component hazards and considers the likely significance of them, either within the context of the EIA or within the NRA through the Formal Safety Assessment in line with guidance requirements (see DTI 2005 Guidance and MCA/DECC 2013 Guidance).<br>As combination and interactive effects, aggregate hazard scores are taken and assessed collectively against vessel type categories for fatality rates as document section 8.6.3 of the NRA.<br>In so far as the individual impacts, these are considered in the analysis contained within Chapters 5, 6 and 7 of the NRA, and include analysis of vessel tracks, gate analysis and incident analysis, where individual features of navigation within the | MCA's response:<br>MCA are still in the process of obtaining all information on this question and will submit this to the Examining Authority as soon as possible. | Responses to MMO, with reasons, provided above |

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| | | | study area are shown. Individual impacts were also assessed in more detail through supplementary studies, where stakeholder concern was raised and include the Pilotage Study, the Pilotage Bridge Simulations and the collision risk modelling.<br><br>The assessment is structured in such a way as to ensure that effects on a given receptor are assessed 'in the round' and there is, therefore, confidence that the potential effects on that receptor are presented transparently and appropriately. An example of this is the consideration of potential impacts on pilotage as presented in paragraph 10.11.20 *et seq* of the ES Chapter (PINS Ref APP-051/ Application ref 6.2.10) which considers the potential impacts on pilotage operations in the round rather than potential effects from an increase in collision risk, increase in contact (allision) risk etc.<br><br>Furthermore, in adherence with PINS Advice Note 9 the Applicant can confirm that consideration of interactive effects is an inherent part of the NRA, and indeed the wider ES that has considered, for example, the risk of multiple inter-project effects combining to result in an effect that is greater than its constituent or component parts. | | |

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| 1.12.11. | The Applicant, Port of London Authority, Estuary Services Ltd, London Pilots, London Gateway Port Ltd, Port of Tilbury London Ltd, Trinity House and the Maritime and Coastguard Agency | Recommendation not to take forward additional risk control<br>Please comment on the concluding recommendation in the Navigation Risk Assessment (NRA) not to take forward additional risk control measures that had been considered in the NRA as further mitigation?<br>[APP-089] NRA 8.5.3 Table 22 items 1, 2, 3 and 4 and Conclusions | The Applicant wishes to draw the attention of the ExA to the NRA conclusions which identified additional risk controls that were not recommended, as hazard risk scores fell into the ALARP or Low Risk categories.<br><br>It is important to note that these risk controls were identified for the operational phase of the wind farm only, with the highest risk scoring hazards all scored at the lower end of the ALARP category, from 4.00-5.05/10, (the ALARP category ranges from 4.00 – 6.99). All these hazards had Embedded and/or Additional Risk controls in place that ensured navigation risk could be termed ALARP without the need for further controls.<br><br>Details on the reasons possible additional risk control were not recommended are given in full in NRA Table 22, however in summary they are:<br><br>• **#1 Construction and Post-Construction Monitoring** - This risk control improves monitoring of the risks but would not necessarily prevent an incident. Real time monitoring is already recommended in other adopted risk controls;<br>• **#2 Relocation of Pilot Boarding Station** - The alteration of pilotage arrangements would incur additional costs, both in terms of pilot hours, and wear and tear on the pilot vessels. Furthermore, it may result in changes to the operation of Ramsgate with only one pilot boat given the increased distance travelled and number of trips. A two-vessel pilot system may therefore be required which would be comparatively costly. Dependent on the revised location there could also be impacts to availability of the relocated pilot station during bad weather conditions, where alternative stations are less sheltered. As the | PLA and ESL's response:<br><br>NRA 8.5.3 Table 22<br>**Item 1 (Construction and Post-Construction Monitoring)**<br>It is not clear where real time monitoring has been adopted across other risk controls. Some form of continuous monitoring could possibly highlight any potential issues as the project continues. It may assist in identifying further navigational/safety issues – particularly if there is engagement with affected stakeholders such as the MCA, ports, pilotage service and local fishermen – so that these could be mitigated.<br>**Item 2 (Relocation of Pilot Boarding Station)**<br>The PLA and ESL agree that the alteration of pilotage<br>arrangements would incur additional costs and that it may not be feasible to continue the operation with one boat if the pilot station was relocated. It would result in a substantial rise in costs to the whole of the pilotage operation both in money and time. It also has to be considered that the displacement would not necessarily offer any increase in trade for ESL.<br>However, we do not agree that the reduction of red line boundary that has been proposed provides sufficient mitigation to continue pilotage operations at their current location. As described above, the pilotage simulation study was very limited and does not reflect the true increase in risk.<br>The proposed extension on the shore side of the windfarm would result in the likely removal of the NE Spit diamond and relocation of all boarding and landing operations to the Tongue, which would also have to be relocated further to the north east. | Item 1: The Applicant confirms that Embedded Risk Control # 7 provides for a continuous watch during construction of the TEOWF.<br><br>It is noted that some of the TEOWF site lies within the PLA VTS area, particularly the NE Spit area and as such could be monitored by the PLS VTS centre.<br><br>Item 2: The Applicant acknowledges that the PLA agrees the disproportionate cost in relocating the pilot stations, in terms of additional travel time.<br><br>However the Applicant wishes to identify that with the increased demand for shipping identified by IP's, that ESL will need an additional pilot cutter to meet demand.<br><br>Item 3: It is noted by the Applicant that implementing more structured approaches to the management of pilot boarding may introduce more rigidity into the system.<br><br>Item 4: The Applicant included this requirement in the risk control measure as it was identified during the Pilotage bridge simulation by PLA pilots and ESL personnel, who at the wash up of the simulations noted it was the first time they worked together in a simulation environment, and improvements to process were apparent.<br><br>The Applicant notes that whilst considered potentially disproportionate in principle these measures could offer mitigation points for further discussion with stakeholders. |

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| | | | pilotage simulation study concluded that the NE Spit pilot boarding area remained feasible, with the original Red Line Boundary, and with a reduction to the Red Line Boundary in place, it was not considered that the benefit to further reduction in risk outweighed the impacts described above as the assessed risk was already at ALARP.<br>• **#3 Increased Co-Ordination and Situational Awareness of Movements and Pilotage at NE Spit** - The impact associated with increased co-ordination, through for example an increased area of responsibility for an existing stakeholder such as PLA is considered to be disproportionate when considered against the magnitude of the predicted impact. This is particularly pertinent when consideration is given to the pilotage simulation study, which was undertaken in collaboration with current pilots and clearly demonstrated that pilotage was still feasible under a range of representative wind speeds. It is important to further note that the simulation was undertaken employing the former RLB as presented in the PEIR for formal Section 42 consultation. The subsequent revision of the RLB in the western corner demonstrably reduced any loss of searoom and would therefore increase the ability of pilots to continue operations successfully.<br>• **#4 Improved Training and Integration of Pilots, ESL and PLA VTS** – As noted for the increase in co-ordination, this mitigation measure was not brought forward as an additional project risk control as it was considered to be disproportionate given the demonstrable ability of pilotage operations to continue when the simulation was undertaken | We agree that splitting the operation of ESL into a two launch service (between NE Goodwin DWD and Tongue DWD) would not be possible with the current one launch service. It would result in a substantial rise in costs to the whole of the pilotage operation both in money and time. It also has to be considered that the displacement would not necessarily offer any increase in trade for ESL. We believe the current reduction to the RLB does not mean that safe operations can continue at the inner NE Spit boarding ground, we don't believe the simulation proves that pilotage is still feasible with the extension in place.<br>**Item 3 (Increased Co-ordination and Situational Awareness of Movements and Pilotage and NE Spit)**<br>Table 22 suggested there was a need for:<br>•Early and refined planning, supported by enhanced shore support, to reduce pressurised decision making afloat; and<br>•Improved situational awareness at ESL and on board the pilot vessels through the provision of higher definition and longer range presentation of vessel traffic data.<br>Such an increase in co-ordination and situational awareness would require a substantial increase in resources. It would effectively require a dedicated Traffic Organisation Service (TOS) in order to provide the required level of service described. London VTS provides traffic information in this area and is not sufficiently manned to provide the additional services that would be required. The NE Spit diamond lies within the area currently monitored by London VTS, but is outside the PLA's port limits and therefore the PLA's powers to direct traffic are limited. The PLA disagrees that the reduction in red line boundary provides sufficient alternative mitigation.<br>The existing schedule of shipping served at | |

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| | | | utilising the former RLB prior to and the subsequent reductions of the RLB in the western corner in order to reduce the potential loss in searoom. | the NE Spit is already informed by Live AIS data, VHF contact (the range of which can vary depending on weather and quality of onboard equipment) and port communication. From ESL's perspective, it would be very difficult for a VTS service and ESL to formulate a prescriptive run plan when neither have full control of all variables that influence each run i.e. non-pilotage traffic, ship delays, weather, poor communication with the vessel which can occur due poor quality technology (VHF) or a language barrier.<br>Table 22 suggested that the needs identified (see above) could be achieved by: i) "Enhancing the role of London VTS to provide early guidance, organisation or formalising the sequencing of arrivals and departures. This could take the form of "slots" at the Pilot Station published in advance in the form of a shipping list;" This is similar to how the operation is already run. ESL communicates with the ports who inform them of a 'pilot on board' time and the ship is advised accordingly. Shipping is already organised, from the Port's perspective, well in advance through the agents. Introducing a 'slots' principle begins to create rigidity in the pilotage process and makes it increasingly difficult for the service, in particular ESL, to adapt to any form of delay or other issues.<br>ii) "Strategically co-ordinating the arrival and departure of vessels estuary wide including traffic to and from the Medway. It is suggested that as a precursor to gaining improved situational awareness estuary wide visibility of the ETA and ETD aspects of POLARIS as a planning tool would significantly aid the subsequent co-ordination of traffic;" Both ports already share their arrival and departure information, we would argue this level of coordination is already in place. | |

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| | | | | iii) "Formalising the method by which the transfer courses and vessel positioning at the pilot station is decided, communicated and executed; at present, this is achieved using a transfer course planning diamond that is refined by the Coxswain afloat and only communicated to the ship immediately prior to transfer. Early promulgation of a likely transfer course and a rendezvous position might help maximise the sea room available for transfer. Aided by weather forecasting, it ought to be possible to plan transfers up to 6 -12 hours in advance and inform the ship when they make initial VHF contact 2 hours prior to transfer. For example; for a North-East wind, an Inbound vessel could be informed to arrive 2 miles to the south east of the pilot station ready for a port ladder transfer on a course of 330. This could be published earlier in advance by email, SMS or other means to VTS, Pilots and the ship itself;"<br>This suggestion presents its own safety and practicality issues. The coxswain at sea will have the best situational awareness because he can physically see (supported by onboard radar/AIS and VHF) what needs to be factored in when considering a plan of action. A reliance on weather forecasts when making assumptions for future run plans would be very difficult, with the wind only being one factor considered when handling vessels. It is also important to consider that the coxswain who will be serving the vessel may not be part of the run organised 6 to 12 hours in advance. Such a high level of engagement and instruction between ESL/Ports and the vessel being served will, again, create rigidity in the service and make it more difficult for the coxswain to react to a situation.<br>iv) "ESL could consider re-instating the role of "Station | |

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| | | | | Officer" (a role removed in circa 2010) to provide a centralised and senior point of contact for planning and a real-time co-ordination of traffic and transfers outlined above":<br>The station officer role has never been used to give specific transfer arrangements (which isn't possible 6 to12 hours in advance as suggested); this has always been the responsibility of the coxswain in-situ.<br>Item 4 (Improved Training and Integration of Pilots, ESL and PLA VTS)<br>The communication and understanding between ESL and the ports is already well established. Coxswains are well-trained, highly experienced and practised at operating in an already risky environment; further training will not mitigate the fact that they would be operating in a more congested area and therefore be facing greater risk. | |
| | | | | PoTLL/ London Gateway's response:<br>POTLL and LGPL consider that the concluding recommendation in the NRA not to take forward additional risk control measures that had been considered in the NRA as further mitigation is additional evidence of the inadequacy of the NRA. This is a matter which POTLL and LGPL wish to discuss in more detail with the Applicant given that neither port was consulted on the NRA before the application for development consent was submitted. | The Applicant disagrees that the recommendations suggest any inadequacy in the NRA. These additional risk controls were not adopted as stated in the NRA (Section 8.5.3) because they would be 'disproportionate in terms of cost or operational impact or not be necessary to reduce the risks to ALARP.' Specific evidential feedback on the NRA, in particular suggestions for further potential mitigation, would be welcomed by the Applicant. |

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| | | | | Trinity House's response:<br><br>TH had commented at an early stage we did not agree on the overreliance of third parties with respect to Table 22 Item 3 unless this could be enforced and secured. The applicant informed us at later meetings this was being removed. | The Applicant notes this response and that this risk control is not proposed for reasons stated in the NRA (Section 8.5.3). |
| | | | | MCA's response:<br><br>Several of the original risk control measures identified at the PEIR stage were removed because MCA and others were concerned that there were significant implications for third parties, and/or significant cost implications. | The Applicant notes this response and also notes that these additional risk controls were also not adopted as stated in the NRA (Section 8.5.3) because they would be 'disproportionate in terms of cost or operational impact or not be necessary to reduce the risks to ALARP.' |
| 1.12.12. | The Applicant | Adequacy of consultation about the NRA: In the light of concerns raised at ISH2about the adequacy of consultation on the preparation and drafting of the Navigation Risk Assessment (NRA), please provide a document equivalent to a consultation report in matrix form, clarifying who was consulted on method and draft content respectively and reporting on the regard had to consultation responses received. | A consultation matrix table is provided in Annex I. Minutes of meetings with MCA, THLS, PLA and ESL are provided within Annex J (that are not included within the NRA Report) are also provided together with the Pilot Transfer Bridge Simulation Inception Report at Annex K which was issued prior to the Pilot Transfer Bridge Simulation in order to capture the agreed assumptions to be applied to the simulation exercise.<br><br>Stakeholders were identified at an early stage of the project and consultation undertaken with a wide range of parties as presented in Table 8 of the Navigation Risk Assessment Application Ref 6.4.10.1 (pp. 34-40). Statutory stakeholders were consulted throughout the assessment, as that Table (and Section 9.14 of the Consultation Report (Application Ref 5.1) explains.<br><br>Specifically, it is noted that • MCA, PLA, and ESL were consulted with before and during | PLA and ESL's response:<br><br>The first meeting where a number of serious concerns were raised regarding the proposal was in January 2016, and the need to engage with the PLA, ESL, and other stakeholders was raised at that time. Meetings have taken place since that date. It is not clear what mitigation has been proposed by the Applicant to reflect the PLA and ESL's comments, save that the application for the TEOWF is slightly more limited at its western-most extent that was originally proposed. However, that does not address the PLA's or ESL's concerns regarding the inner route and the impacts of the TEOWF on the pilot boarding stations.<br>ESL's concerns with regards to participating in the Bridge Simulation Study, (see Q1.12.3) were raised with Marico Marine on the 14 August 2017 and have not been addressed.<br>The PLA and ESL were advised of the existence of a NRA at a meeting with | The Applicant acknowledges and appreciates the early engagement of PLA and ESL from the early stages and the extensive consultation and participative engagement that has been undertaken through the NRA and the supportive studies – particularly in relation to Pilotage. The Applicant notes with regards to the meeting held on 14-Aug-2017 that this followed a meeting held with the PLA Harbour Master (Lower) and ESL in which Simulation was collaboratively proposed. Following this meeting the PLA facilitated a second meeting, also attended by ESL, on 14-Aug-17 in which the simulator was toured (by PLA and some of the participating Pilots together with ESL coxswains) and discussed in detail – working through the simulator parameters and discussion of the meeting. The Applicant subsequently prepared an Inception Report (shared to all parties for comment) and a setup day in which the simulator parameters were further developed. Minutes of the above meetings |

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| | | | the preparation of the NRA (and bridge simulation) and consultation included discussion of early findings. | Vattenfall on 31 August 2018. Neither party was advised of the NRA ahead of this meeting, and neither was engaged in its drafting or was invited to comment on a draft ahead of formal submission. | are provided at Appendix 25 Annex J for Deadline 1). It is the Applicant's view that the simulations were collaboratively prepared for in an open and participative manner and that multiple deliverables and meetings were provided to raise and address concerns. It is therefore surprising that PLA and ESL are raising concern at this stage having not done so beforehand.<br><br>All parties were aware that an NRA was being prepared and participated in consultation and supporting studies, as explained above (including receiving draft reports for the pilotage study, pilot simulation inception report and the simulation report). The PLA and ESL had more than adequate opportunity to raise concerns with the methodology being adopted as the NRA was in preparation. Both parties were consulted at Section 42 which included, as part of the Preliminary Environmental Information Report, a Shipping and Navigation chapter which sets out that an NRA was to be produced. Furthermore the PLA were provided with the full suite of Application documents including the NRA by the Applicant shortly after the submission in June 2018. |
| 1.12.13. | The Applicant | Consultation with RYA<br>In APP-089 NRA 1.3 RYA (Royal Yachting Association) is specifically listed as a key stakeholder in MGN 543 guidance. Would the applicant please guide the ExA to where the RYA is referenced as a consultee in the [APP-028, 029, 030] list of non-statutory consultees and please provide a link to or copy of the most recent consultation communication with RYA. | As requested by the ExA at the Preliminary Meeting, the Applicant has contacted the RYA again, for comment on a draft SoCG. To date, no response has been received. | Not Applicable | Not Applicable |
| 1.12.14. | The Applicant | Clarification of impact of the development:<br>Can the applicant please clarify the meaning of [APP-089] NRA p130 para. 19 "… whilst the footprints [sic] of the | As noted by the ExA, the NRA states as follows at p. 130 para. 19: "*The cumulative and in-combination impacts were reviewed, and whilst the footprints of the* | No other Interested Party responses were received | The Applicant therefore has nothing further to note. |

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| | | developments [sic] would not cause an adverse impact, the extension would impact the routeing and navigational safety of operational vessels." | *developments would not cause an adverse impact, the extension would impact the routeing and navigational safety of supporting vessels*".<br><br>The NRA has assessed the impact of the Thanet Extension on vessel routeing and navigational safety. In addition to this impact it is recognised that multiple developments such as OWFs can have cumulative and in combination effects on vessel traffic if they are located close together, whereby the impact of several developments is greater than the impact of any one development in isolation. These impacts can be direct, whereby the footprints of multiple developments creates constraints or requires significant and multiple deviations of course for third-party vessels to avoid them; or indirect, whereby one development might impact upon the operations at another.<br><br>The assessment identified and reviewed the other developments in the Thames Estuary within Section 7.10 of the Navigation Risk Assessment Application Ref 6.4.10.1 and a tiered breakdown is provided within Section 10.13 and Table 10.9 of Volume 2, Chapter 10 (Application Ref 6.2.10) of the Environmental Statement) which concluded that there was significant distance between each development. Therefore, there would be no direct impact on navigation as a result of the cumulative and in-combination effects including those other developments.<br><br>However, as Ramsgate is the O&M base for London Array, Kentish Flats and Thanet, the Extension may have a degree of indirect impact on the routeing and navigation safety of O&M support vessels to London Array and Kentish Flats. These impacts were assessed and summarised within Sections 10.13.13 through 10.13.18 of Volume 2, | | |

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| | | | Chapter 10 (Application Ref 6.2.10) of the Environmental Statement. It is noted any impacts would be greatest during construction/decommissioning phases (due to increased numbers of movements) and occur along their route to the wind farm and within Ramsgate Harbour. Management and cooperation between operators and developers will be necessary to reduce potential conflicts (as is proposed within the embedded risk controls of Table 20 of the NRA [ID 1 – promulgation of information] and ID 2 [planning and co-ordination between developer and operators] and Table 21 [ID 5 – Communication between project, sub-contractors and fishermen/leisure groups]. It was concluded that these impacts should not be regarded as significant. | | |
| 1.12.15. | The Applicant | Effect of control on traffic flow around the site:<br>The NRA para 7.3.2 states that the extension of the wind farm with revised RLB would increase the collision risk within 5nm by 54%.<br>Would the applicant confirm if it is correct to understand that introducing control on traffic flow around the site would reduce the risk by 23%?<br>a) Does this mean a reduction in the 54% increased collision risk by subtracting 23% resulting in a residual increased collision risk of 31% (instead of an increase of 54%), or does it mean the product of (54% times (1.00 minus 0.23))?<br>b) What would be the form of such a control on traffic flow?<br><br>[APP-089] NRA para 7.3.2 | NRA Section 7.3.2 Pg 80 describes the results of the collision risk modelling undertaken prior to the reduction of the RLB at the western extent. The modelling results showed an increase of the number of encounters between vessels from 246 (Baseline) to 379 (Scenario 3 – with Revised RLB), a 54% increase. It is important to note that whilst the term collision risk is used in line with common practice, the analysis is in reality based on 'encounters', i.e. the potential for a collision to occur, considered by reference to "domain" areas drawn on a precautionary basis at a distance around the vessels in the model. This does not account, however, for human intervention (i.e. it does not account for the very great probability that a vessel master would seek to avoid the collision). To aid in the contextualisation of this within the narrative the term "encounter" is used throughout.<br>In answer to the ExA questions:<br>A. The Applicant can confirm that | No further comment was provided by IPs | No further responses from the Applicant is therefore required. |

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| | | | Scenario 2 of the modelling investigated the use of the Tongue Pilot station for vessels against the PEIR (pre-application) RLB presented within the PIER for formal consultation. Scenario 2 considered all vessel traffic using the NE Spit pilot station, that were not passing inshore of the wind farm (i.e. vessels dipping down to NE Spit from routes 1,3 & 6 - see NRA Figure 46).<br>The collision modelling for Scenario 2 showed an increase from 246 (Baseline – no extension) to 310 (Scenario 2 – with extension in place, with original RLB and relocation of NE pilot boarding station). The 23% reduction relates to the reduction between Scenarios 2 (with PIER RLB) and Scenario 1 (which assessed encounters with the PEIR RLB but without increased use of alternative pilotage stations). The encounters associated with Scenario 1 and 2 are 403 and 310 respectively, which gives an overall reduction of 23% in encounters. This reduction is considered as a proxy for the effectiveness of relocating the NE Spit pilot boarding area to the Tongue.<br>B. The Applicant can confirm that under this scenario the form a traffic control would take is to relocate the pilot boarding station, which would have the result of directing vessels and pilots to the existing Tongue Pilot boarding station (that was put in place following the construction of the Thanet Offshore Wind Farm) which as it stops the "dipping" of traffic into the NE Spit pilot boarding area, reduces the likelihood of vessel encounters. Further details | | |

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| | | | on the relocation of the pilot boarding station are given in NRA Table 22 "Possible Additional Risk controls which have not be adopted" # 2 – Relocation of Pilot Boarding Station which is stated as follows:<br>*Relocation of Pilot Boarding Station - Through this assessment it was identified that the sea room surrounding the NE Spit Pilot boarding station would be reduced. Bridge simulation trials conducted with PLA Pilots, and ESL coxswains in the PLA simulator, identified that it was remained feasible to conduct pilot transfers in this area, albeit with reduced margin for error, therefore with some increase in risk. Consideration was however given to relocating the NE Spit pilot boarding station with pilot boarding split between NE Goodwin, to the south of wind farm extension for vessel utilising the inshore route, and the Tongue, for vessels transiting past the north of the proposed extension. Vessels passing inshore of the wind farm would have the added benefit of taking a pilot at NE Goodwin prior to transiting past the wind farm, enhancing navigation safety. Vessels passing north of the extension could utilise the greater space available around Tongue which would reduce collision risk at NE Spit by removing the practice of vessels dipping down to NE Spit to collect a pilot.*<br>For the reasons identified previously in response to ExQ 1.12.11 this measure was not brought forward as it was not considered to bring with it a proportionate benefit when considered in the context of the pilotage simulation conclusions which were that pilotage operations were completed successfully under a range of representative wind conditions and remained feasible at NE Spit pilot boarding area. | | |

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| 1.12.16. | Maritime and Coastguard Agency, Trinity House. | Effects of increased density of traffic inshore at high water:<br>Please comment on the assessment in NRA p70 that the effect of increased density of vessel traffic inshore as a displacement effect of the Thanet Extension would not be significant to the risk to navigational safety and identify whether this conclusion is conditional on state of tide and size of vessels only.<br><br>Ref [APP-089] NRA p 70 | The Applicant notes that this question is directed at other parties and anticipates that further information will be placed before the examination at Deadline 1, to which the Applicant will respond in accordance with the examination timetable. | Trinity House's response:<br>It is our view that the state of tide is an important factor affecting the compression of traffic in the area. Larger vessels will be restricted by the state of the tide and the assumption that smaller vessels will be further from this area at high tide is a significant factor. Smaller vessels may be able to use increased sea room at differing heights of tide depending on their drafts, local knowledge and the experience of the crew. | The Applicant notes that tidal distribution and relationship of transits to tidal times has been considered within the NRA (Reference Section 7.1.3) and furthermore notes that the limiting depth constraints of the NE Spit area are equivalent to those of Princes Channel and Fishermans Gat (Ref: Appendix 25, Annex M Para 9). The Applicant agrees that comparable vessels of lesser draught have more sea room available to them than vessels of greater draught. A sea rooms plot has been developed by the Applicant to assist ExA understanding of available searoom for vessels of varying draught based on the bathymetric depth contours. |
| | | | | MCA's response:<br>Tide is an important factor in this area. As stated in 1.12.1, large vessels will likely be tidally constrained at specific times, and at those locations at that specific time is when the risk increases. Smaller vessels may or may not use the available sea room at high ride depending on a variety of factors; size of vessel, conditions, and experience etc. | The Applicant notes that tidal distribution and relationship of transits to tidal times has been considered within the NRA (Reference Section 7.1.3) and furthermore notes that the limiting depth constraints of the NE Spit area are equivalent to those of Princes Channel and Fishermans Gat (Ref: Appendix 25, Annex M Para 9) |
| 1.12.17. | The Applicant | Effects of displacement of traffic on risk in other locations:<br>Please confirm how the NRA has accounted for the effects of displacement of traffic as an effect of the Thanet Extension increasing risk to navigation in other locations?<br><br>[APP-089] NRA para108."cumulative impact of these developments will result in….rerouted into other lanes, increasing the risk elsewhere." | Section 7.10.2 of the Navigation Risk Assessment Application Ref 6.4.10.1 outlines potential cumulative impacts on vessel routing with regards to existing multiple infrastructure developments (including wind farms) in the wider area.<br><br>Paragraph 108 as referred to in the ExA needs to be read in the wider context of the NRA, including the remainder of paragraph 108 itself which states that "for large commercial shipping, the combination of multiple other projects, given their relative distance to Thanet, is not considered to result in any material alteration of activities".<br><br>Impacts on routing and re-routing traffic are also addressed within Section 7.1.2 of the | No response was provided by IPs | Not further response is therefore required from the Applicant. |

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| | | | Navigation Risk Assessment Application Ref 6.4.10.1 and quantified within Figure 46 and Table 10. Understanding of the baseline existing routing has existing cumulative developments embedded within the data. Analysis of routing and displacement of traffic has been assessed pre and post extension to reflect the change in sea room and delta in route distances. These results show that:<br>• All Baseline existing traffic routes remain viable – specifically, due to sufficient sea room being maintained, there is no requirement for vessels to be displaced or re-route into other locations or seek alternatives to any of the existing traffic routes. It is noted that route 4 – (the inshore route) is also maintained.<br>• All Baseline existing traffic routes which experience increase in route distances incur a minimal increase in route distance that is not considered material.<br>In summary - because the routing analysis demonstrates traffic in existing baseline routes is not displaced into alternative routes there is not considered to be a change in risk attributable to re-routing. The change in risk due to alterations in sea room is assessed separately through traffic simulation and domain analysis as reported within Section 7.3 of the Navigation Risk Assessment Application Ref 6.4.10.1. | | |
| 1.12.18. | The Applicant | Meaning of risk controls and mitigation: Can the applicant please confirm if it is correct to understand that: "risk controls" referred to in the hazard logs in [APP-129] Navigation Risk Assessment (NRA) mean the same as "mitigation" referred to elsewhere in the ES. | The Applicant confirms that risk controls and mitigation can in general be considered the same. The former term is more commonly used in NRAs whilst the latter aligns more closely with the terminology used in EIA and the wider ES in this case. | No further responses received from other Interested Parties | No further response to be made by the Applicant |
| 1.12.19. | The Applicant | Meaning of Acceptability and Tolerability: Can the applicant please confirm if it is correct to understand that "Acceptability of Risk" referred to [APP-089] NRA 8.6.3 | The Applicant confirms this understanding is correct. | No further responses received from other Interested Parties | No further response to be made by the Applicant |

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| | | means the same as Tolerability of Risk as used in [APP-129] NTS para 170 and as used in [APP- 051] Shipping and Navigation and elsewhere in the NRA? | | | |
| 1.12.20. | The Applicant | Principle of ALARP related to acceptability of risk:<br>Would the applicant please explain how the principle of ALARP (As Low As (is) Reasonably Practicable) applies to subjective judgment of acceptability in relation to risks with major or potentially catastrophic consequence? | The principle of ALARP is applicable regardless of whether hazards have a high consequence outcome or not. The purpose of a risk matrix is to allow risk to be calculated and benchmarked such that more frequent low consequence hazards and less frequent high consequence hazards can be assessed on the same risk scale. Therefore, the ALARP principle in itself is not only related to high consequence hazards.<br>The acceptability or tolerability of hazards is derived from the International Maritime Organisation Formal Safety Assessment process, as mandated by the Maritime and Coastguard Agency guidance (see DTI 2005 Guidance and MCA/DECC 2013 Guidance), which enables both qualitative/subjective data (e.g. local knowledge and expert judgement) and quantitative data (e.g. vessel track analysis, incident analysis, collision and contact risk modelling), to be utilised in the assessment of risk for all hazards.<br>The approach is standard within the maritime industry, both in terms of use for Offshore Renewable Energy Installations and within most major Ports and Harbours in the UK. Examples of its use are as follows:<br>• Offshore Renewable Energy Installations Navigation Risk Assessments:<br>o Kincardine Offshore Wind Farm NRA<br>o Rampion Offshore Wind Farm NRA | No further responses received from other Interested Parties | No further response to be made by the Applicant |

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| | | | ○ East Anglia 1 North and 3 Offshore Windfarm Wind Farms<br>○ Hornsea Project 1 and 2 Offshore Wind Farms<br>• Ports and Harbours Navigation Risk Assessments:<br>○ Port of London Authority<br>○ PD Teesport<br>○ Milford Haven Port Authority<br>The method allows for the identification and assessment of high consequence, low probability hazards that are common focus in the maritime industry, alongside the lower consequence, higher frequency events.<br>The ALARP determination is therefore two dimensional in this regard for Navigation Risk and ensures through the risk matrix that all combinations can be assessed and compared. It is the case that navigation hazards have historically been shown to fall into in-tolerable regions, even within the River Thames – this was the case in the Formal Safety Assessment risk assessment conducted following the collision in 1989 between the Marchioness and the Bow Bell in central London resulting in 51 fatalities.<br>The Applicant does not agree that the assessment of risk and therefore determination of ALARP is purely subjective. Indeed, the Applicant has followed a structured risk assessment processes in line with guidance and has sought wherever possible to quantify numerically those parameters that have subjectively been raised as "high risk hazards" by stakeholders. The basis for calculations of "Worst Credible" hazard outcomes is based on available data and research – see NRA section 8.3.1 and the | | |

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| | | | appended note explaining the build-up of hazard risk scores. | | |
| 1.12.21. | The Applicant | Narrow band of computed numerical values for risk:<br>The NRA explains that the risk assessment scores were combined into single numerical values using special software. Would the applicant please clarify how the computed single numerical values for risk scores typically lie within a narrow band between 2 and 5 by reference to a specific example of Annex D Hazard 12, explaining in detail as a worked example explain how a value of 5.05 for Inherent Risk (and 4.93 Residual Risk) is computed from the product of:<br>a) a "Most Likely Inherent Frequency rating" of 4.0 ("Likely") and<br>b) a "Worst Credible Consequence" of 4 ("Major")<br><br>[APP-089] NRA Annex B Methodology page B-8 and [APP-089] NRA Annex D Hazard 12 | A detailed explanation related to the build-up of Hazard 12 from Annex D of the NRA at page D-3. - "Collision – Large Commercial Vessel ICW Large Commercial" is contained within Annex P. | No further responses received from other Interested Parties | No further response to be made by the Applicant |
| 1.12.22. | Maritime and Coastguard Agency | Risk computed as addition of Frequency and Consequence ratings Would MCA please explain why the "Formal Safety Assessment" approach to risk management used for NRA does not multiply numbers for Frequency by numbers for Consequence, as is done in other risk management approaches where Risk is computed as Probability (Frequency) multiplied by Impact (Consequence).<br><br>[APP-089] Annex B Methodology page B-2 "Risk is the product of a combination of the consequence of an event and the frequency with which it might be expected to occur" | Although the Applicant notes that this ExQ is for the MCA a response is included below with a view to assisting the ExA.<br><br>The Applicant wishes to highlight for the ExA that multiplying categories of frequency and consequence together to determine a risk score (known as a multiplicative matrix) is not well suited to Navigation Risk Assessments in support of offshore wind farm developments, as:<br><br>A. The likelihood values, when probabilities or return periods are applied, typically step in an exponential manner – e.g. 1 in 1 year, 1 in 10 years, 1 in 100 years, 1 in 1,000 years etc., however a multiplicative function for risk score does not reflect this.<br><br>B. For a catastrophic consequence | MCA's response:<br><br>The Methodology we follow is based on the guidelines for the FSA used in the IMO rule making process. FSA uses the classic definition on risk as a combination of probability and consequence and has to take into consideration the human element. | The Applicant wishes to note in response the MCA that the NRA was conducted using the IMO FSA methodology (please see answer to ExA Question 1.12.25, where the stages of the FSA are mapped to NRA report sections). |

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| | | | hazard a multiplicative matrix would give risk scores from 5 (lowest likelihood score, 1 x 5 = 5) – to 25 (highest possible likelihood score, 5 x 5 = 25) score out of a maximum score of 25. This means that catastrophic hazards can be assessed as 5 / 25 and as such low risk when using multiplicative matrices, and as identified in answer to question 1.12.10 the lowest possible risk score on the matrix used in the NRA for the same hazard would be 5.1/10 and would score as ALARP (Tolerable only with controls).<br>C. Society places greater emphasis / concern on hazards with a high consequence outcome e.g. 10 fatalities from a single coach accident provokes more societal concern than 10 single fatality car accidents even when occurring over the same period and for the same exposure to risk –known as aversion. A basic multiplicative matrix is not able to differentiate this as it is symmetrical in nature between likelihood and consequence.<br>D. The more frequency and consequence categories there are in a multiplicative matrix the greater the risk score range and the wider the risk criteria banding are.<br>It is therefore considered that a basic multiplicative risk matrix does not meet the requirements of an appropriate Navigation Risk Assessment and neither are there any details in the relevant guidance documents (see DTI 2005 Guidance and MCA/DECC | | |

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| | | | 2013 Guidance) which suggest that this approach should be followed. | | |
| 1.12.23. | The Applicant | Clarification: Meaning of four indices:<br>Can the applicant please confirm if it is correct to understand that "…a single numeric value representing each of the four indices.." in [APP-089] NRA Annex B Methodology page B-8 refers to the scored columns People, Property, Environment and Stakeholders in [APP-089] NRA Hazard Logs Annexes | The Applicant would like to confirm that it is <u>not</u> correct to understand that "…a single numeric value representing each of the four indices" in [APP-089] NRA Annex B Methodology page B-8 refers to the scored columns People, Property, Environment and Stakeholders in [APP-089] NRA Hazard Logs Annexes.<br><br>The four indices identified within the Hazard Ranking section of Annex B on Pg 8 relate to the combination of 8 individual risk scores ("Most Likely" risk score for People, Property, Environment, Stakeholders and "Worst Credible" risk score for People, Property, Environment, Stakeholders) into a single numeric value, by taking the average of the following risk scores for the hazard:<br><br>• The average risk score of the four categories in the "most likely" set;<br>• The average risk score of the four categories in the "worst credible" set;<br>• The maximum risk score of the four categories in the "most likely" set; and<br>• The maximum risk score of the four categories in the "worst credible" set.<br><br>The Applicant has also provided an example hazard risk calculation drafted in response to ExA Question 1.12.21, which also covers this in the section on "Scoring of Hazard Risk".<br>Therefore, it should be noted that the indices do not therefore relate to the individual consequence categories of People, Property, Environment or Stakeholders / Business. | No further responses received from other Interested Parties | No further response to be made by the Applicant |
| 1.12.24. | The Applicant | Clarification: Meaning of Ranked Hazard List:<br>Please confirm if it is correct to understand | The "Ranked Hazard List" is a tabulated list of hazards, ranked in order of the hazard with the highest risk score. The ranked | No further responses received from other Interested Parties | No further response to be made by the Applicant |

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| | | that the evidence presented in section 8.6 of the [APP-089] NRA Annex B Methodology is the "hazard list sorted in order of the aggregate of the four indices to produce a Ranked Hazard List" referred to in page B-8 of [APP-089] NRA Annex B Methodology? | hazard lists presented in Table 23 and Table 24 of the NRA Section 8.6, Pg 125 for the Construction / Decommissioning Phase and Operational Phase are a summary of the top 10 hazards only. These Ranked Hazard Lists are ranked in order of the Inherent assessment of risk to aid the reader in understanding the 'top ten' hazards. | | |
| 1.12.25. | The Applicant | Sources of evidence used for assessing Likelihood and Consequence of incidents: Please guide the ExA to the sources of evidence used in assessing:<br>a) Likelihood of incidents occurring in different scenarios?<br>b) Potential Consequence of an incident?<br><br>[APP-089] NRA 8.6.3 Acceptability of Risk: "a significant amount of evidence has been collected, such as through simulation and collision risk modeling to support the assessments of the likelihood of an incident…". | The sources of evidence used for assessing likelihood and consequence are a combination of an understanding of the baseline receiving environment, predicted future baseline of the receiving environment, data records of incidents at local, regional and national scales, and consultation with relevant national and local stakeholders. This evidence base is then used alongside the description of the proposed project to identify the relevant potential impacts, which are again then subject to further validation through consultation, and review by an internal expert panel undertaking the NRA to define. The evidence basis for the risk scoring of hazards as set out in Chapter 2 (Project Description) through to 7 of the NRA report and comprises the following datasets and sources of evidence:<br>• **Overview of the Baseline Environment including:**<br>• Admiralty Charts<br>• Local Ports and Harbours<br>• MetOcean Conditions<br>• Existing Vessel Management<br>• Search and Rescue<br>• Other Offshore Activities<br>• **Consultation including:**<br>• Consultation Meetings<br>• Pilotage Simulation Workshop<br>• **Existing Vessel Traffic and Risk Profile including:**<br>• Data Source<br>• Overall Traffic Profile | No further responses received from other Interested Parties | No further response to be made by the Applicant |

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| | | | • Vessel Traffic by Type<br>• Commercial Shipping<br>• Passenger Vessels<br>• Fishing Vessels<br>• Recreational Vessels<br>• Service Craft<br>• Vessel Traffic By Size<br>• Commercial Vessel Anchors<br>• Fishing Gear and Recreational Anchors<br>• Gate Analysis<br>• Seasonality<br>• Historical Incidents<br>• **Future Traffic Profile including analysis on:**<br>• National Trade Statistics<br>• Local statistics<br>These datasets are then used to investigate the potential impacts associated with the project, in the case of Thanet extension these were a review of the potential:<br>• Impact on Vessel Traffic Routeing<br>• Impact of Existing Thanet Wind Farm<br>• Impact of Thanet Extension<br>• Transits of Tidally Constrained Vessels<br>• Impact on Pilotage Operations<br>• Possible Alternative Pilotage Options and Impacts<br>• Summary of Impacts on Pilotage Operations<br>• Impact on Navigation of Cable Laying<br>• Impact on Search and Rescue<br>• Impact on Visual Navigation and Collision Avoidance<br>• Hindering the View of Other Vessels Under Way<br>• Hindering the View of Any Navigational Feature or Aids to Navigation<br>• Impact on Communications, Radar and Positioning Systems<br>• Cumulative and In-Combination Impacts<br>• Cumulative Impact due to Increased Vessel Activity<br>• Cumulative Impact on Vessel Routeing | | |

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| | | | • Cumulative Impact from Cable Routes<br>The review and consideration of the above potential impacts was facilitated through further evidence, derived from:<br>• An understanding of the previous Relocation of NE Spit<br>• An understanding of the continued Operation of NE Spit<br>• Modelling of Impact on Collision Risk<br>• Modelling of Impact on Contact (Allision)<br>This evidence base identified is in line with the requirements of the International Maritime Organisation (IMO) Formal Safety Assessment (FSA) risk assessment, as presented in section 3.2 of Circular MSC-MEPC.2/Circ.12/Rev.2 (REVISED GUIDELINES FOR FORMAL SAFETY ASSESSMENT (FSA) FOR USE IN THE IMO RULE-MAKING PROCESS). This highlights, amongst other things, that:<br>"*The availability of suitable data necessary for each step of the FSA process is very important. When data are not available, expert judgment, physical models, simulations and analytical models may be used to achieve valuable results. Consideration should be given to those data which are already available at IMO (e.g. casualty and deficiency statistics*)"<br>In addition:<br>"*Analytical modelling has to be used to evaluate rare events where there is inadequate historical data. A rare event is decomposed into more frequent events for which there is more experience available (e.g. evaluate system failure based on component failure data)*"<br>It also notes that:<br>"*The use of expert judgment is considered to be an important element within the FSA methodology. It not only contributes to the* | | |

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| | | | *proactive nature of the methodology, but is also essential in cases where there is a lack of historical data. Further historical data may be evaluated by the use of expert judgment by which the quality of the historical data may be improved."*<br><br>These latter points are particularly pertinent for Thanet Extension given the lack of historical collision data within the area, even given the addition of the existing Thanet OWF.<br><br>The evidence base is then used in all stages of the assessment as identified further with in the IMO circular which is detailed in Chapter 8 of the NRA and summarised below:<br><br>• Step 1: Identification of Hazards - NRA 8.2<br>• Step 2: Hazard Scoring - NRA 8.3<br>• Step 3: Risk Controls - NRA 8.5<br>• Step 4: Cost Benefit - NRA 8.5.3 Table 22<br>• Step 5: Recommendations - NRA 8.6<br><br>Turning to the specific points raised in the ExA's question:<br><br>A. Likelihood: The different hazard scenarios are identified through the IMO FSA process. A total of 38 hazards for the Construction/Decommissioning phase (see NRA Annex D), and 29 hazards for the operational phase (see NRA Annex E) – these are essentially two separate risk registers with the difference in total hazard numbers due to more vessel types for the construction/decommissioning phases.<br><br>In order to define the likelihood of each hazard for the purposes of completing the hazard logs and | | |

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| | | | drafting NRA Table 18 (Pg 112), the project team used the following information:<br>• Stakeholder consultation (e.g. MCA Annex C – pg C-2 Item 2.2)<br>• Analysis of traffic (see NRA 5)<br>• Incident data (derives return periods (e.g. See NRA 5.7 - Fig 40)<br>The expert judgment of project personnel was used in a workshop environment to review the evidential base (as identified above) and allocate hazard likelihood and consequence scores for the risk assessment. An example of this process is given in a worked example presented in the Supplementary Note in answer the ExA question 1.12.21 at Annex P. The assessment of likelihood is related to both the "Most Likely" occurrence of a hazard and the "Worst Credible" occurrence.<br>• Historical incident rates from NRA Section 5.7 are converted to return periods and used to calculate "Most Likely" incident rates that are correlated to the likelihood tables.<br>• A key issue is identifying "Worst Credible" frequency rates for hazards where there is no record of historical incidents occurring. Therefore, analysis was conducted on Marine Accident Investigation Branch data to understand how often collisions (which account for the most concerning incident type) | | |

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| | | | results in serious consequences fatalities (see NRA Section 8.3.1 for details).<br>B. For consequence estimates, incident data (both local and national – see Section 8.3.1) is used to classify the consequence categories of individual hazards. The data from the study area showed that no serious consequence incidents had occurred in the Marine Accident Investigation dataset data, and therefore for the "Most Likely" consequence low level hazard consequence values were applied, with variation between hazards primarily associated with the vessel type.<br>The consequence of "high" or "catastrophic" consequence hazards was taken from review of detailed Marine Accident Investigation Branch incident reports into serious incidents that had occurred for similar vessel types and sizes navigating in similar areas compared to those transiting the study area.<br>The consequence of hazards occurring do not change significantly between the Baseline, Inherent and Residual assessment of risk, as most changes in risk come about by the changes in hazard likelihood. Consequence scores are reviewed in conjunction with all hazards to ensure consistency. | | |
| 1.12.26. | The Applicant | Methodological source for numerical values given to risk criteria Please confirm the evidential basis for the numerical values allocated to risk criteria in the Hazard Logs? [APP-089] NRA Annex B NRA Methodology | Each of the individual hazards for the Construction/Decommissioning Phase, and Operation Phase of the windfarm, for the Baseline assessment of risk, are assessed based on historical incident data, vessel | No further responses received from other Interested Parties | No further response to be made by the Applicant |

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| | | | traffic data and following consultation with relevant stakeholders. In line with the IMO guidance a combination of historical data, analytical modelling, and expert judgement is used as the source for the numerical values given to risk criteria. Consultation is then undertaken to validate the scores. The consultation undertaken is presented in Annex I and J of this Deadline 1 submission. In order to answer this question in further detail the Applicant has provided a supplementary note detailing the methodological source of the hazard logs is also presented at Annex P. | | |
| 1.12.27. | The Applicant | Understanding Marico's Hazman software: Would the applicant please provide or guide the ExA to the provenance and credentials of "…Marico HAZMAN software" used for computation of risk, and in particular help us to understand:<br>a) How many NRAs has it been used for?<br>b) Whether the algorithms get modified as a consequence of monitoring and learning from experience?<br><br>[APP-089] NRA Annex B Methodology page B-2 | The risk equations that combine the likelihood and consequence of hazard occurrence to produce a single risk score are derived from HAZMAN II software.<br>A. HAZMAN has been employed in 206 unique navigation risk assessments, inclusive of undertaking studies for the Port of London Authority, and of those, 33 are attributed to projects to undertake navigation risk assessment in support of marine infrastructure developments. Examples include:<br>• St. Brieuc Offshore Wind Farm (France; 2012);<br>• East Anglia Offshore Wind Farm (UK, 2012);<br>• Strangford Lough Test & Demonstration Site (UK; 2014);<br>• Blyth Offshore Demonstrator Windfarm (UK; 2015);<br>• Strangford Lough SeaGen Decommissioning (UK; 2016).<br><br>The HAZMAN system was developed from research undertaken originally by the UK's Maritime & Coastguard Agency (MCA) in their development of Formal Safety Assessment (FSA). Marico Marine Founding Partner, John Riding, undertook this | No further responses received from other Interested Parties | No further response to be made by the Applicant |

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| | | | research, and used two standard risk matrices, one with scoring of a 'Most Likely' event and the other with scoring of a 'Worst Credible' event. Mr Riding was also involved in the development of Formal Safety Assessment whilst working for the MCA.<br><br>HAZMAN was originally developed in 1997-8 for use in quantifying marine risk in Port Authority (PA) waters. Its development occurred in parallel with the application of the FSA process to the port of Milford Haven (MH), following the grounding of the tanker Sea Empress in 1996. MH PA incident data set over 25 years was used to validate the HAZMAN output. HAZMAN II was further developed in 2013-4 when a risk reduction module was developed to quantify the risk reduction estimates associated with contemporary risk management practises. HAZMAN II is used extensively for offshore waters, where it competes with a not too dissimilar approach used by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) in their IWRAP solution.<br><br>The HAZMAN system employs averaging across a dual risk matrix to output a risk score which can take account of incident or accident data from marine events. This approach allows risk data to be produced that gives context around the range of incident outcomes that could occur, in order for it to generate a list of risks in rank order.<br><br>The system is represented by the risk matrix presented in NRA Annex B P-5.<br><br>Across the UK, there are over 30 Port Authorities who use HAZMAN by subscription as their primary navigational risk assessment solution (Port Marine | | |

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| | | | Safety Code in the UK). Examples include:<br>• The Port of London Authority (PLA);<br>• Bristol Port;<br>• Milford Haven;<br>• Aberdeen Harbour; and<br>• Teesport.<br>Examples of HAZMAN use outside of the UK include:<br>• Fremantle Port, Australia;<br>• Port of Wellington, New Zealand;<br>• Quantifying risks for consent and infrastructure development at Port Headland in Australia - the world's largest iron ore export facility; and<br>• Elsewhere in New Zealand, it has been used to obtain consent under the NZ Resource Management Act for marine development.<br>HAZMAN II is thus an internationally proven risk assessment/risk management package that caters to the specific hazard management needs of maritime risk. It continues to support navigation risk assessments for offshore renewable energy installations, oil and gas installations and port infrastructure developments world-wide.<br>B. The underlying algorithm within Hazman II used in this assessment is the risk matrix which enables the ability to combine likelihood scores that fall in between the five likelihood categories with the consequence categories. This algorithm is not modified and remains fixed. is not modified. The risk scoring used in the assessment were set using guidance see DTI 2005 Guidance and MCA/DECC 2013 Guidance.<br>"Learning from experience" is | | |

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| | | | however incorporated into the assessment of risk in the form of experience generated conducting NRA's, particularly around identification of hazard likelihoods generated from available data (including supplementary studies), stakeholder input and experience of the user, and determination of future traffic risk profiles for key hazards (e.g. collisions) through modelling. These learnings are then built into the assessment of risk in the Formal Safety Assessment methodology. | | |
| 1.12.28. | The Applicant | Mitigation of echoes on radar requiring users to reduce gain:<br>[APP-089] NRA Annex to Section 4 (minutes of Dec 2017 meeting with RYA and Chamber of Shipping) refers to a consultation concern that "…echoes on radar which requires users to reduce gain, thereby losing smaller targets (i.e. small boats)…".<br>a) Can the Applicant please confirm where in the NRA to find mitigation response. | Further detail on impact on communications, radar and positioning systems is provided in Section 7.9 of the Navigation Risk Assessment Application Ref 6.4.10.1<br>The assessment drew upon industry publications and practical trials that determined effects were not 'significant enough to either raise concern for navigational safety nor inhibit vessels tracking one another' and that 'navigators are able to effectively track other vessels from both within and behind the area of the wind farm' and 'small craft were detectable except when in very close proximity to a turbine'.<br>The concerns raised by the RYA in consultation on reflections and radar echo were noted albeit no evidence has been made available to suggest extant issues or effects as described with the existing wind farm. Furthermore, and comparative to the existing wind farm, the larger WTGs within the extension (relative to the existing wind farm) will provide a clearer radar picture, distort targets less and reduce potential for reflections and radar echo.<br>The assessment concluded that the | PLA and ESL's response:<br>It is the experience of the ESL's coxswains that their launches frequently suffer with interaction between their radar and the Wind Farm. When a pilot launch is operating between the Wind Farm and a ship, with the ship in close proximity, the radar becomes less effective. High sided vessels will often severely impede Very High Frequency (VHF) communication with the shore side operation (including Vessel Traffic Services (VTS)), the ship itself and other vessels on the side of the ship being served. In effect, the pilot boat can be blindsided. The coxswain will have to be confident that little or no deviation will be necessary during an act of pilotage. The reduction in sea room and, therefore, the potential increase in congestion present a significant planning issue for the coxswain with regards to a confident 'clear path' before he engages with the ship.<br>The Applicant does not appear to have proposed any mitigation for this in the NRA. | The Applicant wishes to note the following points in response to the PLA comments on<br>i) Radar interference<br>ii) VHF interference<br><br>**i) Radar interference**<br>The cause of the radar interaction noted by pilot cutter crews is due to the proximity of the pilot vessel to the larger vessel when boarding a pilot (likely causing radar reflections) and not the existing windfarm – otherwise it would be expected that the interference would be present at all times whether alongside a "high sided" ship or not.<br><br>However it is the case that the interaction seen when a pilot cutter is alongside a "high sided" ship will also occur in relation to navigation buoys, other passing vessels or even the Thanet coastline (were the pilot cutter close alongside the landward side of a "high sided" ship).<br><br>It is also the nature of bringing a pilot cutter alongside a larger ship that it inherently transits within an area of restricted visibility, both in terms of visual visibility |

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| | | | extension of the wind farm will not adversely affect the use of radar for collision avoidance and therefore assessed impacts as likely and negligible and minor in significance. Consequently, no mitigation for effects on radar are proposed, although the following mitigation measures are relevant to recreational vessels (also presented in Table 10.11 of Volume 2, Chapter 10 (Application Ref 6.2.10) of the Environmental Statement):<br>Embedded Mitigation<br>• Promulgation of information<br>• Approval of layout Plan<br><br>Additional Mitigation to reduce the risk to ALARP:<br>• Communication between project, sub-contractors and fishermen/leisure groups.<br>• Maintain lines of orientation and symmetry in the wind farm | | and radar visibility.<br><br>The Applicant therefore does not propose mitigation to mitigate ship borne effects of pilot cutter radar interference.<br><br>**ii) VHF interference**<br>The presence of the TEOWF would not increase the severity of any loss of VHF signal to the shore including to PLA VTS from a pilot cutter whilst boarding a pilot on the seaward side of a "high-sided" ship. If the VHF issue were to continue presenting a problem to pilot boarding operations, whilst it is not accepted that this would be associated with the TEOWF, the Applicant is would be willing to make available a suitably positioned wind turbine for the PLA / ESL to place a VHF repeater on to seaward of the pilot boarding station which could help alleviate this issue and reduce any perceived baseline risk.<br><br>THE PLA / ESL also comment on sea room that is adequately covered in answers to questions 1.12.1 and 1.12.3 However, the Applicant would like to clarify that a "clear path" of a vessel, prior to a pilot transfer, should be confirmed before a pilot cutter goes alongside a vessel, and suffers any transient radar or VHF issues which should not affect the judgement of determining a "clear path" by the pilot cutter coxswain. |
| 1.12.29. | The Applicant | Record of navigation risk workshop [APP-089] NRA Annex to Section 4 (minutes of Dec 2017 meeting with MCA) refers to a navigation risk workshop. Please confirm if this workshop has taken place and if it has where in the NRA to find the output and outcomes of this workshop. | An internal navigation risk workshop was held in accordance with the risk assessment methodology (see Annex B of the Navigation Risk Assessment Application Ref 6.4.10.1 and Section 8.1) and involved Marico Marine personnel. It drew upon the stakeholder consultation, traffic analysis, incident analysis, modelling and other supporting studies. The outputs of this workshop are principally the hazard logs as presented in Annex D and E of the NRA. | PLA and ESL's response:<br>The PLA and ESL can confirm that they were neither invited to attend nor did attend such a workshop. | The Applicant refers to the PLA and ESL's extensive engagement through consultation and participative sessions. Additionally, a specific meeting to inform the NRA was held on 05-Dec2017. All these were fed into the NRA.<br><br>The Applicant attempted to focus the PLA and ESL concerns into an evidence base through requests for information on pilot boarding operations, pilot station down |

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| | | | A workshop run through with MCA and THLS was proposed by Marico Marine at the meeting held with MCA on 05-Dec-2017 and agreed by the meeting attendees. This was followed up by Marico Marine on 30 & 31-Jan-2018, in order to review the developing risk assessment and undertake technical hazard scoring with a qualified expert although was subsequently declined by the MCA (ref email dated 31-Jan-2018 in Appendix 6 which was followed up by phone between Jamie Holmes and Capt David Turner). The meeting held on 15-Feb-2018 (see minutes in Annex J) was therefore focussed on:<br>• Presenting NRA to date<br>• Presenting routes analysis (from vessel traffic data)<br>• Collision risk modelling and relationship with NRA<br>• Scoring criteria and hazard definition<br>• Sources and utilisation of incident data<br>• Example hazard – basis of scoring (Hazard ID 6- Collision between 2x large commercial vessels – a hazard ID of concern)<br>• Risk control review<br>• Section 42 responses<br>• Next steps: inc agreement to share draft NRA prior to submission (done in Mar/Apr) | | time statistics, incident reports – but none of this information was presented.<br><br>The Applicant would like to point out that the responsible and statutory organisation for navigation safety in the study area of the NRA is the Maritime and Coastguard Agency, who were invited to participate in a navigation risk workshop (and declined). |
| 1.12.30. | The Applicant | Questions on Minutes of the Jan 2018 meeting with MCA and Trinity House appended to Section 4 of the NRA<br>Please confirm:<br><br>a) Minute item 10.8: to whom "Incidents and near misses are reported…"<br>b) Minute item 10.11: who will have the specific responsibility for maintaining "continuous watch of site by radar, AIS…."<br>c) Minute items 10.21: Is there an | The Applicant has not been able to reference Minute Items 10.8, 10.11 and 10.21 as referred by the ExA and therefore Iit is understood this question relates to the embedded risk controls and risk controls recommended to reduce risks within ALARP as per Tables 20 and 21 of the Navigation Risk Assessment Application Ref 6.4.10.1.It should also be noted that a Schedule of Mitigation accompanies this Deadline 1 submission. | Not Applicable | Not Applicable |

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| | | agreement in existence specifying who will relocate buoyage and when? | A. Table 20 - Risk Control ID No. 5: "Incidents and near misses are reported and investigated by developer and operators". ANSWER: Incidents and near misses are reported to the developer and operator and investigated in accordance with project protocols. In addition, those incidents/near misses are reported to the MAIB in accordance with criteria is published on (https://www.gov.uk/government/organisations/marine-accident-investigation-branch/about#regulations-and-guidance) and to the relevant Statutory Harbour Authority in accordance with their requirements.<br>B. Table 20 - Risk Control ID No. 7: "Continuous watch of site by radar, AIS, VHF, DSC and CCTV during construction by project's Marine Coordinator". ANSWER: The project will take responsibility for providing a continuous watch during the construction phase of the project.<br>C. Table 21 - Risk Control ID No. 7: "The existing wind farm is marked by two Cardinal marks; Thanet North (to the north) and Drill Stone (to the east). Both marks keep vessel traffic at least one nautical mile from the boundary of the existing wind farm and would require relocation or removal. The relocation of these would be determined following the finalisation of the WTG positions and the development of the layout plan and in consultation with the MCA and Trinity House". ANSWER: It is recognised by MCA and Trinity House that relocation of buoyage | | |

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| | | | (identified as Thanet North and Drill Stone) would be determined following finalisation of WTG positions and the layout plan and would be agreed in consultation with the MCA and Trinity House. | | |
| 1.12.31. | The Applicant | Moveable exclusion zone<br>Would the applicant please confirm its response to suggestions raised in minutes of Dec 2017 meeting with TFA appended to Section 4 of the [APP- 089] NRA of "a 500m moveable exclusion zone around the actual construction vessel" rather than along the whole cable corridor. | The Applicant can confirm that the assessment assumes a moving safety zone of 500m radius will apply during construction, extension or decommissioning of a wind turbine, or of major maintenance works and it is noted this is not an exclusion zone around the entire cable corridor (or array area).<br>For the purposes of clarification, the Applicant can further confirm that the moving 500m safety zone will be the subject of an application under the Energy Act 2004, and requires the final locations to be submitted to the relevant authority. Additionally a 50m exclusion zone, to apply during the operational phase around fixed above sea infrastructure (i.e. foundations) may be applied for.<br>Further information is provided in the Safety Zone Statement (Application Ref 7.2, PINS ref APP-132.<br>The Navigation Risk Assessment presents this information at Table 21 (Risk Control ID No 1 refers to the 500m safety zone and Section 9.2) and the commercial fisheries chapter (PINS Ref APP-050/ Application Ref 6.2.9) presents these assumptions in Table 9.10, noting that the terminology employed in the Commercial Fisheries chapter (*ibid*) is "an advisory safety area of 500m during construction", and a "50m safety zone radius during operation".<br>Annex C to Appendix 28 of this Deadline 1 submission contains two schematics of the respective zones in relation to the indicative turbine layout. It should be noted that the schematics identify a 450m buffer from the | No further responses received from other Interested Parties | No further response to be made by the Applicant |

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| | | | proposed RLB rather than a 500m buffer. This is because the WTG locations, due to the length of the blades needing to be within order limits, will be at least 50m within the proposed RLB. Therefore, the 500m safety zone when applied to the construction of a given WTG location will only ever extend up to 450m from the proposed RLB. | | |
| 1.12.32. | UK Chamber of Shipping | Effects to Vessel Traffic Routing<br>UK Chamber of Shipping Relevant Representation [RR-009] opposes the view that impact of TEOWF on Vessel Traffic Routing will be minor and believes that the NRA lacks sufficient detail. Would the UKCoS expand on their objections, ideally citing particular shortfall in detail? | The Applicant wishes to note that within the Chamber of Shipping SoCG (Appendix 23 to this Deadline 1 submission) accepts the view of the MCA that the NRA has been undertaken in line with the requirements of MGN 543. | UK Chamber of Shipping's response:<br>The UK Chamber of Shipping thanks the Planning Inspectorate for allowing a response to be made to the question posed in the Examining Authority's first round of questions. The chamber does not believe that proper and full consideration has been given to the implications the extension of the windfarm will have on traffic routeing within this area and the lack of sea room that will be a result of this development. The development will reduce the width of the traffic lane to the west from 3km to 1km resulting in the traffic density that currently exists to continue with less room putting vessels at unnecessary risk. Pilot boarding stations in this area will also be affected both from the "squeezing" of traffic and the reduced sea room for boarding and disembarking of pilots, manoeuvrability of the vessel for safety of transferring of personnel and changing conditions and abort positions for passage planning. The use of AIS data for this proposal illustrates a small area of clear sea between the existing windfarm development and commercial traffic and the chamber expresses its concern that this area is used as a safety buffer created by good and prudent seamanship rather than an area to erect further turbines. Vessels will be expected to reroute around this extended windfarm impacting on vessel steaming times, emissions and increasing density of traffic in areas already busy with | The Applicant notes UK Chamber of Shipping's comment on reduction of traffic lane width and, notwithstanding that this area is not a designated lane or navigation channel (albeit is a route) wishes to clarify the residual width available for navigation is in excess of 1km. With reference to Appendix 28 Annex B Sea Room Distance plot, the minimum width (at the narrowest between NE Spit buoy and the red line boundary) is 1.88nm (3.48km). Traffic Density of the inshore route referred to by UK Chamber of Shipping is shown in Appendix 25, Annex M Para 28 and demonstrates that transiting vessels do not make use of all the sea room available.<br><br>The Applicant has undertaken extensive study, including analysis of AIS data, bridge navigation simulation with ESL and PLA Pilots (together with collision risk modelling) to analyse the sea room required for safe boarding and disembarking of pilots - which can be maintained within the area.<br><br>The Applicant has concluded that the inshore route remains feasible for the vessels that use it and that sufficient sea room exists for pilot transfers and therefore there is no requirement for vessels to re-route around the wind farm (although the Applicant has analysed re-routing distances as presented within section 7.1.2 of the |

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| | | | | shipping traffic. The reduced sea room to the west of the development will result in smaller vessels encroaching on deeper water routes putting both small and larger vessels at more risk. The NRA appears to expect vessels to alter their operations to fit with the needs of the development with no regard to local buoyage, communications, traffic and pilotage. The chamber supports the suggestion for a Marine Coordination centre to management of vessels in the area and believes that the omission of this from the proposal highlights an oversight and increased risk. The NRA does not provide adequate detail of the mitigation measures being put in place to alleviate the pressures of traffic transiting this area either with current, or forecasted, traffic densities nor does it reflect real life operating conditions. The elevated risk in this area comes from those transiting with little knowledge of the area and in times of unfavourable weather rather than the conditions presented in the NRA. The pilot test conducted for the NRA was undertaken by local and experienced pilots in favourable conditions which does not highlight the risk to navigation when the area is transited by those less familiar with the waters which would provide a more accurate depiction of current operations. | NRA).<br><br>With respect to risk controls and mitigation, UK Chamber of Shipping's Marine Coordination Centre is noted in line with the mitigation which is laid out in the NRA within Tables 20 – 22 inclusive. The Applicant requests detail on the stated NRA shortfalls, particularly with regards to what further mitigation they consider could be reviewed.<br><br>The Applicant considers that the bridge navigation simulation is a key component to the understanding of risk in the area and directs ExA to the more comprehensive response on simulation provided in response to ExAQ 1.12.3 above and in the Applicants submission for Deadline 1 ( (appendix 25, Annex N).<br><br>In response to the Chamber of Shipping comments on searoom and pilotage boarding the Applicant would point the ExA to Applicant responses to above questions 1.12.1 and 1.12.3. |
| 1.12.33. | The Applicant | Mitigation of Echoes on Radar Requiring Users to Reduce Gain<br>[APP-089] NRA Annex to Section 4 (minutes of Dec 2017 meeting with RYA and Chamber of Shipping) refers to a consultation concern that "…echoes on radar which requires users to reduce gain, thereby losing smaller targets (i.e. small boats)…".Please confirm where in the NRA to find mitigation response to this point? | The Applicant refers the ExA to the response to Question No 1.12.28. | Not Applicable | Not Applicable |

## 9 ExQ1.16 Townscape, Landscape, Seascape and Visual

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| 1.16.1. | Kent County Council, Thanet District Council, Dover District Council and local business and resident Interested Parties | Onshore and Seascape Landscape and Visual Impact Assessment<br>Has the Applicant proposed adequate siting and design landscape and visual mitigation measures for onshore works, taking account of public access to and recreational use of the Pegwell Bay Country Park, National Nature Reserve and foreshore areas? If not, what additional measures should be taken and why? | The Applicant notes that this is a question to Kent County Council, Thanet District Council, Dover District Council and local business, residents and Interested Parties, however the following response is put forward by the Applicant to help the ExA understand the rationale for the proposals.<br><br>3 options for the landfall and cable works within Pegwell Bay Country Park were presented in the ES Chapter 1: Project Description (Onshore) (PINS Ref APP-057/ Application Ref 6.3.1).<br><br>Option 2 is no longer part of the design envelope. The surface laid berm within Pegwell Bay Country Park included as part of Option 2 is therefore no longer proposed.<br>The onshore cable will be trenched through Pegwell Bay Country Park and NNR as described in the landfall and cable works Options 1 and 3 presented in the ES Chapter 1: Project Description (Onshore) (PINS Ref APP-057/ Application Ref 6.3.1).<br>Proposals to trench the onshore export cable and re-establish the existing ground profile and groundcover along its route are considered to be suitable siting and design mitigation measures, taking account of public access to and recreational use of the Pegwell Bay Country Park/National Nature Reserve.<br>Option 1 uses Horizontal Directional Drilling from the Pegwell Bay Country Park to the Intertidal Mudflats; and Option 3 uses open trenching through the existing sea wall.<br>In both options, the onshore export cables will be buried for the entirety of the onshore cable route, avoiding the need for a surface laid berm through the Country Park. This therefore results solely in short-term and temporary effects during construction, and largely avoids long-term and permanent effects on the landscape and visual amenity of the Country Park during operation.<br>Under Options 1 and 3, habitats would be reinstated following construction of the landfall and installation of the cables. The overall aim of the reinstatement would be to enable either the re-establishment of existing grassland habitats or the creation of species-rich grassland.<br>The omission of Option 2 in favour of Option 1 and 3 is considered to achieve good practice in accordance with guidance (GLVIA3), insofar as it achieves mitigation at the highest possible level in the hierarchy i.e. one of prevention/avoidance, with primary mitigation measures to avoid a surface laid berm within the Country Park, now embedded into the project design.<br>It is considered that the design mitigation measures for the onshore | Not Applicable<br><br>DDC's response:<br><br>DDC is of the view that the Applicant has proposed adequate siting and design landscape and visual mitigation measures for onshore works, taking account of public access to and recreational use of the Pegwell Bay Country Park, National Nature Reserve and foreshore areas. This is largely addressed in the submitted Outline Access Management Strategy (Doc. 8.4). In view of the nature of the proposed underground works in these areas, DDC at this stage, could not identify any further measures or steps to minimise and mitigate these matters further other than minimising as far as possible the timescale for each construction phase across these areas, minimising the work area and construction compound size and undertaking works outside of the peak summer time season. | The Applicant notes that DDC, KCC and TDC are all of the view that the Applicant has proposed adequate siting and design landscape and visual mitigation measures for the onshore cable works within Pegwell Bay Country Park.<br><br>Comments are provided on each Interested Party Response (at D1) as follows:<br><br>As explained in the Environmental Statement Project Description (onshore) chapter throughout [APP-057] the Applicant will seek to minimise as far as possible the timescale for each construction phase across the Pegwell Bay Country Park, National Nature Reserve and foreshore areas areas. The Applicant will not undertake construction works for longer than is strictly necessary. |

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| | | | works are 'reasonable' insofar as the National Policy Statement (EN-1, Paragraph 5.9.8 and 5.9.16) is concerned having been 'designed carefully, taking account of the potential impact on the landscape' and 'providing reasonable mitigation where possible and appropriate' in order to 'minimise harm on the landscape'.<br>The landscape and visual mitigation measures for the onshore works are therefore considered to be adequate by the Applicant, but also in accordance with relevant standards for landscape mitigation. | KCC's response:<br><br>Within Options 1 and 3 for the cable route, the design, landscape and visual mitigation is adequate and takes considerations around public access, recreational use and park management into account. However, the cumulative impact with the Nemo link needs to be better understood by the applicant. There is a possibility of the two cables running parallel to each other (even if trenched) and firmer measures need to be in place to ensure a 'valley' feature is not created, which will adversely affect the management and access of the park.<br>KCC acknowledges that Option 2 has been removed from the DCO application. The Local Impact Report details the specific LVIA measures to be taken for Options 1 and 3. | The Applicant is of the view that a permanent 'valley' feature will not be created within either of Options 1 and 3 for the cable route. In both options, the onshore cable will be trenched underground, without the need for a surface laid berm and therefore no potential for a permanent 'valley' feature to be created by two surface laid bunds parallel to one another.<br>Temporary topsoil and subsoil stockpiles from the excavated cable trench will only be present during the construction period and will be used to reinstate the cable trench and original ground profile, ensuring that a 'valley' feature will not be created in parallel to the Nemo bund. |
| | | | | TDC's response:<br><br>Thanet District Council considers the required submission of an Landscape and Ecological Mitigation plan, to include reinstatement and restoration of the landscape from the installation of the cabling, will adequately manage the visual impact after construction. | The Applicant has produced an Outline Landscape and Ecological Management Plan (OLEMP) (Doc. Ref. 8.7) which includes details on the proposed reinstatement and restoration of the landscape from the installation of the onshore cabling. The OLEMP is intended as a precursor to a more detailed LEMP, which would be produced and agreed with Thanet District Council (TDC) and Dover District Council (DDC), in consultation with Natural England and other Interested Parties, post consent, but prior to any connection works commencing. |

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| 1.16.2. | Kent County Council, Thanet District Council, Dover District Council, Kent Wildlife Trust, Natural England, National Trust, local business and resident Interested Parties | Outline Landscape and Ecological Management Plan (Onshore) Application document [APP-142] sets out outline landscape management measures to be delivered in tandem with ecological measures.<br>a) Are the proposed landscape screening measures at the substation set out in Chapter 3 adequate to address the landscape and visual impacts of the proposed substation (Work No.13) and if not, what changes should be made to the document; and<br>b) Are any other landscape screening or enhancement measures to address the onshore landscape and visual effects of the proposed development<br>required and if so, why and in what terms should they be added to the document? | The Applicant notes that this is a question to Kent County Council, Thanet District Council, Dover District Council and local business, residents and Interested Parties, however the following response is put forward by the Applicant to help the ExA understand the rationale for the proposals.<br>The proposed landscape screening measures at the substation, set out in Chapter 3 and Figures 2 and 3 of the OLEMP (PINS Ref APP-142/ Application Ref 8.7), are considered by the Applicant to be adequate to address the landscape and visual impacts of the proposed substation. Whilst not considered to be necessary mitigation, due to the industrial context of the substation site, general absence of sensitive receptors and the presence of existing tree belts that provide screening around the boundary of the substation site, further woodland/shrub belt planting is proposed to the north and east of the substation site (Figure 2 and 3 of the OLEMP).<br>Tree planting to the north of the proposed substation has been included as specific visual enhancement through consultation with Dover District Council.<br>Planting is proposed to screen views of the substation experienced by motorists and walkers from the Richborough Roundabout/Ramsgate Road (A256) (Viewpoint 1)). This would also strengthen existing screening from more distant views, such as from the England Coastal Path, near Shell Ness (Viewpoint 4).<br>The Applicant considers that the proposed screen planting for the onshore substation would be effective and deliverable, in order to address the onshore landscape and visual effects of the proposed substation. | Not Applicable | a. The Applicant notes that DDC, KCC and TDC are all of the view that the proposed landscape screening measures at the substation set out in Chapter 3 of the OLEMP (Doc. Ref. 8.7) are considered adequate to mitigate the landscape and visual impacts of the proposed substation (Work No. 13 of the Draft DCO).<br><br>Comments are provided on each Interested Party Response (at D1) as follows: |
| | | | | DDC's response:<br>a) The proposed outline landscape management measures to provide landscape screening measures for the proposed sub-station are considered adequate to mitigation the landscape and visual impacts of the proposed substation set out (Work No. 13 of the Draft DCO). The additional information submitted, in respect of the potential visual impact of the sub-station to address DDC's concerns raised in the S42 consultation, has been of assistance and has adequately addressed all the concerns raised. Of the two options being put forward in the Outline Landscape and Ecology Management Plan (Doc. Ref. 8.7) Option A would be the preferred scheme, due to providing enhanced landscape screening at the entry/exit onto the roundabout. The outline proposals to include retention of existing trees, additional screen planting and habitat enhancement are all welcomed and in the long term should | a. The Applicant notes that of the two options put forward in the OLEMP (Doc. Ref. 8.7), Option A would be DDC's preferred scheme. A landscape plan will be produced as part of the detailed LEMP and agreed with Dover District Council (DDC) and other Interested Parties**.** |

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| | | | | minimise the visual impact of the proposed structures, subject to detailed consideration of the proposed tree species.<br>b) DDC at this stage are of the view that there is limited scope for other landscape screening or enhancement measures to address the onshore landscape and visual effects of the proposed substation development. | |
| | | | | KCC's response:<br>a) KCC is satisfied with the proposed landscape screening measures at the substation.<br>b) As detailed in the Local Impact Report, within Option 1 (HDD), it is stated in the Outline Landscape and Ecological Mitigation Plan (OLEMP) that a larger work area will be required (around 50x60m). It is unlikely this will be possible in the area outlined as the 'works area', as this space is not available on site. This is due to the proximity of the main road, the sustrans path and the NEMO bund leaving little space to develop a work area. The allocated space within the OLEMP will need to be reviewed with the relevant KCC officers to redetermine the 'works area'. Within Option 3 (open trenching), the England Coast Path (ECP) will be affected, if not temporarily closed, due to the planned works.<br><br>The applicant should work closely with relevant KCC officers to ensure the path is adequately re-routed to allow access across the park, whilst the works are undertaken. The OLEMP states | b. Within Option 1 (HDD) the 50x60m 'works area' is not part of the construction compound, but is part of the HDD works described in the DCO as 'works to facilitate horizontal drilling'. This would be located to the east of the Nemo bund and is not particularly space restricted. With regards Option 3 (open trenching), consideration of access including the England Coast Path (ECP) is set out in the Access Management Strategy, required for approval prior to construction. The Applicant will work closely with relevant KCC officers with regards access whilst the works are undertaken. |

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| | | | | that 'where possible, soils will be carefully restored'. This will need to be looked at in detail with KCC officers to agree the reinstatement of the soil and a method of colonisation of vegetation.<br>KCC would also stipulate that any stock fencing (added or removed) during the proposed works for the onshore cabling is carried out by an approved KCC contractor and at the applicant's expense. | The Applicant can confirm that any stock fencing (added or removed) during the proposed works for the onshore cabling will be approved through the DCO and responsibility for installing temporary fencing during construction would be that of the contractor. |
| | | | | KWT's response:<br>KWT do not have any points to make about these points in particular, however we have made comments on the revised OLEMP document as a whole and these have been sent to the applicant and are included in the written representation. The areas of 'poor habitat' (bare ground) need to be maintained and managed as bare ground up until commencement of construction in order to ensure that reptiles will not be present when construction begins. Vegetation clearance is to be supervised by an Ecological Clerk of Works (ECoW).<br>In terms of breeding birds, the vegetation to be cleared should be checked for active nests by the ECoW approximately 48 hours before clearance. If active nest are found, the „applicable area" radius will need to be defined to ensure minimal disturbance to nesting birds. | The Applicant notes that the OLEMP (PINS Ref APP-142/ Application Ref 8.7) includes details of measures to avoid the inadvertent killing or injuring of reptiles and damage to active bird nests. The OLEMP also includes a commitment to provide an ECoW to supervise vegetation clearance works in relevant areas. The OLEMP therefore addresses the comments made by KWT in response to this question. |

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| | | | | Natural England's response:<br>In reviewing the Environmental Statement Natural England has no outstanding concerns regarding landscape issues. | The Applicant notes that Natural England has no outstanding concerns regarding landscape issues. |
| | | | | TDC's response:<br>(a) Thanet District Council defers to Dover District Council on the matter as the relevant local authority.<br>(b) Thanet District Council considers the required submission of an Landscape and Ecological Mitigation plan, to include reinstatement and restoration based on the outlined methods in the outline landscape and ecological management plan, will be suitable to adequately managing the visual impact after construction. | The Applicant has produced an Outline Landscape and Ecological Management Plan (OLEMP) (Doc. Ref. 8.7) which includes details on the proposed reinstatement and restoration of the landscape from the installation of the onshore cabling. The OLEMP is intended as a precursor to a more detailed LEMP, which would be produced and agreed with Thanet District Council (TDC) and Dover District Council (DDC), in consultation with Natural England and other Interested Parties, post consent, but prior to any connection works commencing. |
| 1.16.3. | Kent County Council, Thanet District Council, Dover District Council, Kent Wildlife Trust, Natural England, National Trust, local business and resident Interested Parties | Landscape and Visual Effects of Cable Alignments in Pegwell Bay Country Park and National Nature Reserve<br>Have adequate siting and design mitigation measures been taken to address the landscape and visual effects of cable alignments in Pegwell Bay Country Park and National Nature Reserve? If not, please identify if any additional measures are sought and for what purpose.<br><br>In particular, please provide your assessment of the adequacy of the following measures. If you conclude that any are not adequate, please identify how you recommend that the measures should be changed.<br>a) Changes to the sea wall at the landfall location in Pegwell Bay | The Applicant notes that this is a question to Kent County Council, Thanet District Council, Dover District Council and local business, residents and Interested Parties, however the following response is put forward by the Applicant to help the ExA understand the rationale for the proposals.<br><br>Three options for the landfall and cable works within Pegwell Bay Country Park were presented in the ES Chapter 1: Project Description (Onshore) (PINS Ref APP-057/ Application Ref 6.3.1).<br><br>Option 2 is no longer part of the design envelope. The surface laid berm within Pegwell Bay Country Park included as part of Option 2 is therefore no longer proposed.<br><br>The onshore cable will be trenched through Pegwell Bay Country Park and NNR as described in the landfall and cable works Options 1 and 3 presented in the ES Chapter 1: Project Description (Onshore) (PINS Ref APP-057).<br><br>Responses are provided to parts (a), (b) and (c) as follows.<br><br>A. In respect of changes to the sea wall at the landfall location, Option 1 uses Horizontal Directional Drilling from the Pegwell | DDC's response:<br><br>DDC are of the view that adequate siting and design mitigation measures have been taken to address the landscape and visual effects of cable alignments in Pegwell Bay Country Park and the National Nature Reserve, especially following the recent decision by the applicant to remove Option 2 (the above ground cable alignment and extension of the seawall).<br><br>a) (Work No.3B) DDC understand that Option (2) has now been removed from the proposals;<br><br>b) The reinstatement and management of the cable alignment from the landfall location through Pegwell Bay | The Applicant notes that DDC is of the view that the Applicant has proposed adequate siting and design landscape and visual mitigation measures to address the landscape and visual effects of cable alignments in Pegwell Bay Country Park and National Nature Reserve. |

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| | | Country Park (Work No.3B);<br>b) Reinstatement and management of the cable alignment from the landfall location through Pegwell Bay south west to the boundary of the National Nature Reserve (Works Nos.4 and 4A); and<br>c) The landscape and visual relationship between the cable alignment from the landfall location through Pegwell Bay south west to the boundary of the National Nature Reserve and the adjacent existing Nemo Link cable alignment (Works Nos.4 and 4A). | Bay Country Park to the Intertidal Mudflats; and Option 3 uses open trenching through the existing sea wall. Option 1 will negate the need to interact with the sea wall and saltmarsh, as cables will be installed underneath the sea wall connecting the transition joint bays (TJBs) (sited below ground) to offshore punch-out locations seaward of the existing sea wall. Option 3 requires the installation of a temporary cofferdam and temporary removal of the sea wall, however the sea wall would be reinstated to its pre-construction condition, TJBs will be installed below ground (as with Option 1) and cables would be buried. Potential changes to the sea wall associated with Option 3 are therefore short-term and temporary.<br><br>The landscape and visual siting and design mitigation measures to address the changes to the sea wall at the landfall location are therefore considered by the Applicant to be adequate.<br><br>B. In respect of reinstatement and management of the onshore export cable, under Options 1 and 3, habitats would be reinstated following construction and installation of the cables. The overall aim of the re-instatement would be to enable either the re-establishment of existing grassland habitats or the creation of species-rich grassland, as detailed in the OLEMP (2.1.7 – 2.1.12). Revegetation of reinstated soils is most likely to take place via natural colonisation but could also take place via seeding. Reinstated habitats will be subject to an initial aftercare period of 12 months following reinstatement. The methods of aftercare are likely to include the management of undesirable weeds and (if seeding is used) at least two cuts during the initial 12 month aftercare period, with seeded areas protected from disturbance by people or grazing animals. Following this initial aftercare period, it is envisaged that ongoing management would revert back to the existing management regimes.<br><br>C. In respect of the landscape and visual relationship of the onshore export cable alignment with the existing NEMO Link cable alignment, the onshore export cable will be trenched for both Options 1 and 3, avoiding the need for a surface laid berm through the Country Park. The potential landscape and visual effects of an additional surface laid bund, adjacent to the existing NEMO Link bund, have therefore been avoided through the primary mitigation measures now embedded into the project design. The cable route has been aligned to run parallel to the Nemo bund, thereby consolidating and limiting the spread of effects into the wider country park and NNR. | south west to the boundary of the National Nature Reserve (Works Nos.4 and 4A) appears to be a considered approach and route through Pegwell Bay. The development envelope has been more defined in the DCO submission and seeks to minimise the impact of the siting of the cable alignments in view of the features of the park, taking into account public accessibility, footpaths and the existing Nemo link. It should be noted that DDC did not support the originally proposed above ground works for the cable alignment or the principle of an extension to the seawall for this purpose.<br><br>c) In terms of the landscape and visual relationship between the cable alignment from the landfall location through Pegwell Bay south west to the boundary of the National Nature Reserve and the adjacent existing Nemo Link cable alignment (Works Nos.4 and 4A), due to all works now taking place below ground it is not considered there will be a long term impact on the landscape and visual relationships associated with these works. The key to minimising the impact in this location will be appropriate management of construction works and reinstatement and restoration works. | |
| | | | | KCC's response:<br><br>a) KCC's preference is for the Transition Joint Bay (TJB) to be underground, as this will reduce the impact on access and | a) TJBs will be installed below ground for Option 1 and 3 in line with KCC's preference.<br>b) It is not appropriate to agree the precise location of the TJB |

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| | | | Proposals to trench the onshore export cable and re-establish the existing ground profile and groundcover along its route are considered to be suitable siting and design mitigation measures.<br><br>The omission of Option 2 in favour of Option 1 and 3 is considered to achieve good practice in accordance with guidance (GLVIA3), insofar as it achieves mitigation at the highest possible level in the hierarchy i.e. one of prevention/avoidance.<br><br>These design mitigation measures for the onshore export cable works are also 'reasonable' insofar as the NPS (EN-1, Paragraph 5.9.8 and 5.9.16) is concerned having been 'designed carefully, taking account of the potential impact on the landscape' and 'providing reasonable mitigation where possible and appropriate' in order to 'minimise harm on the landscape'.<br><br>The landscape and visual siting and design mitigation measures to address the landscape and visual effects of cable alignments are therefore considered by the Applicant to be adequate, but also in accordance with relevant standards for landscape mitigation. | recreation in the Park. If the TJB is sited overground, this will adversely affect the flat coastal path. Under Option 1, the sea wall would be kept as it currently is. Under Option 3 (trenching), if the England Coast Path (ECP) is temporarily diverted, KCC would like to see the entire section of the coast path upgraded within the Country Park, as the construction work is carried out. The position of the TJB within the Red Line Boundary (RLB) needs to be agreed with KCC and sited away from the busy crossroads area of the internal path structure. This would not only reduce disruption to walkers, but also reduce the need to reinstate the public walkway.<br><br>b) Within Option 3 (trenching), if the planned route is centered within the RLB, this will result in the trench and TJB being sited on the busiest section (crossroads) of the Country Park. The OLEMP states that 'where possible, soils will be carefully restored'. Reinstatement of soil and the method of recolonisation of vegetation will need to be agreed with KCC, as set out in OLEMP section 2.1.7 – 2.1.12. It would be sensible to keep the trench line away from the footpaths altogether.<br><br>c) KCC has no comments on this question. | with KCC as this will be determined by multiple technical considerations including the ground conditions, which landfall installation option is chosen and the alignment of the offshore export cables.<br><br>The Applicant would be required to reinstate the coastal path in accordance with the Access Management Strategy (*ibid*) |

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| | | | | KWT's response:<br>Kent Wildlife Trust's remit relates to the biodiversity and wildlife impacts of the cable alignments in Pegwell Bay Country Park and the National Nature Reserve therefore our comments on landscape and visual effects are limited.<br>Regarding point a): we believe more details are needed before we can approve of any changes to the seawall. | The Applicant can confirm, as provided at Deadline 1, that landfall Option 2 is no longer part of the design envelope of the proposed project. As such any change to the seawall would be temporary, limited to the construction phase, and dependent on the final landfall methodology adopted (i.e. under Option 1 there is no interaction with the seawall required. |
| | | | | Natural England's response:<br>In reviewing the Environmental Statement Natural England has no outstanding concerns regarding landscape issues within the Pegwell Country Park and the National Nature Reserve. | The applicant notes that Natural England has no outstanding concerns regarding landscape issues within the Pegwell Country Park and the National Nature Reserve. |
| | | | | National Trust's response:<br>a) Work No3.B changes to the sea wall. The National Trust do not agree changes to the sea wall without further consultation and provision of detailed plans and designs of any proposed changes to the sea wall. To date we have no designs or detail as to the structure its location and any construction requirements particular as regards the cable connector against which to assess any impacts, so we are unable to provide a fuller answer.<br>b) Works Nos 4 and 4A cable alignment. On the basis of the withdrawal of Option B for the overland cable route we accept the underground route and reinstatement and management | a) The Applicant can confirm, as provided at Deadline 1, that landfall Option 2 is no longer part of the design envelope of the proposed project. As such any change to the seawall would be temporary, limited to the construction phase, and dependent on the final landfall methodology adopted (i.e. under Option 1 there is no interaction with the seawall required.<br>b) and c) the onshore cable route will be reinstated and managed to a standard approved and acceptable to the relevant planning authority following the approved LEMP and in consultation with the relevant landowners. |

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| | | | | of this route to a standard approved and acceptable to Kent CC and Kent Wildlife Trusts as the land managers for the Country Park.<br>c) Works Nos 4 and 4A cable alignment adjacent to the Nemo Link. On the basis of the withdrawal of Option B for the overland cable route we accept the underground route and reinstatement and management of this route to a standard approved and acceptable to Kent CC and Kent Wildlife Trusts as the land managers for the Country Park. | |
| | | | | Nemo Link Limited response:<br>NLL notes the reference to Nemo in this question, and reserves the right to respond to any response to this question. | The Applicant notes this response and will continue to liaise with Nemo Link Limited |
| | | | | TDC's response:<br>Given the limited options to mitigate the impact through siting and design measures (given the parameters within the works proposed), Thanet District Council does not consider there are additional measures that could be introduced to mitigate the offshore works. Thanet District Council considers that the reduction in site area of the project (from the Preliminary Environmental Impact Report and pre-application consultation) has mitigated some of the seascape impact (through the reduction in horizontal width on the skyline from the coastal viewpoints), and the Council understands that the | The Applicant has produced an Outline Landscape and Ecological Management Plan (OLEMP) (Doc. Ref. 8.7) which includes details on the proposed reinstatement and restoration of the landscape from the installation of the onshore cabling. The OLEMP is intended as a precursor to a more detailed LEMP, which would be produced and agreed with Thanet District Council (TDC) and Dover District Council (DDC), in consultation with Natural England and other relevant parties, post consent, but prior to any connection works commencing. |

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| | | | | siting will be dictated by other consenting regimes. Therefore there is no further mitigation that could meaningful and logistically alter the development and its impacts from those outlined in the Environmental Statement. | |
| 1.16.4. | Kent County Council, Thanet District Council, Dover District Council, Kent Wildlife Trust, Natural England, National Trust, local business and resident Interested Parties | Offshore Works<br>Has the Applicant proposed adequate siting and design, seascape, landscape and visual mitigation measures for offshore works and particular wind turbine generator (WTG) arrays, taking account of their relationship with the existing Thanet Offshore Wind Farm and the potential differences of scale between the installed and proposed WTGs? If not, what additional measures should be taken and why? | The Applicant notes that this is a question to Kent County Council, Thanet District Council, Dover District Council and local business, residents and Interested Parties, however the following response is put forward by the Applicant to help the ExA understand the rationale for the proposals.<br>The siting and design of the Offshore WTG Array has incorporated mitigation to reduce the scale of the project and the resulting landscape and visual effects. This is described in section 12.9 of Chapter 12 of the ES (PINS Ref APP-053/ Application Ref 6.2.12)).<br>The siting of the Offshore WTG Array minimises effects on valued landscapes, entirely avoiding significant effects on any national and local landscape designations.<br>The careful siting of the Offshore WTG Array around the existing TOWF is a mitigating factor, insofar as the apparent changes occur in the presence of an existing offshore wind farm influence. The Offshore WTG Array will be assimilated into views of the existing WTGs, increasing the influence of WTGs that are already present in existing views, without introducing entirely new or uncharacteristic elements.<br>Seascape, landscape and visual mitigation measures have been included to reduce these impacts. In particular, the north-western extent of the Offshore Wind Farm area boundary was modified, which reduced the lateral extent of the Offshore WTG array in this north-western area and mitigated the potential effects relating to the visual merging of TOWF and London Array. These changes also contributed to reducing the partial enclosure of the open aspects of the Sandwich and Pegwell Bay area and created a larger separation between the coast and the Offshore WTG Array. These changes in the Rochdale Envelope WTG layout (Figure 12.1a) assessed in the Environmental Statement, have reduced the scale of the project and helped to mitigate seascape, | DDC's response:<br>The proposed siting and design, seascape, landscape and visual mitigation measures for offshore works and in particular WTG arrays have taken account of their relationship with the existing Thanet Offshore Wind Farm and the potential differences of scale between the installed and proposed WTGs. However, DDC would suggest that the Optimum Space Layout (Fig. 12.1 in ES Volume 6 Annex 12-1 Rev A – Doc Ref 6.6.12.1) to site the array in closer proximity around the existing offshore array may minimise the visual spread across the seascape which could mitigate the visual impact over a wider area. Any reduction in the extent of the array in a southerly direction could remove DDC's concern regarding the visual impact on the seascape from DDC's administrative area. | The Applicant notes DDCs suggestion that the Optimum Space Layout (Figure 12.1 in ES Volume 6 Annex 12-1) WTG array could be sited in closer proximity around the existing offshore array, in order to minimise the visual spread. In order to meet the required minimum separation distance between WTGs, ensure suitable offset from the existing Thanet Offshore Wind Farm and design the most efficient layout for maximum electricity generation of the WTGs, flexibility is required within the Order Limits. |
| | | | | KCC's response:<br>KCC has no comments on this question. | The Applicant notes that KCC has no comments on this question. |

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| | | | landscape and visual effects (in accordance with NPS EN-1 and EN-3).<br><br>It is acknowledged by the Applicant that the proposed WTGs are larger in scale than those of the existing TOWF. However, reducing the scale of the WTGs will would result in a significant reduction in function, in terms of the electricity generation output. The Applicant has sought to find a balance between utilising the most recent technology, cost efficiency and the visual impacts of the Offshore Wind Farm. Larger WTGs are important in that context in terms of costs to consumers, since these larger WTGs are more efficient and can produce much significantly more electricity. Larger than smaller WTGS, which reduces the costs to consumers. This increased efficiency also means that the number of larger WTGs allow less overall number of WTGs required in the Offshore WTG Array is fewer to achieve the same generating capacity., as the larger WTGs are more efficient and are important in terms of reducing costs to consumers.<br><br>The potential differences of scale between the installed and proposed WTGs is illustrated in the photomontage visualisations in Figures 12.27 – 12.55 (PINS Ref APP-127 and APP-127).<br><br>The realistic worst-case layout shown in the photomontages and assessed as the project design envelope for the SLVIA is the 28 x 12 MW optimum space layout (as shown in Figure 12.1a). The larger blade tip height of the 12 MW WTG (250 m blade tip) and larger rotor diameter (220 m) will have the most apparent scale differences when viewed in combination with TOWF (115 m blade tip).<br><br>This layout was agreed as the 'worst-case' in terms of visual effects with stakeholders as part of the Evidence Plan consultations. It is weighted to have the maximum number of WTGs located in the areas within the site boundary that are closest to the coast. WTGs located in closer proximity to the coast, located on the coastal side of TOWF, will appear larger in | KWT's response:<br><br>Kent Wildlife Trust's remit relates to the biodiversity and wildlife impacts of this development. We are not in a position to comment on the landscape/seascape and visual impacts to people, however, we believe the offshore works described will have an impact on seabirds. Although we will primarily defer to the RSPB regarding ornithological concerns, we believe that additional measures should be taken regarding construction and post-construction monitoring. There is currently insufficient information about plans to monitor seabirds during and post-construction. | The Applicant can confirm that the existing Thanet OWF has provided ornithological monitoring that is designed to inform national projects (ORJIP). The Applicant can also confirm that RSPB have limited residual concerns regarding the proposed project and are deferring to Natural England. As such the Applicant continues to engage constructively with Natural England to determine the need and focus of any offshore ornithological monitoring. |
| | | | | National Trust response:<br><br>The National Trust has no view on the Offshore Works provisions. | The Applicant notes that the National Trust has no view on the Offshore Works provisions. |
| | | | | Natural England's response:<br><br>In reviewing the Environmental Statement Natural England has no outstanding concerns, and thus no further comment regarding offshore seascape issues within our remit. | The Applicant notes that Natural England has no outstanding concerns, and thus no further comment regarding offshore seascape issues within their remit. |

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| | | | scale and have a more marked scale difference, than WTGs located behind TOWF on the seaward side of the operational WTGs.<br><br>Consultation responses noted that due to the increase in height of the new WTGs their appearance would have some effect on the skyline beyond Margate in views from the west; however stakeholder responses noted that the significance of these views would be limited and that, as with the existing turbines, they will be assimilated as part of the skyline views. The apparent differences of scale between the installed and proposed WTGs does vary between geographic areas and with distance.<br><br>The Applicant considers that the Project has been designed carefully with reasonable mitigation, taking account of environmental effects on the landscape and other relevant constraints, to minimise harm to the landscape and that in this regard it accords with NPS EN-1. | TDC's response:<br><br>Given the limited options to mitigate the impact through siting and design measures (given the parameters within the works proposed), Thanet District Council does not consider there are additional measures that could be introduced to mitigate the offshore works. Thanet District Council considers that the reduction in site area of the project (from the Preliminary Environmental Impact Report and pre-application consultation) has mitigated some of the seascape impact (through the reduction in horizontal width on the skyline from the coastal viewpoints), and the Council understands that the siting will be dictated by other consenting regimes. Therefore there is no further mitigation that could meaningful and logistically alter the development and its impacts from those outlined in the Environmental Statement. | The Applicant notes that Thanet District Council does not consider there are additional measures that could be introduced to mitigate the offshore works; and that no further mitigation could meaningfully and logistically alter the development and its impacts from those outlined in the Environmental Statement. |

## 10 ExQ1.17 Transportation and Traffic

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| 1.17.1. | The Applicant | Construction Traffic Effects: Construction Shore Base for Offshore Works<br>Please confirm that the construction base for offshore works is not yet known. What if any steps should be taken to ensure that the construction traffic<br>effects of the onshore base for offshore works are taken into account and managed? | The Applicant can confirm that the construction base for offshore works is unknown. The Applicant infers to the construction base for offshore works as the "Base Port" as identified in Paragraph 8.10.9 of Volume 3, Chapter 8: Traffic and Access (PINS Ref APP-064/ Application Ref 6.3.8) of the Environmental Statement.<br>It is assumed that very few construction trips would route to the Base Port and therefore likely to result in negligible impact compared with construction trips associated with onshore cable works and substation.<br>The CTMP is secured within the DCO at Requirement 21, which requires the Plan to be submitted to and approved by the Kent County Council as the relevant highway authority. | No further responses were provided by other Interested Parties | The Applicant therefore has no further response to make |
| 1.17.2. | The Applicant | Construction Traffic Effects: Onshore Effects on Sandwich Road<br>Para 8.18.2 of [APP-064] ES Chapter 8: Traffic and Access identifies that there could be 'Major Adverse' effects of construction-related traffic to Sandwich Road before "proposed embedded mitigation" whereas Table 8.17 shows 'Minor Adverse' effects to Sandwich Road. Would the applicant please confirm:<br><br>a) If Table 8.17 is showing 'Minor Adverse' effects subject to embedded mitigation;<br>b) In which case, identify the embedded mitigation and confirm that it will bring about the change to effects suggested; and<br>c) If all the "proposed embedded mitigation" needs to be activated in order for the adverse effects to be reduced to "Minor" | A. The Applicant can confirm that Table 8.17 of Volume 3, Chapter 8: Traffic and Access (PINS Ref APP-064/ Application Ref 6.3.8) of the Environmental Statement showing "Minor Adverse" effects is indeed subject to embedded mitigation as identified in Paragraphs 8.17.1 and 8.18.3 of (PINS Ref APP-064/ Application Ref 6.3.8).<br>B. Embedded mitigation is identified in Section 8.9 of (PINS Ref APP-064/ Application Ref 6.3.8). Mitigation measures have been secured in the Code of Construction Practice (CoCP) in (PINS Ref APP-133/ Application Ref 8.1) which recognises the need to manage traffic.<br>Paragraph 8.9.2 of (PINS Ref APP-064/ Application Ref 6.3.8) identifies the measures and principles incorporated into the COCP.<br>It should be noted that the changes that mitigation measures bring cannot be quantified but are based on professional judgement and would be approved by with Kent County Council, as highway authority.<br>Measures include:<br>• Traffic Routing Strategy;<br>• Traffic Timing Strategy;<br>• Temporary Traffic Signage Strategy;<br>• Traffic Marshals;<br>• Temporary Traffic Management; and<br>• Staff Travel Plan<br><br>C. Following the deployment of the embedded mitigation measures, the level of effect experienced for Driver Delay, Public Transport Delay, Pedestrian Amenity, Pedestrian Severance and Public Rights of Way is considered to be of minor adverse | No further responses were provided by other Interested Parties | The Applicant therefore has no further response to make |

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| | | | significance.<br>The Applicant confirms that all proposed embedded mitigation measures need to be activated, as and when required (to be discussed with the Highway Authority) in order for the effects to be reduced. | | |
| 1.17.3. | The Applicant | Operational Traffic Effects: Offshore Servicing Port<br>Please confirm that the offshore servicing port for the operational stage is not yet known. What if any steps should be taken to ensure that the operational traffic effects of the servicing port are taken into account and managed? | The Applicant can confirm that the offshore servicing port for the operational stage of Thanet Extension is unknown.<br><br>Table 8.11 of Volume 3, Chapter 8: Traffic and Access (PINS Ref APP-064/ Application Ref 6.3.8) of the Environmental Statement identifies the Operation & Maintenance (O&M) vehicle movements expected with each construction activity. Due to the low number of light vehicle and HGV trips associated with O&M, the assessment of operational traffic has been scoped out. | No further responses were provided by other Interested Parties | The Applicant therefore has no further response to make |
| 1.17.4. | Kent County Council in its capacity as Highway Authority, Thanet District Council and Dover District Council | Management of Construction Traffic Effects<br>From your standpoint as a Highway Authority and LPA, are you content that construction traffic effects are adequately managed? | The Applicant notes that this is a question to Kent County Council in its capacity as highway authority. To provide further context, the Applicant summarises the management of construction traffic effects as follows.<br>Section 8.9 of Volume 3, Chapter 8: Traffic and Access (PINS Ref APP-064/ Application Ref 6.3.8) of the Environmental Statement sets out the embedded mitigation measures that are further defined within Section 9 of the Code of Construction Practice (CoCP) (PINS Ref APP-133/ Application Ref 8.1). Measures and principles include, traffic routing strategy, traffic timing strategy, temporary signage, traffic marshals and travel planning measures.<br>The Relevant Representations received from Kent County Council (PINS Ref RR-038), recognises that principles of traffic management and mitigation during construction are acceptable and would need to be agreed through the submission of a Construction Traffic Management Plan.<br><br>Section 9 of the Code of Construction Practice (CoCP) (PINS Ref APP-133/ Application Reference 8.1) identifies best practice measures that would be incorporated and expanded upon (where required) within a Construction Traffic Management Plan (CTMP). The CTMP would be secured through the DCO and subject to consultation and approval with Kent County Council, as Highway Authority. | DDC<br>DDC are satisfied from the submitted documents that construction traffic effects are adequately managed, however DDC would refer to Kent Highways and Transportation as the Highway Authority whose comments are to be put forward through the KCC response.,<br>KCC<br>KCC is satisfied that the impact on the wider highway network is acceptable. The principles of site access points, traffic management and mitigation during construction are acceptable, but the detailed measures for each access point will need to be agreed through submission of the Construction Traffic Management Plan. These detailed measures will need to include; appropriate visibility splays, temporary signage/traffic management measures, suitable parking and turning facilities for all vehicles, and construction details for new access to/from the highway. KCC is satisfied that such appropriate measures can be agreed for each access point. | The Applicant can confirm that it has nothing further to add. |

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| | | | | TDC<br>The precise management of the construction traffic effects have not been detailed at this stage. The Construction Traffic Management plan information provided within the Code of Construction Practice provides the template for the submissions to be provided under requirement 21, required to be approved by Kent County Council prior to each stage of construction. This approach is considered appropriate for managing the impacts of the project over the duration of the project. | |
| 1.17.5. | Kent County Council in its capacity as Highway Authority, Thanet District Council and Dover District Council | Management of Operational Traffic Effects<br>From your standpoint as a Highway Authority and LPA, are you content that any operational traffic effects that might arise within you area of responsibility are adequately managed? | The Applicant notes that this is a question to Kent County Council in its capacity as highway authority. To provide further context, the Applicant summarises the management of operational traffic effects as follows.<br><br>Table 8.11 of Volume 3, Chapter 8: Traffic and Access (PINS Ref APP-064/ Application Ref 6.3.8) of the Environmental Statement identifies the Operation & Maintenance (O&M) vehicle movements expected with each construction activity. It is anticipated that less than one round trip staff movement per week is predicted to be made in relation to the O&M for the onshore cable works and onshore substation. It is anticipated that there could be in the region of 50 round trip light vehicle movements per day and 48 round trip HGV movements per year in relation to the O&M of the Offshore Wind Farm (OWF). Due to the low number of light vehicle and HGV trips associated with O&M, the assessment of operational traffic has been scoped out. | DDC<br>DDC are content that any operational traffic effects that might arise within DDC's area are adequately managed in the submitted documents however would refer the highway safety aspects to the Highway Authority.<br>KCC<br>KCC is satisfied that operational traffic effects are adequately managed.<br>TDC<br>Thanet District Council is content in relation to the impact of the operational traffic effects from the project on the transport network. | The Applicant can confirm that it has nothing further to add. |

## 11 ExQ1.18 Water Environment

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| 1.18.1. | The Applicant | Water Framework Directive Assessment: Water Quality<br>The Environment Agency's relevant representation [RR-043] states that the water quality elements of the Water Framework Directive (WFD) Assessment [APP-076] lacks sufficient justification for findings of WFD compliance and does not provide justification for scoping out water quality from a more detailed impact assessment.<br><br>a) Please provide a comprehensive response to the detailed matters raised by the Environment Agency in this regard, specifically at page 8 and the top of page 9 of its representation.<br>b) Please explain to what extent the Environment Agency's guidance 'Clearing the Waters for All' has been applied.<br>c) Please comment on the appropriateness of a requirement within the Development Consent Order allowing for the temporary cessation of works in the event that bathing water quality deteriorates during the construction period? | A. The Applicant has provided an extensive response to each of the points raised by the Environment Agency's Relevant Representations (responses to EA-11 to EA-16). This has been discussed with the Environment Agency during meetings held in October 2018, forms part of the Statement of Common Ground, and has also been submitted by the Applicant in writing to the Environment Agency and as part of this Deadline 1 submission. In summary, the Applicant scoped in the disturbance of sediments with contaminants above the Cefas Action Level 1 (AL1) to an impact assessment. This assessment is detailed in section 3.10 of Volume 4, Annex 3-1: Water Framework Directive Assessment (PINS Ref APP-076/ Application Ref 6.4.3.1) and concluded that there would be no significant effects and no deterioration on the status of the WFD water body. The Applicant notes that only one sample exceeded AL1 for one contaminant (arsenic) which was comparable to that of the local area and existing baseline levels.<br>B. It is the Applicants position that this guidance has been applied and this was discussed with the Environment Agency in October 2018. It was agreed that whilst the guidance was applied in line with standard practice there is no assessment guidance which identifies a method for the assessing contaminants and/ or bacteria released from sediment against the WFD standards. This response is also presented in the Applicant's response to the Environment Agency's Relevant Representation (response to EA-11).<br>C. As discussed with the Environment Agency in October 2018 and identified in the Applicant's response to the Environment Agency's Relevant Representation (response to EA-15), given the low risk of the proposed works as identified in the assessment (consideration of similar activities and anecdotal evidence) the Applicant considers having a requirement within the DCO for temporary cessation should the water quality at the Bathing Waters (BWs) deteriorate to be disproportionate. Not only is it considered very unlikely that the BW would deteriorate but it would also be very difficult to attribute any deterioration to the works as could be a result of numerous factors within the catchment which can be temporary in nature. It has been noted with the Environment Agency that nearby works to maintain the approach to Ramsgate Harbour (maintenance dredging) have continued without a cessation order being placed on it and without impact on the BWs. This activity, whilst greater in magnitude, than cable installation is considered a reasonable | No further responses were provided by other Interested Parties | The Applicant therefore has no further response to make |

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| | | | proxy when considering the proportionality of any cessation order (or associated condition) on Thanet Extension. | | |
| 1.18.2. | The Applicant | Water Framework Directive Assessment: Baseline Conditions<br>The ES does not appear to set out the anticipated trends in baseline conditions for the Water Framework Directive (WFD) Assessment.<br><br>a) Please provide clarification of the anticipated trends in baseline conditions for this aspect?<br>b) In the event that this will not be possible until further site investigations have taken place, please confirm when this will be undertaken. | A. The baseline/ current status of all of the relevant receptors for the WFD assessment are presented in Tables 3.4 to 3.7 of WFD assessment (PINS Ref APP-076/ Application Ref 6.4.3.1). Furthermore, a detailed water and sediment quality baseline is provided in Volume 2, Chapter 3: Marine Water Quality and Sediment Quality (PINS Ref APP-044/ Application Ref 6.2.3). As outlined in paragraph 3.2.3 of PINS Ref APP-076/ Application Ref 6.4.3.1, the South East River Basin Management Plan encapsulates the area of the proposed development. The anticipated trends, aims, issues and proposed improvements for the WFD water body are presented in the South East RBMP[7]<br>As presented in Table 30 of the South East RBMP the percentage of coastal water bodies, in the South East, to achieve Good chemical (91%) and ecological (36%) status is to remain consistent between 2015 and 2021. Similarly, the number of estuarine water bodies achieving Good chemical (91%) status is to remain consistent and an increase of 4% of estuarine water bodies achieving Good ecological (increasing to 26%) status.<br><br>As identified in the Applicant's response to 1.18.2.a, the baseline has been characterised and the future anticipated trends have been duly considered. The reference to Site Investigations (SI)within the application document(s) relates solely to pre-construction Site Investigations to confirm *inter alia* detailed design and refinement of mitigation measures.<br>B. The Applicant anticipates that the SI works could be complete by end May 2019, assuming that access is obtained by the end of March 2019. It is recognised that this is likely to be too late to introduce the data acquired into the examination. It is, in part, for the reason that the decision to drop landfall Option 2 has been made at Deadline 1. It is proposed that the Site Investigations be carried out at the earliest opportunity (rather than post-consent as is standard practice) but this is dependent upon access being granted by the managing authority of the intertidal/landfall areas which is Kent Wildlife Trust. At the time | No further responses were provided by other Interested Parties | The Applicant therefore has no further response to make |

[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/500473/South_East_RBD_Part_1_river_basin_management_plan.pdf

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| | | | of writing (December 24th 2018) KWT have declined access and a the Applicant is therefore pursuing compulsory access. | | |
| 1.18.3. | The Applicant | Marine Water Column Effects: Sampling Regime<br>At paragraph 4.6 of its relevant representation [RR-049], the Marine Management Organisation has set out inconsistencies within [APP-044], and between it and [APP-082] in relation to the number of stations sampled for contaminants.<br><br>• Could the Applicant please clarify by providing full details of the sampling regime undertaken in this respect? | As identified in the Applicant's response to the Marine Management Organisation's Relevant Representation (response to MMO-106),<br><br>Full details of the intertidal contaminants sampling are presented in Volume 4, Annex 5-1: Export Cable Route Intertidal Report (PINS Ref APP-081/ Application Ref 6.4.5.1). The results of sediment contaminants analysis undertaken in the array and offshore parts of the OECC are presented in Section 5.6 of Volume 4, Annex 5-2: Benthic Characterisation Report (PINS Ref APP-082/ Application Ref 6.4.5.2;).<br><br>The Applicant can clarify that there were some inconsistencies between the reporting of the number of samples undertaken between the identified documents (APP-044 and AP-082). The 21 samples referred to in paragraph 3.7.8 and associated figure (Figure 3.6) (PINS Ref APP-044/ Application Ref 6.2.3) refer to the initial grab samples targeted for to characterise the seabed. As presented in Table 5.1 of PINS Ref APP-073/ Application Ref 6.4.5.2, however only seven of these grabs were subsequently analysed in the laboratory for contaminants, with the remainder being analysed for sediment and/or faunal analysis. | No further responses were provided by other Interested Parties | The Applicant therefore has no further response to make |
| 1.18.4. | The Applicant | Marine Water Column Effects: Assumptions<br>Table 6.7 of the Fish and Shellfish Ecology Chapter of the ES [APP-047] appears to include an inconsistency in the assumptions used for the amount of sediment that would be liquefied, with both 50% and 100% being quoted.<br><br>• Please could the Applicant clarify the amount of sediment transferred to the water column during jetting and ensure that the assessment properly reflects this assumption? | Annex B, of the Applicants' Response to Relevant Representations (Appendix 1 of the Deadline 1 submission) presents an audit of how the design parameters have been transcribed from PINS Ref APP-042/ Application Ref 6.2.1 into the offshore EIA chapters. Annex B, presents and provides a full explanation of the discrepancy in the volumes of disturbed sediment arising from jetting for cable installation. Annex A, of the Applicants' Response to Relevant Representations (Appendix 1) of the Deadline 1 submission, presents the maximum design parameters requested in a tabular format for the amount of sediment to enter suspension for the jetting of both export and inter-array cables. In brief the Applicant can confirm that this was a typographic error but wishes to note that the assessments have been undertaken based on the assumption of 50% of the sediment being ejected from the trench as presented in Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (PINS Ref APP-043/ Application Ref 6.2.2). This is further noted in Table 8 of Annex A of the Applicants' Response to Relevant Representations (Appendix 1) of the Deadline 1 submission. | No further responses were provided by other Interested Parties | The Applicant therefore has no further response to make |
| 1.18.5. | Environment Agency, Thanet District Council, Dover District | Risks to Controlled Waters<br>Cable Landfall Options 1 and 3 would involve running underground cables through the historic landfill site at Pegwell Bay. | Volume 3, Chapter 1: Project Description (Onshore) (PINS Ref APP-057/ Application Ref 6.3.1), Code of Construction Practice (CoCP, PINS Ref APP-133/ Application Ref 8.1), and Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) provide information regarding the design of the landfall (including Options 1 and 3). The proposals are such that they would ensure | Environment Agency's response:<br><br>We are satisfied risks to controlled waters can be managed by further investigations and appropriate | This is noted and welcomed by the Applicant. |

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| | Council and Kent County Council | • Are the councils and the Environment Agency satisfied that the proposed design and mitigation measures would avoid a significant risk to public health in terms of contaminated land and potential impacts on controlled waters? If not, why not? | leachate does not escape during construction and/or operation. The detailed design is not currently available, but the Contaminated Land and Groundwater Plan (CLGP) is secured within the DCO at Requirement 19 (PINS Ref APP-022/ Application Ref 3.1), which provides for this information to be submitted for approval to the relevant planning authority before the commencement of any stage of the connection works. Therefore, the Applicant has adequately and appropriately secured all relevant mitigation and mechanisms which may be required to ensure the control of any contaminants disturbed during the proposed activities. | engineering controls on construction activity proposed. Public health risk is for TDC. | |
| | | | | DDC's response:<br><br>DDC are satisfied from the information submitted that the proposed design and mitigation measures would avoid a significant risk to public health in terms of contaminated land and potential impacts on controlled waters but would support any additional measures that may be identified by the Environment Agency and Thanet District Council. However, it is difficult to comment further until the survey investigation works have been reported. Nevertheless DDC would refer to the Environment Agency and Thanet District Council as the statutory authorities in that location unless the survey results identified a need for DDC's input. | This is noted and welcomed by the Applicant. |
| | | | | KCC's response:<br><br>KCC supports the measures proposed, as they demonstrate an appropriate degree of understanding of the potential engineered difficulties that may be present. At present, KCC is unsure of an agreement that either Thanet District Council, the Environment Agency or KCC might be able to legally provide. This could be in the form of a license | The Applicant welcomes and notes KCC's response on the current understanding on the baseline environment.<br><br>As part of any land agreement The Applicant will provide an indemnity to the relevant landowner and would welcome the opportunity to discuss this point further with KCC, TDC and |

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| | | | | or wayleave across KCC land, suitably caveated to deal with any long-term problems associated with the engineering works.<br><br>The former landfill site is monitored on a regular basis for ground and surface water and landfill gas. Assessments on site performance are continually undertaken and the current Environmental Assessment Report dates from 2016. These reports are routinely prepared on a two to three-year cycle and contain a wealth of baseline data, narrative and conclusion. | The National Trust.<br><br>The Applicant notes the routine monitoring of the site, and can confirm that consideration of these data to inform the baseline environment is presented in Volume 5, Annex 6-1 of the Environmental Statement (PINS Ref APP-112/ Application Ref 6.5.6.1). |
| | | | | TDC's response:<br><br>Design and mitigation yet to be fully defined at this stage. Requirement 19 requires submission of contemporary intrusive site investigation data, which will inform appropriate remediation and mitigation measures along the cable route. | This is noted and agreed by the Applicant. |

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| 1.18.6. | Thanet District Council, Environment Agency, Natural England, Kent Wildlife Trust and Kent County Council | Controlled Waters: Cumulative Effects Assessment<br>Table 6.14 of [APP-062] outlines various potential cumulative impacts that could arise from the projects identified in Table 6.13, in combination with the Proposed Development, and provides an assessment of the potential significance of such impacts. Minor beneficial effects are identified on the impacts to human health and controlled waters, and to changes in watercourse conveyance and floodplain storage.<br><br>• Do Thanet District Council, the Environment Agency, Natural England and Kent Wildlife Trust agree that a "minor beneficial" cumulative effect alongside the Nemo link is a reasonable conclusion as to the residual effect in terms of potential impacts to human health and controlled waters, taking into account ground investigation, remediation and groundwater protection measures as secured within the DCO? If not, why not? | To provide further context, the Applicant summarises the cumulative impact assessment approach as follows.<br>The cumulative assessment assumes that embedded mitigation would be incorporated into the project design and successfully implemented in accordance with the conditions of the DCO, namely Requirements 15, 16, 18, 19 and 26 (PINS Ref APP-022/ Application Ref 3.1). The embedded mitigation measures are outlined in Table 6.12 of Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) and in the Code of Construction Practice (CoCP, PINS Ref APP-133/ Application Ref 8.1).<br>In relation to the cumulative assessment on human health and controlled waters presented in Table 6.14 of Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6), there would be site investigation, remediation and groundwater protection undertaken to avoid the creation of 'pollution pathways', both at the proposed development and cumulatively with other related developments in the area (e.g. Nemo link). For instance, in paragraph 6.10.2 of Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) relating to human health, it is stated that at the proposed development any landfill leachate and contaminated water encountered would be pumped, tankered and disposed of elsewhere, whilst a site investigation would also be undertaken at Richborough Port and Power Station to determine if there was any evidence of contamination, and to identify a process to prevent mobilisation of potential contaminants. As noted in Table 6.14 of Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6), such approaches would be carried out in compliance with the Draft Thanet Local Plan 2031 and statutory processes for managing decontamination of land.<br><br>Following the combined implementation of these ground remediation processes, it is concluded that the overall cumulative effect on human | TDC's response:<br><br>There is the potential for a minor beneficial cumulative effect but this will depend on detailed mitigation yet to be determined and up-to-date intrusive investigation data to be submitted, including groundwater monitoring. | The Applicant welcomes this response from TDC and provides further response below in response to EA queries about the nature of the beneficial effect. |
| | | | | Environment Agency's response:<br><br>We agree that we are not concerned about cumulative residual effects being adverse, whether they have a minor beneficial cumulative effect is perhaps moot, we guess this is based on adding additional cap to part of the landfill where works will be undertaken, so this could be true for that aspect. | The Applicant is encouraged that the Environment Agency shares its view that cumulative residual effects are unlikely to be adverse. With respect to the assessment of *"minor beneficial cumulative effect"* on human health, controlled waters and environmental receptors, the Applicant references its own Deadline 1 response to this question, which includes the statement *"the rationale* [underpinning its assessment] *being that collectively the cumulative scheme would lead to* |

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| | | | health and controlled waters would be 'minor beneficial', and not significant in EIA terms, the rationale being that collectively the cumulative scheme would lead to a reduced level of contamination risk compared to that presently associated with the current land use and the other projects. The assessment is based on the highest receptor sensitivity of 'high' in Table 6.10 of Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) (e.g. human health and controlled waters), and there being in the worst case a 'negligible beneficial' magnitude of impact. Following the matrix set out in Table 6.6 of Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6), this amounts to the overall cumulative significance of effects of 'minor beneficial'.<br><br>The need for ground investigation, remediation and groundwater protection measures are mentioned extensively in Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) and in the CoCP (PINS Ref APP-133/ Application Ref 8.1), which is secured within the DCO at Requirement 16 (PINS Ref APP-022/ Application Ref 3.1). Subject-specific managements plans, including the Onshore Substation Surface Water and Drainage Management Plan (SWDMP) and the Contaminated Land and Groundwater Plan (CLGP), are also secured within the draft DCO, at Requirements 18 and 19 respectively (PINS Ref APP-022/ Application Ref 3.1). The Applicant therefore considers that the DCO as drafted is a suitable means of implementing these measures. | Natural England's response:<br><br>Natural England defer to our colleagues at the Environment Agency to comment upon controlled waters, while human health is outside of Natural England's statutory remit.<br><br>KWT's response:<br><br>We are not in a position to comment on this aspect. KWT would like to defer to the Environment Agency and other interested parties regarding the impacts of the development on human health.<br><br>KCC's response:<br><br>KCC has no comments on this question. | *a reduced level of contamination risk compared to that presently associated with the current land use and the other projects"*. This statement was originally made on the basis that any landfill leachate and contaminated water encountered during the landfall works would be pumped, tankered, and disposed of elsewhere, and in accordance with statutory processes for managing decontamination of land. However, the re-establishment and possible enhancement of the landfill cap in the vicinity of the works as identified by the Environment Agency is another potential mitigation measure that could potentially help deliver the minor beneficial cumulative effect and be secured during the consultation with EA on the Contaminated Land and Groundwater Plan within the Code of Construction Practice (PINS Ref: APP-133/ Application Ref 8.1), as secured in the Development Consent Order (PINS Ref APP-022/ Application Ref 3.1). |

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| 1.18.7. | Kent County Council, Thanet District Council and Environment Agency | Mitigation Measures as a Result of Site Investigation Works<br>Table 6.15 of [APP-062] summarises the post-mitigation residual effects of the proposed development from a ground conditions, flood risk and land use perspective. As no significant effects are identified due to the presence of embedded mitigation, this table concludes that no further mitigation measures are necessary. However, both Table 6.12 and section 6.15 of [APP-062] recognise that site investigation works will be undertaken prior to construction in order to inform the final design of the proposed development, and any associated mitigation works. This suggests a lack of baseline information, particularly in relation to the landfill engineering, leaching potential of contaminants and groundwater levels. Section 6.15 states that the scope and design of the site investigation is to be agreed with Kent County Council, Thanet District Council and the Environment Agency, along with the final design of mitigation measures.<br><br>a) Please can Kent County Council, | Of relevance to the potential leakage of contaminants, Condition 10 of Schedule 12, Part 4 of the draft Order (PINS Ref APP-022/ Application Ref 3.1) requires that a contamination prevention plan is submitted with the suite of pre-construction plans and documentation. That plan "must contain details of necessary measures in order to ensure that construction works undertaken with Work No. 3B will not release any contaminants into the marine environment". This condition has been specifically drafted in order to ensure that any landfill engineering will not result in the release of any contaminants into the marine environment.<br><br>In addition, the requirements contained within Part 3 of Schedule 2 of the draft Order (PINS Ref APP-022/ Application Ref 3.1) include a number of control mechanisms. This includes, at Requirement 15, the production of a Construction Environmental Management Plan (CEMP), which must accord with the Code of Construction Practice (CoCP, PINS Ref APP-133/ Application Ref 8.1) and which must contain details of flood risk management, soil management and relevant health, safety and environmental legislation and compliance. That plan must be approved by the relevant local planning authority. In addition, Requirement 19 requires the production of a Contaminated Land and Groundwater Plan (CLGP), which will be submitted for approval by the relevant planning authority.<br><br>To provide further context, the Applicant summarises the status of the current understanding of baseline conditions and environmental effects, the need for further site investigation and the adequacy of the DCO (PINS Ref APP-022/ Application Ref 3.1) to implement it below.<br><br>The Applicant considers that there is sufficient understanding of baseline conditions, including those pertaining to the historic Cliffsend Landfill, to both identify appropriate forms of mitigation and inform an | Environment Agency's response:<br><br>The extent as to which this development is likely to "impact" the environment, based on any disturbance of the landfill materials is considered manageable based on; what we already know of the landfill materials, the extent of proposed activity and the previous experience of Nemo link, so we are satisfied that the SI and the scale of any proposed mitigation measures will be deliverable without significant problems.<br><br>In relation to the Code of Construction Practice – mitigation measures must be agreed with the Environment Agency prior to works commencing. | The Applicant notes and welcomes this confirmation from the Environment Agency<br><br>The Applicant first references its D1 response to this question, in which it states that it *"… considers that there is sufficient understanding of baseline conditions, including those pertaining to the historic Cliffsend Landfill, to both identify appropriate forms of mitigation and inform an appropriate assessment of 'residual' environmental effects related to the proposed development"*. Then in its D1 response to Q1.18.5, the Applicant states that *"Volume 3, Chapter 1: Project Description (Onshore) (PINS Ref APP-057/ Application Ref 6.3.1), Code of Construction Practice (CoCP, PINS Ref APP-133/ Application Ref 8.1), and Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) provide information regarding the design* |

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| | | Thanet District Council and the Environment Agency confirm that they are satisfied that the site investigation works can be appropriately delivered in the context of the DCO as drafted?<br>b) Section 7 of the Code of Construction Practice explains that "potential mitigation measures" are to be "based on the investigation results": to what extent is this array of measures known at this stage? | appropriate assessment of 'residual' environmental effects related to the proposed development. The Geo-environmental Phase 1 Desk Study (PINS Ref APP-112/ Application Ref 6.5.6.1) in particular presents an extended account of environmental information, including details regarding the landfill kindly provided by the Environment Agency, Thanet District Council, Dover District Council and Kent County Council by way of reports and meetings.<br><br>Nevertheless, the need for further site investigation to inform the final design and associated mitigation measures is recognised and mentioned extensively in Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) and in the CoCP (PINS Ref APP-133/ Application Ref 8.1). These documents, together with subject-specific managements plans noted above such as the CLGP, are referenced in the draft Order (PINS Ref APP-022/ Application Ref 3.1). The Applicant therefore considers that the Order as drafted is a suitable means of implementing the site investigation works.<br><br>Further site investigation would serve to refine, by providing more local detail, the understanding of conditions and the required mitigation associated with a preferred landfall option and other aspects of the proposed development. In this way it would help ensure that potential risks to human health and environmental receptors during construction, operation and decommissioning phases are adequately mitigated.<br><br>Section 7 of the CoCP (PINS Ref APP-133/ Application Ref 8.1) states that "The results of the investigations would be used to inform foundation design, design of temporary works and horizontal drill/microbore/pipe-jacking to ensure the stability of the proposed development". The Applicant considers that whilst the identification of a preferred landfall option and refinements in the required mitigation associated with that option might be a consequence of the further site investigation, the proposed development would remain within the design envelope identified and assessed in Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6). | TDC's response:<br><br>*"Limited information* [regarding mitigation measures] *has been provided within the CoCP. Detailed mitigation measures are required, based upon site specific conditions and results of the further planned intrusive investigation works. Previous historic intrusive investigations at the site, dating to 2000 and earlier, only relate to surface soils testing and do not include groundwater or leachate monitoring. Whether this is sufficient is a matter for the Environment Agency".*<br><br>KCC's response:<br>"a) KCC recognises there is a lack of baseline information for the site investigation works. The site investigation works have not been carried out prior to the DCO and this gives considerable cause for concern, as the definitive engineering method is not yet confirmed (option 1 or 3). As there are two current options for cabling, the mitigation measures and impact of the route are unknown at present.<br><br>b) KCC can confirm that the array of mitigation measures are unknown at this stage. KCC looks forward to working with the applicant and Planning Inspectorate as the project progresses through the Examination process and will welcome the opportunity to | *[including mitigation] of the landfall (including Options 1 and 3)….The proposals are such that they would ensure leachate does not escape* [and potential gas releases are controlled and mitigated] *during construction and/or operation. The detailed design is not currently available, but the Contaminated Land and Groundwater Plan (CLGP) is secured within the DCO at Requirement 19 (PINS Ref APP-022/ Application Ref 3.1), which provides for this information to be submitted for approval to the relevant planning authority before the commencement of any stage of the connection works".* In other words, whilst the Applicant considers that there is already sufficient understanding of baseline conditions to inform appropriate design and mitigation, it is committed to undertaking further site investigation to support the necessary detailed design. With respect to the intrusive investigations at Cliffsend Landfill, the Applicants D1 response to Q1.18.7 goes on to state "*The Geo-environmental Phase 1 Desk Study (PINS Ref APP-112/ Application Ref 6.5.6.1) in particular presents an extended account of environmental information, including details regarding the landfill kindly provided by the Environment Agency, Thanet District Council, Dover District Council and Kent County Council by way of reports and meetings*". For instance, |

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| | | | | comment on matters of detail further, as may be required throughout the Examination." | whilst the 2000 and earlier investigations at the landfill did indeed comprise surface soils testing as noted by TDC, the information provided by KCC in Section 2.6.4 of the Geo-environmental Phase 1 Desk Study presents summary findings of gas, groundwater and surface water monitoring undertaken in 2016. Such environmental monitoring has been performed at the landfill since 2006. Indeed, KCC in its D1 response to ExQ Q1.18.5 states that *"*These [Environmental Assessment] *reports are routinely prepared on a two to three-year cycle and contain a wealth of baseline data, narrative and conclusion"*. Notwithstanding such detail, the Applicant notes that the EA in its D1 response to this question states *"we are satisfied that the SI and the scale of any proposed mitigation measures will be deliverable without significant problems"*. |

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| | | | | | a) With respect to the site investigation works, the Applicant references parts of its D1 response to this question. This states that "…the need for further site investigation to inform the final design and associated mitigation measures is recognised and mentioned extensively in Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) and in the CoCP (PINS Ref APP-133/ Application Ref 8.1). These documents, together with subject-specific managements plans noted above such as the CLGP, are referenced in the draft Order (PINS Ref APP-022/ Application Ref 3.1)…..Further site investigation would serve to refine, by providing more local detail, the understanding of conditions and the required mitigation associated with a preferred landfall option and other aspects of the proposed development. In this way it would help ensure that potential risks to human health and environmental receptors during construction, operation and decommissioning phases are adequately mitigated…[However] The Applicant considers that whilst the identification of a preferred landfall option and refinements in the required mitigation associated with that option might be a consequence of the further site investigation, the proposed development would remain within the design envelope |

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| | | | | | identified and assessed in Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6)."<br><br>b) With respect to the mitigation measures, the Applicant references its D1 response to ExQ Q1.18.5. This states that "Volume 3, Chapter 1: Project Description (Onshore) (PINS Ref APP-057/ Application Ref 6.3.1), Code of Construction Practice (CoCP, PINS Ref APP-133/ Application Ref 8.1), and Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) provide information regarding the design [including relevant mitigation measures] of the landfall (including Options 1 and 3). The proposals are such that they would ensure leachate does not escape [and potential gas releases are controlled and mitigated] during construction and/or operation. The detailed design is not currently available, but the Contaminated Land and Groundwater Plan (CLGP) is secured within the DCO at Requirement 19 (PINS Ref APP-022/ Application Ref 3.1), which provides for this information to be submitted for approval to the relevant planning authority before the commencement of any stage of the connection works. Therefore, the Applicant has adequately and appropriately secured all relevant mitigation and mechanisms which may be required to ensure the control of |

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| | | | | | any contaminants disturbed during the proposed activities". Notwithstanding such detail, the Applicant notes that the EA in its D1 response to this question states "we are satisfied that the SI and the scale of any proposed mitigation measures will be deliverable without significant problems". However, the Applicant is happy to continue working with the KCC in further consideration of this matter.<br><br>With respect to both these sub-questions, the Applicant would further note that in its D1 response to ExQ Q1.18.6, the EA states that "we are satisfied that the SI and the scale of any proposed mitigation measures will be deliverable without significant problems". |

# 12 References


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