

# **Vattenfall Wind Power Ltd**

## **Thanet Extension Offshore Wind Farm**

Appendix 22 to Deadline 6 Submission: Applicant's  
Responses to the Examining Authority's Third  
Written Questions – EXQ3

Relevant Examination Deadline: 6

Submitted by Vattenfall Wind Power Ltd

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Revision A

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## Contents

1	Applicant's responses to the Third Written Questions .....	5
2	ExQ3.0 General and Cross Topic Questions.....	6
3	ExQ3.1 Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA)).....	8
4	ExQ3.2 Construction .....	17
5	ExQ3.3 Compulsory Acquisition, Temporary Possession and other Land or Rights Considerations .....	19
6	ExQ3.4 Draft Development Consent Order .....	24
7	ExQ3.8 Environmental Statement General.....	28
8	ExQ3.9 Fishing and Fisheries.....	30
9	ExQ3.10 Historic Environment.....	33
10	ExQ3.12 Navigation: Maritime and Air .....	39

## **Annexes referred to**

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A	Supporting figures for the Applicant's response to ExA's Further Written Questions (ExQ3)
B	PLA published risk assessment template
C	Annex providing for construction phase NRA for hazards 1 – 4
E	EXAQ 12.3.34 response

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## 1 Applicant's responses to the Third Written Questions

- 1 Following the issue of Third Written Questions by the Examining Authority (ExA) outlined in the Rule 8(3) and Rule 9 Letter of 15<sup>th</sup> April 2019 to the Applicant and other Interested Parties, the Applicant has subsequently responded to each of those questions. Details of 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. As noted within the ExA Questions (ExQs) a number of topic areas do not have specific questions at this time. For ease of reference the following topic areas have questions which have been answered in sections within this document:

ExQ Section	ExQ Topic area
3.0	General and Cross Topic
3.1	Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA))
3.2	Construction
3.3	Compulsory Acquisition, Temporary Possession and other Land or Rights Considerations
3.4	Draft Development Consent Order
3.8	Environmental Statement General
3.9	Fishing and Fisheries
3.10	Historic Environment
3.12	Navigation: Maritime and Air

## 2 ExQ3.0 General and Cross Topic Questions

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.0.1	The Applicant, BritNed Development Ltd, Southern Water, Steve Willey for Mario Campion.	<p><b>Audit of and final responses to Additional Submissions (AS)</b> The Applicant's is asked to review the Additional Submissions in the Examination Library (documents under the reference AS). Particular attention is drawn to AS documents submitted by persons who have joined the Examination after its commencement and particularly to: [AS-012] BritNed Development Ltd; [AS-015] Southern Water; and [AS-016] Steve Willey for Mario Campion.</p> <p>a) Can the Applicant please ensure that its written submissions in response to these submissions are made at Deadline 6.</p> <p>b) Where relevant, can the Applicant please address the following matters:                      i) Whether any discussions have been held with the submitter and</p>	<p>a) The Applicant can confirm with regards responses to BritNed that the submissions made by the Applicant at Deadline 3 (Appendix 3 to Deadline 4: Response to Deadline 3 Submissions by Interested Parties (Non-Shipping)) remain valid. The response confirmed that there is no proposal for a 3km anchor pattern to be employed at this location during construction and as such there is no risk to the BritNed infrastructure. The terms of The Applicants subsea cable Agreement for Lease from the Crown Estate will require it to enter into crossing or proximity agreements with any offshore infrastructure owners where The Applicant is proposing works within their works restriction zone.</p> <p>b) The Applicant can confirm that beyond submissions made by the Applicant at Examination there have been no further discussions between the Applicant and BritNed regarding this matter. The Applicant also notes that no further representations have been made by BritNed but will respond appropriately should further representations be made. as above</p> <p>c) The Applicant will respond in due course.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>if so a summary of the progress that has been made;</p> <p>ii) Whether the submitter is a statutory undertaker and, if so, whether the submission is or is likely to be unwithdrawn</p> <p>iii) Whether the submitter occupies land affected a request for CA or TP powers</p> <p>c) The makers of these Additional Submissions are invited to make their responses to the Applicant's submission at Deadline 7.</p>	

### 3 ExQ3.1 Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA))

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.1.1.	The Applicant	<p><b>Outline Site Integrity Plan</b>                      The dDCO [REP5-019] includes as a certified document an 'Outline Site Integrity Plan' with which a subsequent 'Site Integrity Plan' (SIP) (to be approved by the MMO in consultation with Natural England) must accord. The draft SIP documents submitted into the examination [REP2-033] and [REP4-022] do not refer to themselves as 'Outline' documents although the content would suggest that this is what they are intended to be, as would the application document number assigned in Schedule 13 of [REP5- 019]. Footnote 22 of [PD-018] outlines the approach taken to this matter in respect of the Report on the Implications for European Sites.</p> <p>a) Could the Applicant please confirm that the draft SIP documents</p>	<p>a) The Applicant can confirm that the draft SIP is the same as the Outline SIP referred to.</p> <p>b) The Applicant can confirm that Appendix 58 of the Applicant's Deadline 6 Submission includes a copy of the outline plan, as submitted in Deadline 4, with an amended title as requested by the ExA.</p>



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>referenced above are indeed draft versions of the 'Outline SIP' named in Schedule 13 of the dDCO?</p> <p>b) If so, please could the final version of the Outline SIP be titled as such, to ensure clear read across with the dDCO.</p>	
3.1.2.	Natural England	<p><b>Site Integrity Plan: Security</b>                      In para. 13.1 of [REP5-064], Natural England states that the commitments to mitigation methods described in section 4 of the SIP "should be secured in the DCO/DML to ensure they are enforceable". This is presented as a condition of Natural England's agreement with the Applicant's HRA conclusions in relation to the harbour porpoise feature of the Southern North Sea SAC.</p> <p>a) Could Natural England please confirm whether or not it considers the dDCO/DMLs, as drafted [REP5-019], provide adequate security for the mitigation commitments of the</p>	<p>a) It is the Applicant's opinion that the mitigation methods within the Outline SIP (PINS Ref REP4-022) are adequately secured through the Outline plan itself, which is secured in the DCO by way of both requirement and condition, and also the Schedule of Mitigation which accompanies this Deadline 6 submission. The Applicant has to comply with its content as contained within the Outline SIP (and then the detailed document as approved). As such it is considered that this combination adequately secures the potential suite of mitigation measures which may or may not be required, without the need to provide wording in the DCO that seeks to capture the suite of measures that <i>may</i> be required. Imposing prescribed measures on the face of the DCO, which may not be required, is not robust or necessary when the document itself documents such measures, and how they would be undertaken, in detail.</p> <p>It is the Applicant's view therefore that such and/or wording is not appropriate legal drafting, and is more appropriately secured through the plan itself The Applicant can confirm that the latest Statement of Common Ground (SoCG) which Natural England (Appendix 15 of the</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>SIP?</p> <p>b) If not, please outline fully the changes sought to the dDCO/DMLs.</p>	<p>Applicant's Deadline 6) confirms that there is a disagreement on this matter between the parties.</p> <p>b) The Applicant's position on this matter (and the associated changes to the wording in the dDCO) is presented in Appendix 44 of the Applicant's Deadline 6 Submission.</p>
3.1.3.	The Applicant	<p><b>Site Integrity Plan: Pre-Construction Approval</b></p> <p>The MMO has highlighted [REP5-062] that the current drafting of the DMLs [REP5-019] provides for the approval of the SIP "prior to the commencement of the operation of the licensed activities" which would appear to be an error. The ExA understands that the appropriate time for the approval is prior to commencement of construction.</p> <p>Could the Applicant please review DML conditions 13(1)(k)(Schedule 11) and 11(1)(l)(Schedule 12) and reword to reflect the need for the SIP to be approved prior to commencement of the licensed activities.</p>	<p>The Applicant has made clear that the SIP will be produced in accordance with paragraph 8 of the outline SIP and this is reflected in the dDCO submitted for Deadline 6. The Applicant can confirm that the first relevant activities are prior to the construction of the project (and pre-construction surveys) and confirms that this is provided within the SIP and updated DCO submitted with this Deadline 6 submission.</p>
3.1.4.	The Applicant	<b>Goodwin Sands Proposed Marine</b>	a) Appendix 15 of the Applicant's Deadline 6 Submission provides the

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
	and Natural England	<p><b>Conservation Zone (pMCZ)</b>                      The SoCG with Natural England [REP5-076] identifies a number of areas that are not yet agreed in relation to the assessment of impacts on the Goodwin Sands pMCZ. In addition, section 4 of [REP5-064] sets out some specific requests for inclusion in the MCZ assessment. The notes within the SoCG indicate that actions agreed at a meeting on 2 May 19 may be capable of bringing the Applicant and Natural England to agreement, but full details of those actions have not been provided.</p> <p>a) At Deadline 6, could the parties please provide an updated position on agreement with regards to the pMCZ.</p> <p>b) If disagreement remains on any matters pertaining to the protection of the pMCZ at that stage, please provide a statement, agreed by both parties, setting out the remaining areas of disagreement and the extent</p>	<p>final SoCG between the Applicant and Natural England. This document confirms that the parties have reached agreement on the assessment, mitigation, monitoring and conclusions for the Goodwin Sands pMCZ, subject to receipt of a signposting clarification note. This matter therefore remains under discussion, but it is anticipated that there is no impediment to agreement being reached by Deadline 7.</p> <p>b) The Applicant notes that there is a disagreement between the Applicant and Natural England for the adequacy of the baseline data used in the assessment of Goodwin Sands pMCZ due to the timing of the proposed designation becoming material. This disagreement is clearly outlined in the SoCG and is addressed through the Applicant's commitment to undertake monitoring within the Goodwin Sands MCZ should certain methods of construction be required, and if the MCZ is formally designated.</p> <p>c) This is noted by the Applicant and will be provided to the ExA in due course.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>to which resolution is being sought within the timescales of the examination.</p> <p>c) A concluding statement should be provided at Deadline 7.</p>	
3.1.5.	Marine Management Organisation and the Applicant	<p><b>Potential Construction Noise Effects on Fish</b></p> <p>At Deadline 5, the Applicant provided additional material [REP5-003] to clarify its approach to assessing the construction noise effects on fish species. Table 8 of [REP5-049] indicates that considerable disagreement remains in respect of fish impacts and section 2 of the Marine Management Organisation's subsequent [REP5A-003] sets out a number of comments in relation to the potential construction noise effects on herring and sole spawning grounds.</p> <p>The ExA is mindful that these are weighty matters and that the examination is now in its final stages. With a view to moving matters</p>	<p>a) The Applicant can confirm that continued dialogue has taken place between the MMO and the Applicant with a view to resolving the areas of disagreement. At this stage (Deadline 6) the Applicant has provided clarifications to the MMO and the MMO have provided clarifications through discussion with the MMO's scientific advisers. The result of the clarifications is such that at Deadline 6 there are no agreed mutually acceptable solutions.</p> <p>The Applicant does not agree that a seasonal restriction is necessary for the Thames herring stock (Feb-Apr) due to an absence of effect-receptor pathway, evidenced by the Applicant's modelling undertaken to the MMO's specifications.</p> <p>The Applicant does not agree that a seasonal restriction is necessary for the Downs stock (Nov-Jan) as the interaction for the worst case piling event is &lt;0.05% of spawning potential, with a combined effect being considered to be &lt;1% when considered in the context of the worst case location being 0.049% and the location most distant from the historic Downs stock being 0.004%.</p> <p>It is also important to note that the Applicant's utilisation of 10 years of</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>forward as far as possible within the remaining time available, the ExA requests the following steps be taken:</p> <p>a) The MMO and the Applicant should work together to address each of the matters raised in section 2 of [REP5A-003] with a focus on identifying mutually acceptable solutions where at all possible.</p> <p>b) At Deadline 6, the Applicant should submit an updated version of Table 8 of the SoCG reflecting the latest position of discussions.</p> <p>c) Where any amendments to the dDCO/DMLs are proposed further to (a) and (b), the Applicant should provide full drafting.</p> <p>d) For any areas in which disagreement remains, both parties should provide an evidence-based justification for their position.</p>	<p>IHLS data, using a methodology endorsed by both Cefas and MMO, confirms that the historic downs spawning area has not had high densities of larvae during the 10 year period. the Applicant has provided further clarification at Annex A to Appendix 27</p> <p>b) The SoCG between the Applicant and the MMO is provided at Appendix 11 to this Deadline 6 submission.</p> <p>c) The Applicant does not propose to make any amendments to the dDCO/DMLs as a result of item a and b.</p> <p>d) The Applicant has provided evidence based justifications at Deadline 4C, specifically at Appendix 7 and Annex A to Appendix 7. Further to this the Applicant has provided a point by point response to the MMO's D5a submission at Annex A to Appendix 27 of this Deadline 6 submission.</p> <p>In brief, it is the Applicant's position that the baseline description of the receiving environment has used methods endorsed by MMO, Cefas and a range of other technical advisers. The characterisation identifies that the spawning grounds identified in Coull et al 1998 and Ellis et al 2012 have changed, with the discrete area of Downs stock to the east of the proposed project having limited use over a 10 year period. This is to be expected when considered in the context of the Ellis et al study utilising a single year of IHLS, compared with the 10 put forward by the Applicant.</p> <p>The Applicant has undertaken a full suite of underwater noise modelling, using metrics agreed as part of the EIA Evidence Plan, and subsequent</p>

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		<p>e) The MMO should provide a copy of the Marine Licence condition(s) that imposed a temporal piling restriction for the construction of the Thanet Offshore Wind Farm as referred to in para. 2.2.6 of [REP5A-003].</p> <p>f) If it is the Applicant's position that such a restriction would not be appropriate in this case, it should set out the reasons for this view.</p> <p>g) If necessary, the parties may comment on one another's positions at Deadline 7.</p>	<p>requests made by Cefas to use additional metrics that assume fish may not flee a noise stimulus. These show there to be no interaction with the Thames spawning ground, and limited interaction with the historic Downs spawning ground. It is also worthy of note that, whilst not directly applicable with regards herring as it is not a species for which European designated sites exist, Natural England have confirmed the modelling and assessment to be fit for purpose for HRA.</p> <p>It is of note that MMO also endorsed this view by confirming that in relation to the HRA "MMO agrees that the impacts of temporary habitat loss and disturbance, temporary increases in suspended sediment concentrations, deposition of sediments and smothering and increase in underwater noise, the LSE for diadromous (such as Allis shad, a member of the herring family) fish is negligible".</p> <p>The Applicant has used assessment methodologies (spawning potential) that have been previously accepted by the MMO for other OWF projects, including Walney Extension and Gwynt Y Mor, both of which had seasonal restrictions which were refined as a result of the final project design being available, and the spawning potential assessment</p>

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			<p>methodology being utilised. The Applicant has identified with MMO that according to the MMO review of Post-Consent Monitoring<sup>1</sup>, the seasonal restriction at the existing Thanet was removed (page 87 of the above reference). It is the Applicant's position therefore that on the basis of a robust and contemporary baseline, combined with a suite of agreed underwater noise modelling metrics, and utilising methods of assessment that have been adopted previously and received positively by the MMO the conclusion of no significant effect, and therefore no requirement for a seasonal restriction, is robust.</p> <p>e) the Applicant will provide comment on the Thanet OWF marine licence when it is received. As noted above, the Applicant has noted that the MMO have previously recorded the seasonal restriction as having been removed from the licence.</p> <p>f) Appendix 27 provides a point by point response to the MMO's position and has provided a summary in response to point d of this question. It is the Applicant's evidenced view that there is no interaction between the proposed project and the Thames spawning stock. It is the Applicant's position that the interaction with the Downs stock remains uncertain</p>

<sup>1</sup> Review of environmental data associated with post-consent monitoring of licence conditions of offshore wind farms (MMO 1031); [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/317787/1031.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/317787/1031.pdf)

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>insofar as there is no apparent contemporary evidence to support the spawning grounds remain in use. Notwithstanding this the Applicant has undertaken a highly precautionary assessment that concludes that there is no significant effect on the historic spawning ground as a result of the proposed project. In light of this any mitigation such as a seasonal restriction would be disproportionate and not supported in policy terms. Whilst EN-3 refers only to 24 hour working as a mitigation measure to reduce impacts on fish in relation to underwater noise (which the Applicant has requested), the test for marine mammals (as a receptor sensitive to underwater noise) is (at paragraph 2.6.93) "Where assessment shows that noise from offshore piling may reach noise levels likely to lead to an offence [to marine mammals] as described in 2.6.91 above [in relation to European Protected Species, the applicant should look at possible alternatives or appropriate mitigation [...]" The Applicant considers that the impact predicted on herring is such that there would not be a significant effect on the species and as such, using 2.6.93 as a reference for comparison with a receptor group that is sensitive to underwater noise, there is no need to consider alternatives or mitigation.</p> <p>g) The Applicant will respond at Deadline 7 to further representations made by MMO where appropriate.</p>



## 4 ExQ3.2 Construction

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.2.1.	The Applicant	<p><b>Unexploded ordnance (UXO) assumptions for Spoil Ground/ Mine Disposal Area overlapping Order limits</b></p> <p>The Applicant's [REP5-002] para 2.5.2 answers ExQ2.1.4 as follows. "This assessment considered a realistic maximum design scenario for UXO associated with the application, inclusive of the risks associated with the mine disposal site. The assessment was undertaken on the basis of an understanding of the area and previous experiences for the existing Thanet OWF, section 42 advice from the MMO, and advice provided by UXO specialists all of which lead to the definition of the likely maximum design scenario... defined in Application ref 6.2.1." [APP-042] Project Description para 1.4.115 states the assumption of a maximum UXO charge weight of 130kg has been used for the purposes of EIA and that if any UXO</p>	<p>a) The Applicant can confirm that there are no records of UXO clearance being required for the existing Thanet OWF.</p> <p>b) the Applicant can confirm that no consultation with the MoD, with regards the spoil ground specifically, has been undertaken. Consultation undertaken with the MoD on the PEIR and on other specific project matters, such as military remains, have not identified any notable concerns.</p> <p>c) The Applicant notes that as requested by parties during the EIA Evidence Plan and scoping the Applicant has assessed impacts up to reasonably foreseeable charge weight based on local experience. In the event that larger charges were identified the application for a marine licence would need to provide for this, but the types of mitigation would remain the same. Irrespective of charge weight, UXO detonation is not included in the dDCO and will require a further marine licence. Therefore, the approach to licencing would be there same whether above or below 130kg (although as stated 130kg is considered a reasonable worst case).</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>larger than this is discovered “these will be assessed through a separate Marine Licence”.</p> <p>Would the Applicant provide:</p> <p>a) more detail of the “previous experiences for the existing Thanet OWF, section 42 advice from the MMO, and advice provided by UXO specialists” in regard to this mine disposal area; and</p> <p>b) whether any consultation with MoD has taken place specifically in regard to this Spoil Ground/Mine Disposal Area and if so what answer was obtained; and</p> <p>c) an explanation of how the eventuality of discovery of UXO larger than 130kg charge weight is covered by the dDCO or if it is not, a view on whether a process should be secured.</p>	

## 5 ExQ3.3 Compulsory Acquisition, Temporary Possession and other Land or Rights Considerations

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.3.1.	The Applicant	<p><b>Cable route options in Richborough Energy Park: permanent acquisition of new rights</b></p> <p>The ExA is conscious of the underlying reasons why three route options for cables through the Richborough Energy Park to the proposed grid connection location [REP2-011] (Onshore Land Plan, Rev D, Sheet 2 – green hatched notation) were applied for and is also conscious that this proposal is not objected to. However, such a position typically does not persist through to a decision being made on an application.</p> <p>Where a DCO applicant has provided for optionality for the CA of land or rights, either:</p> <ul style="list-style-type: none"> <li>the need for optionality is addressed before the SoS decision on the Order, because a final route preference emerges during Examination (enabling other less</li> </ul>	<p>The Applicant has included at Appendix 35 of its Deadline 6 submission a paper providing evidence for the requirement to retain 3 routing options through Richborough Energy Park.</p> <p>The Applicant has submitted a revised dDCO with it's Deadline 6 which ensures that land which is not required for the development to which the development consent relates' because it relates to an option that is no longer required once another option has become preferred and can be exercised will not be not be subject to enduring CA powers.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>preferred options to fall away); or</p> <ul style="list-style-type: none"> <li>• provisions are drafted for inclusion in the dDCO, ensuring that as soon as a final route preference becomes clear, CA powers over the land and route(s) that are no longer required will automatically fall away at that time.</li> </ul> <p>(For an example of the latter in a made Order, see The Wrexham Gas Fired Generating Station Order 2017 (SI 2017 No. 766), Schedule 9, Part 7, paragraph 76 (Compulsory acquisition and temporary use)).</p> <p>The underlying principle is that land that is not 'required for the development to which the development consent relates' because it relates to an option that is no longer required once another option has become preferred and can be exercised, should not be subject to enduring CA powers. This emerges from PA2008 s122 and DCLG CA Guidance paragraph 11<sup>1</sup>,</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>which includes advice that the 'Secretary of State will need to be satisfied that the land to be acquired is no more than is reasonably required for the purposes of the development'. Once an option has become concrete to the point that it is both preferred and deliverable, the land subject to other options in principle becomes 'more than is reasonably required for the purposes of the development' and so arguably should be released from the burden of CA.</p> <p>The Applicant is asked to provide an update at Deadline 6 on the status of the optional cable corridors at that time. In that update the Applicant should either:</p> <p>a) Make clear that over the Examination period, one of the three options has become preferred and deliverable, in which case an amended Onshore Land Plan and BoR containing only the preferred option should be submitted; or, if that is not</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>the case and two or more options are still deemed to be necessary,</p> <p>b) Provide an update on the progress of discussions about cable routing within the Richborough Energy Park site, making clear why it is necessary to sustain more than one option beyond the closure of the Examination and identifying which options need to be sustained.</p> <p>If (b) is the case, the Applicant is requested to submit a draft provision for inclusion in the dDCO (and also to include this in its consolidated dDCO submitted at Deadline 6) that would have the effect of removing the burden of CA provisions from options that are no longer required, as soon as one option has become preferred and deliverable.</p> <p>The Applicant should note that a response to part (b) of this question may usefully be supported by the submission of an updated Onshore</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		Land Plan on which separate notations are used to distinguish between the options to be sustained, in turn supporting reference to those options in a dDCO provision.	

## 6 ExQ3.4 Draft Development Consent Order

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.4.1.	The Applicant	<p><b>Amended provisions</b>                      If it is the intention to make further amendments to the dDCO arising from responses to these or other outstanding questions, these amendments should be made in the form of an 'Applicant's preferred' dDCO submitted at Deadline 6, which should contain all amendments necessary to address these questions, the <a href="#">ExA's DCO Commentary</a> [PD-017] and any other changes that have emerged since Deadline 5. This version of the dDCO should be provided in consolidated and tracked changes form and be accompanied by a table of changes and any necessary amendments to the EM.</p>	<p>The Applicant has submitted at Deadline 6 an updated dDCO, along with an EM and changes log. A comparative version of these documents has also been produced.</p>
3.4.2.	The Applicant	<p><b>Certified documents</b>                      If it is the intention to make further amendments to the record of certified documents in Schedule 13 arising from responses to these or other outstanding questions, then</p>	<p>The Applicant has amended Schedule 13 and updated this in the Applicant's preferred dDCO submitted at Deadline 6. The Applicant will review at each deadline for subsequent changes.</p>



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>these amendments should be made in the 'Applicant's preferred' dDCO at Deadline 6 in response to ExQ3.4.1. The ExA requests that the content of Schedule 13 should be reviewed and if necessary be updated at each subsequent deadline (7 and 8), if there are any subsequent changes. Any document versions that have not yet been provided to the ExA must be provided.</p>	
3.4.3.	The Applicant, Historic England and MMO	<p><b>Changes to drafting regarding archaeological investigation</b>                      Would Historic England please confirm if the dDCO [REP5-019] submitted at Deadline 5 has now been amended to their satisfaction as follows:</p> <p>a) Changes to Schedule 11 and Schedule 12 (DMLs) to 'enable the interrelationships between onshore and offshore [Written Schemes of Investigation] WSIs to work as clearly and effectively as possible where the export cable meets landfall, whereby a strategic overlap is captured...'</p>	<p>The Applicant notes this question is directed at Historic England and will respond for Deadline 7.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>b) clarification regarding inclusion in the DCO of a condition on dredge disposal (Schedule 11 condition 22, Schedule 12 condition 24) and the relationship between these and the Offshore WSI.</p> <p>c) definition of 'commence' in relation to works seaward of MHWS to include both pre-construction monitoring surveys and site preparation works.</p> <p>If Historic England request any changes to drafting at Deadline 6, the Applicant is requested to engage with the MMO on the appropriateness of this drafting and the Applicant and MMO are requested to make submissions on this point at Deadline 7.</p> <p>In responding to c) above, attention is also drawn to the <a href="#">ExA's dDCO Commentary</a> [PD-017], Comment 5 at Deadline 6 which raises broader</p>	

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		<p>questions about the definition of 'commence'. If c) cannot be answered positively, Historic England are requested to provide their preferred approach in response to the dDCO commentary.</p>	

## 7 ExQ3.8 Environmental Statement General

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.8.1.	The Applicant	<p><b>Certified Documents:</b> the Certified Environmental Statement ExQ2.4.6 asked the Applicant to take steps to define all of the documents which it considers should form part of the Environmental Statement to be certified, for reasons set out at that time. The Applicant responded to this point on page 43 of [REP5-002]. Whilst the changes to Schedule 13 and Art 35 are noted, a comprehensive list of documents now forming the ES has not been provided. This task has been made all the more important by the material change process for the introduction of the Structures Exclusion Zone (SEZ).</p> <p>a) Could the Applicant please revisit the ExA's previous question and provide a full response at Deadline 6, taking</p>	<p>a) The Applicant can confirm that the following documents are intended to form part of the certified Environmental Statement:</p> <ul style="list-style-type: none"> <li>• Appendix 36 to Deadline 3 Submission: Onshore Historic Environment Addendum (PINS Ref REP3-029);</li> <li>• Appendix 28 to Deadline 5 Submission: Navigation Risk Assessment Addendum Rev B (PINS Ref REP5-039);</li> <li>• Appendix 3 to Deadline 4b Submission: An addendum to the Environmental Statement (ES) assessing the SEZ proposal (PINS Ref REP4B-010);</li> <li>• Annex A to Appendix 3 to Deadline 4b Submission: Implications of the SEZ – Seascape, Landscape and Visual Effects (PINS Ref REP4B-011);</li> <li>• Annex A1 to Appendix 3 to Deadline 4b Submission: Implications of the SEZ – Seascape, Landscape and Visual Effects -Wirelines (PINS Ref REP4B-012);</li> <li>• Annex B to, Appendix 3 to Deadline 4b Submission: Structure Exclusion Zone, Onshore Heritage (PINS Ref REP4B-013);</li> <li>• Annex C to Appendix 3 to Deadline 4b Submission: Assessment of the implications of the implementation of the Structures Exclusion Zone in relation to commercial fisheries (PINS Ref REP4B-014); and</li> <li>• Appendix 14 to Deadline 2 Submission: Review of the Environment Statement following the removal of the Option 2 landfall design (PINS Ref REP2-036).</li> </ul> <p>b) The Applicant can confirm that Schedule 13 has been updated in line with the Applicant's response to part a of this question.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>full account of documents up to the time of drafting, including the SEZ material change proposal. At Deadline 6, the ExA requires absolute clarity as to which examination documents are intended to form part of the certified Environmental Statement.</p> <p>b) If it is the intention to make further amendments to Schedule 13, as would appear to be implied in the Applicant's response, then please could these amendments also be made at Deadline 6.</p> <p>c) The ExA requests that the position should be updated at each subsequent deadline (7 and 8) if there are any subsequent changes.</p>	<p>c) The Applicant will ensure that at each subsequent Deadline Schedule 13 will be appropriately updated.</p>

## 8 ExQ3.9 Fishing and Fisheries

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.9.1.	The Applicant	<p><b>Fisheries Liaison and Co-existence Plan (FLCP): extent of consultation</b></p> <p>With reference to item 9.1 of the Schedule of Mitigation [REP5-007] would the Applicant please confirm if the FLCP (whether in the version of June 2018 noted as a draft [APP-143] or the more recent version submitted at Deadline 3 [REP3-060]) has been disseminated for consultation with international fishing and fisheries interests?</p> <p>a) If the FLCP has been consulted with international fishing and fisheries interests, please confirm the names and countries of the bodies that have been consulted.</p> <p>b) If such a consultation has occurred, the ExA would wish to be provided with a copy of it.</p>	<p>a &amp; b) The FLCP has been specifically drafted to address concerns of the local fishing fleet and has been agreed with the TFA. Whilst many of the commitments in this plan are applicable for all fisheries interests, it is clear from the Fisheries Technical Report (ref) that the predominant use of the area around the wind farm is for the local fleet. Significant adverse effects on international fishing are not predicted and the Applicant has not received any consultation response to contrary. As such it is considered appropriate to focus the FLCP on principally addressing the concerns of the local fishing interests. To be clear however, the measures in the FLCP are embedded and seek to ensure that impacts on fisheries are acceptable.</p>

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3.9.2.	The Applicant	<p><b>FLCP: definition and certified document</b></p> <p>The dDCO at paragraph 1 of Schedules 11 and 12 respectively (the DMLs) contain different definitions of the FLCP. Schedule 11 defines what the ExA takes to be the FLCP as 'the document certified as the Fisheries Coexistence Plan strategy by the Secretary of State for the purposes of this Order', whereas Schedule 12 defines it as 'the document certified as the fisheries liaison and co-existence plan by the Secretary of State for the purposes of this Order'. Neither definition is consistent one with the other and neither are consistent with Schedule 13, which lists the 'Fishing LCP' as a document to be certified.</p> <p>The Schedule of Mitigation refers to the 'Fisheries Coexistence Plan' [REP5- 007] at item 9.1.</p>	<p>a) The Applicant can confirm that the documents are one and the same. The Applicant can confirm that the Schedule of Mitigation has been updated to accurately reflect the document title. The dDCO has also been amended in order to ensure that there are consistent references throughout.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>a) Are these references to documents one and the same? Are they references to the FLCP as submitted at Deadline 3 [REP3-060]? If it is, can Schedule 11 and 12 paragraph 1 definitions and Schedule 13 all be updated with consistent definitions and references for Deadline 6 (see ExQ3.4.2).</p> <p>b) If these are references to different documents, can those documents be submitted at Deadline 6 with an explanation of their difference, and references to them included in Schedule 13 to the dDCO.</p>	



## 9 ExQ3.10 Historic Environment

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.10.1.	The Applicant	<p><b>Responsibilities under Offshore and Onshore Written Schemes of Investigation (WSIs) for Military Remains</b>                      The Applicant's [REP5-002] D5 response to ExQ2.10.3 is incomplete regarding Offshore draft WSI obligations under the Protection of Military Remains Act 1986.</p> <p>Would the Applicant please confirm:</p> <p>a) if consultations will have taken place before Deadline 6 with the relevant executive agency of the Ministry of Defence (MoD) in regard to both offshore and onshore elements of the project; and if so</p> <p>b) whether specific obligations under the Act will be added to the Onshore and Offshore WSI's.</p>	<p>a) As per previous experience on Offshore Renewable projects, and as the MoD did not respond to previous consultation, they have not been contacted regarding the WSI. The MoD have also, in responding to the Deadline 3 Action Points, confirmed that the MOD has reviewed Vattenfall's approach to implementing the requirements of the 1986 legislation and is content with the methodology outlined.</p> <p>The Applicant notes that if there is any potential for impact to a military vessel or aircraft, the Retained Archaeologist will inform and consult with the MoD, as per paragraph 9.10.4 of the WSI, and a Heritage Method Statement will be produced to detail methodologies for investigation, survey and further work (if required). This aligns further with the MoD's Deadline 3 submission which confirmed that it is recommended that any further findings of military vessels, regardless of age, are referred to the MOD.</p> <p>b) No specific obligations will be added to the Offshore WSI, as it is already covered in paragraph 9.10.4 of the WSI. There is no need – and neither is there any requirement - to include obligations for the MoD in the onshore WSI, particularly in light of the comments above.</p>
3.10.2.	The Applicant	<p><b>Special attention to certain Archaeological Exclusion Zones (AEZs) in the cable export</b></p>	<p>As per paragraph 4.2.3 of the WSI, the Developer and/or their representative will consult the Retained Archaeologist during the</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p><b>corridor</b>                      Would the Applicant confirm how, in developing and applying the Offshore WSI, they propose specifically to address issues raised in relation to construction in the vicinity of AEZs in [REP5-059] Historic England's responses to ExQ2 at Deadline 5, in the following locations:</p> <p>a) Features 70210 (A3 recorded wreck not yet identified within geophysical data); and 70220 (A1 debris) immediately east of North Foreland; that may give rise to the need for 'more focused investigations, to understand their extent and significance'.</p> <p>b) Feature 70366 (A1 wreck possibly SS Harcaro) centrally located in the export cable corridor off Ramsgate; and 70346 (A1 debris/wreck of submarine and/or B-24 bomber) where after further survey work has been assessed, 'the AEZ may need to be modified, or the site investigated by ROV or diver'...'as directed by the offshore WSI where necessary'.</p>	<p>planning stages for any further survey work. The Retained Archaeologist will advise on which elements warrant archaeological investigation.</p> <p>Should the features highlighted by Historic England be at risk of impact, the Retained Archaeologist will produce Heritage Method Statements for further investigation and survey as required, as per Section 8 of the WSI.</p> <p>Method Statements will be submitted to Historic England for approval one month before the planned commencement of any survey, as per paragraph 9.1.3 of the WSI.</p> <p>a. Historic England noted (letter 29/04/2019) that should the developer look to construct close to these anomalies, they may need to be included within more focussed investigations, to understand their extent and significance. Therefore, should these features be at risk of impact, the Retained Archaeologist will either address them in a bespoke archaeological Method Statement(s) or ensure that they are specifically included and detailed within a Method Statement for investigative works whose primary focus is not necessarily archaeological, such as UXO, ROV or diver survey. As 70210 is a recorded wreck not yet identified within geophysical survey data, further assessment may confirm that no material is present at this location, however there may be potential for material to be present. 70220 is included within the AEZ for 70219, wreckage of the steamship <i>Cathay</i>, as it may comprise outlying debris.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>b. Should these features be at risk of impact, the Retained Archaeologist will produce either a bespoke archaeological Method Statement(s) or ensure that they are specifically included and detailed within a Method Statement for investigative works whose primary focus is not necessarily archaeological, such as UXO, ROV or diver survey. As feature 70346 has the potential to comprise military remains, both the MoD and Historic England would be consulted in the development of the Method Statement.</p> <p>Should it be possible to microsite the cable route sufficiently around the AEZs, so that no impact is anticipated, then no further work would be required.</p>
3.10.3.	Historic England and Kent County Council	<p><b>Draft Onshore WSI</b>                      Would Historic England and Kent County Council please confirm if they are satisfied with the [REP5-006] revised Draft Onshore WSI submitted at Deadline 5, in particular:</p> <p>a) the approach to investigations in general as now described in para 1.1.3 onwards and detailed in Section 6, dividing strategy and investigative works into phases and/or zones;</p>	<p>Historic England have confirmed that the Draft Onshore WSI is acceptable, subject to the inclusion of one minor text addition. The purpose of this addition is to secure the link/overlap of the two WSIs (onshore and offshore). HE suggested the following text be included:</p> <p>“That any archaeologists working in the intertidal area at low tide should have relevant a qualifications and experience in working in such environments, and the deposits and assemblages they may contain”.</p>

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		<p>b) in relation to (a), whether Historic England's concerns regarding the need for 'a more detailed and targeted approach' are now resolved;</p> <p>c) the evaluation of assessment to inform the final design;</p> <p>d) clarification of responsibilities previously contradicted in the earlier draft paras 3.5.2 and 3.5.3;</p> <p>e) the WSI to include the scope of works in the intertidal zone and how the method of mitigating impacts will be selected;</p> <p>f) the objectives stated in 2.2.1 as now expanded to include specific mention of the Boarded Groins and WWII defences;</p> <p>g) the introduction of pre-construction investigation as recommended by Historic England; and</p> <p>h) clarification on outputs from the 'watching brief' as distinct from outputs</p>	<p>This has been adopted as written and inserted as section 5.2.3 of the Draft Onshore WSI (this amended version is submitted as Appendix 56 of the Applicant's Deadline 6 Submission.</p> <p>Additional comments were received from KCC on 22<sup>nd</sup> May and these have also been incorporated into the revised Outline Onshore WSI. KCC have signalled their acceptance of the Outline WSI in the SoCG.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		from specific archaeological works.	
3.10.4.	The Applicant	<p><b>Draft Onshore WSI: Previously undisturbed land parcels</b>                      The Draft Onshore WSI [REP5-006] submitted at D5 para 4.4.11 refers to previously undisturbed areas and now draws attention to the parcels of land within the red line boundary considered to be previously undisturbed or at least less disturbed areas. It refers to Parcels 3, 4, 5, 8, 13 and 14.</p> <p>Would the Applicant please check and clarify these references to undisturbed areas, because from [APP-063] Figure 7.1 "Heritage Assets Potentially Subject to Direct Effects": 3 is the grid connection site, 4 the Ramac land, 5 is outside the red line boundary, 8 is partially in Stonelees, 13 is the golf course and appears to be outside the red line boundary and 14 is Pegwell Bay Country Park. Whether these are indeed the areas of land intended to be described as undisturbed, or alternatively the text is meant to refer to Works Areas or other areas, greater definition and precision is needed and should be</p>	<p>For clarification, the parcels referred to here are the Assessment Parcels as identified in the Desk-Based Assessment and used to inform the PEIR and EIA A supplementary figure has been produced to clarify which assessment parcels are affected (see Annex E). That is, which assessment parcels fall within the redline Development Boundary in whole or in part. and within which some disturbance to existing ground levels or to deposits at depth may be expected, and as a consequence where archaeological remains (if present) may be disturbed by construction related activities. The affected assessment parcels are 3, 4, 7, 8, 9, 14 and 15 (where these fall within the redline Development Boundary).</p> <p>The extent of any disturbance within these parcels, where they fall within the redline Development boundary, will be defined by the final construction arrangements. The mechanism by which archaeological potential can be established and appropriate mitigation identified and agreed (and implemented) is set out in the Draft Outline Onshore WSI, and will be further detailed in subsequent detailed WSIs which are required through this process.</p>

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		indicated on an updated version of the Heritage Assets set of plans.	

## 10 ExQ3.12 Navigation: Maritime and Air

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.12.	Not Applicable	<p><b>Navigation: Maritime and Air</b></p> <p>The Applicant has proposed and the ExA has supported consultation on a material change request to enable the inclusion of a Structures Exclusion Zone (SEZ) within the proposed wind turbine generator array area.</p> <p>Consultation on this change process is ongoing, with a Consultation Report, responses from IPs and Other Persons (and any related requests to become an IP or Other Person) due at Deadline 6. In this respect, it is important to be clear that this set of questions is seeking to maximise clarity around the existing evidence in support of the Application plus the material change request, in order to support the ExA's recommendation to the SoS. These questions do not seek additional material changes to the Application and (in that respect), advice in the Planning</p>	<p>The Applicant notes this over-arching comment and that the questions are not seeking additional material changes to the Application.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>Inspectorate's Advice Note 16, that there comes a point in an Examination where a material change is unlikely to be accepted by the ExA, should be noted.</p>	
3.12.1.	The Applicant	<p><b>Applicant's shipping and navigation expert credentials: curricula vitae</b>                      In [REP5-012] D5 Appendix 7 point 4, the credentials of the Applicant's experts are elaborated.                      Would the Applicant please clarify:                      a) Para 11: between what dates and for what geographical area was Capt. Moore a Class One unrestricted pilot?                      b) Para 11: what in more detail is Capt. Moore's experience of undertaking navigation risk assessment referred to in this para.?                      c) Para 21: between what dates was Capt. Moore employed as a Class 4 pilot by the PLA restricted to ships of 120m length, and were there any offshore windfarms in the sea area in which he operated at that time?</p>	<p>a) Captain Simon Moore was a Class One Senior Pilot at the Port of Dover between November 2006 &amp; March 2009 and then again between September 2010 and March 2014. The Competent Harbour Authority area was the Port of Dover itself is a 1nm radius from the port. However, the pilot boarding and landing took place up to 5nm from the port, to provide sufficient time for an effective master pilot exchange when large vessels were boarded.</p> <p>b) The Dover Harbour Board is the competent harbour authority which operates the Port of Dover. In 2010/11 the Board decided to devise its own Corporate Risk Assessments. These covered all areas of the business and Captain Moore was the maritime lead on all the marine based risks. Once these had been determined these risks would form the basis of the Navigation Risk Assessment for the port. This was a comprehensive look at all the risks and is still in use by the port today. The latest version can be seen at the bottom of the page on the following link:</p> <p style="text-align: center;"><a href="https://www.doverport.co.uk/operations/podomsc/">https://www.doverport.co.uk/operations/podomsc/</a></p> <p>Captain Moore was also the maritime lead for fully revising the port's Port</p>



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>d) Para 24: is the 'project area' referred to the general area of the Thanet windfarm and how does Capt. Moore's current role as Senior Master on a Dover to Calais ferry give "strong and current knowledge of the project area"?</p> <p>e) Para 30: between what dates and where was Commander Brown a Class 1 pilot?</p> <p>f) Para 31: Has Commander Brown managed, commissioned or directed navigational risk assessments or navigational risk workshops?</p> <p>g) Para 44: did Commander Brown's experience of sailing up the river Thames in military vessels involve boarding or landing a pilot and/or navigating in close proximity to a windfarm?</p> <p>h) Has Commander Brown piloted, navigated or commanded commercial</p>	<p>Marine Safety Code which is the safety management system for marine port operations. Once this was completed it was peer reviewed by the Harbour Master who had responsibility for safety management systems at the Port of London Authority.</p> <p>c) Captain Moore was employed at the PLA as a Class 4 Pilot between February and December 2006. During this time the Kentish Flats windfarm was in operation and was passed on a regular basis transiting the Princes Channel and Oaze Precautionary Area.</p> <p>d) The general area refers to the Dover Straits and South East area inclusive of the project area and approaches to Thames estuary. Captain Moore's understanding of the general area draws on his prior and existing practitioner knowledge and experience, his over-arching maritime lead role for (including navigation) risk assessments at Dover and in the Dover Strait and adjacent areas. The Dover Strait, and the complexity of navigation management within it, should not be considered in isolation to the wider south east area (inclusive of the project area and the approaches to the Thames estuary) because the navigation management of these areas are an overall and integrated system. Captain Moore therefore understands the broader region from both a mariner and navigation risk assessment perspective. The skills are transferable and the combination of existing experience of the area and a lengthy career of the region more widely gives a strong and current knowledge of not only the area but the region more broadly and the challenges associated with the busy areas of shipping and</p>

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		<p>vessels in the vicinity of windfarms in the Thames Estuary and approaches and if so, of what types and sizes?</p>	<p>fixed obstructions. Furthermore, it is noted that Master Mariners and Pilots undergo comprehensive training throughout careers. The skills and experiences gained over many years can be applied to other situations and sea areas. As mariners are trained to take anywhere in the world not just Dover to Calais or operating in and around the NE Spit, including as a pilot in the project area,</p> <p>e) Commander Paul Brown was a Class 1 pilot at the Port of Dover from 2012- 2017. He has been a pilot for the Taw and Torridge Pilotage District and for the Torbay Pilotage District since 2017.</p> <p>f) Commander Brown has managed two NRAs with Marico Marine for the proposed Rotherhithe to Canary Wharf Bridge for Transport for London (notably this is within the PLA statutory area on the River Thames) and one for Red Funnel for the introduction of a new ferry on the Southampton to Cowes route. As Harbour Master and General Manager Operations for the Port of Dover, Commander Brown commissioned and ran his own annual navigational risk workshops as a part of the normal management of the port under the auspices of the Port Marine Safety Code.</p> <p>g) Yes. A pilot was embarked and disembarked in every ship sailing up the river Thames and each time it was at the North East Spit or the Tongue Pilot stations. In addition, Commander Brown has routinely navigated and commanded military vessels conducting boat transfers for pilots and other personnel in significantly more demanding conditions and very much more</p>

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			<p>close proximity to navigational hazards (including windfarms) than is being considered here in the Thames, in a sea going career that spanned over 25 years on operations throughout the world.</p> <p>h). Commander Brown has not navigated or commanded commercial vessels in the vicinity of wind farms in the Thames Estuary and approaches. Commander Brown has however routinely handled commercial vessels of varying dimensions in navigationally confined waters for over 7 years (whether through other estuary type regions and or with other navigational hazards and obstructions). This has included cruise ships of up to 320m in Dover and smaller bulk cargo ships of up to 140 m in the tidally confined waters of the river Torridge. Commander Brown is intimately familiar with the handling characteristics of commercial vessels both on passage and when manoeuvring, in a range of met-ocean conditions and constrained waters.</p>
3.12.2.	The Applicant	<p><b>Applicant's shipping and navigation expert</b> credentials: quality assurance processes</p> <p>Can the Applicant clarify whether and if so by what means Marico carries out a quality assurance (QA) audit process on NRAs prepared by it for clients? Has Marico carried out a QA on this NRA and NRAA?</p>	<p>The Applicant can confirm that Marico Marine completes a quality assurance (QA) review on all reporting and risk assessments prepared by them and for their clients before submission to them. This forms part of their Quality Management System (QMS), which is audited and certified as compliant with the ISO 9001:2015 quality standard. Marico's accreditation in this regard is supplied and audited on an annual basis by BSI. Marico was last audited by BSI in December 2018.</p> <p>As laid out in Marico's Consultancy Procedure (PR-CN-01; part of their QMS), once a report is considered ready for submission as 'Draft A' to a client, the</p>

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			<p>Project Manager passes it to an appropriate senior staff member – either Principal Consultant/Head of Consultancy/Operations Director (as appropriate) – for their review for:</p> <ul style="list-style-type: none"> <li>• Technical content;</li> <li>• Language/legibility; and</li> <li>• Formatting.</li> </ul> <p>They are required to carry out a QA review of the report and pass it back to the Project Manager for remedial work if so required. A report is not permitted for issue to a client unless it has been reviewed and subsequently approved for release as 'Draft A' by the Project Director.</p> <p>Once 'Draft A' has been supplied to a client, they have an opportunity to review the report and request any changes, corrections or amendments they require. Such changes are at Marico's discretion and where appropriate, lead to the finalisation of 'Issue 01' of the report for supply to the client. Following completion of a project, Marico also undertakes a final 'End of Project Audit' and seeks feedback from their clients with a view to aiding business improvement.</p> <p>The QA check and review for Issue 01 of the NRA in May 2018 was conducted by Dr Ed Rogers and Captain Paul Fuller and the document authorised for release by Jamie Holmes. The Marico QA review of the NRAA was conducted by John Riding, Senior Partner Marico Marine, and</p>

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			<p>Commander Paul Brown in April 2019, with independent review undertaken by Captain Simon Moore following involvement at the HAZID workshop.</p>
3.12.3.	The Applicant	<p><b>Applicant's shipping and navigation expert credentials: accountability and supervision</b>                      Can the Applicant please clarify the current status of the following expert witnesses' relationship with Marico [REP4C-003]:</p> <p>a) Since October 2018, Dr Ed Rogers now runs his own consultancy. Does Dr Rogers' role as Project and Technical Director mean that he is the lead provider of the NRA and NRAA and if so:</p> <p>i. Is he now employed as a consultant representing Marico; or</p> <p>ii. Is he providing advice on his own account (and if so, by what means does he carry out a quality assurance (QA) audit process on NRAs prepared by him for clients)?</p> <p>b) Mr Jamie Holmes is characterised as</p>	<p>Response to a)</p> <p>i)</p> <p>Dr Ed Rogers ceased employment with Marico Marine on 3<sup>rd</sup> October 2018 and founded Nash Maritime Ltd on 30<sup>th</sup> October 2018. During his employment by Marico Marine as Operations Director, Dr Rogers was the company's Project Director for the TEOW NRA from commencement of the project.</p> <p>Since leaving Marico Marine, Dr Rogers has been contracted on a "Sub-Consultant Agreement" by Marico Marine to continue providing technical input into TEOW examination and representing Marico Marine. Overarching governance is now provided by the new Marico Marine Operations Director Andre Cocuccio (ex-Assistant Director of Navigation Safety for the Maritime and Coastguard Agency) with support, as noted, for QA/QC from John Riding for matters relating to project specifics. Dr Rogers was therefore the Project Director for the NRA (during his employment by Marico Marine) and has been the lead technical consultant of the NRAA which has been QA/QC'd in line with Marico Marine ISO 9001:2015 approved Quality Management System audit processes, which for the NRAA included review by master mariners (Commander Paul Brown for Marico Marine and Captain Simon Moore as independent) and John Riding as Senior Partner of Marico Marine. John Riding manages the Marico Marine Group and has notable experience,</p>

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		<p>an Associate Consultant of Marico.</p> <p>i. Is Mr Holmes employed by Marico?</p> <p>ii. Is Mr Holmes working to Dr Rogers and if so, how does that relationship operate within any QA process used by Marico?</p>	<p>including time spent at MCA from 1993 to 1996 as FSA development lead, during which time he was responsible for the development of the Top Down Method used for New Regulations for SOLAS Vessels by the International Maritime Organization (IMO), and oversaw the application of the methodology to Bulk Carriers, which resulted in changes to Chapter VII of the SOLAS Convention.</p> <p>Response to ii) As outlined above Dr Rogers therefore provides advice and work content as a Sub-consultant to Marico Marine, who are responsible for direction and management including quality assurance and audit of any work package delivered by Dr Rogers, in line with the Marico Marine ISO 9001:2015 approved Quality Management System which sits under the overall direction of John Riding as Senior Partner/owner of Marico Marine.</p> <p>Response to b) i) Mr Jamie Holmes ceased employment with Marico Marine on 10<sup>th</sup> October 2018, and has since joined Nash Maritime Ltd working with Dr Rogers. During his employment by Marico Marine as Associate Director, Mr Holmes was the company's Project Manager for the TEOW NRA. Since leaving Marico Marine, Mr Holmes has also been contracted by Marico Marine on a "Sub-Consultant Agreement" to continue providing technical input into TEOW examination as required and under the direction and management of Marico Marine Operations Director Andre Cocuccio.</p>

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			<p>Response to ii) Mr Holmes works to Marico Marine Operations Director Andre Cocuccio, and QA is undertaken in the same manner as Dr Rogers, in line with the Marico Marine ISO 9001:2015 Quality Management System which sits under the overall direction of John Riding as Senior Partner/owner of Marico Marine.</p>
3.12.4.	The Applicant	<p><b>Reduction of sea room for pilot boarding and landing at NE Spit</b> In [REP1-017] Applicant's Response to [RR-051] SUNK VTS User group SUG-2 it is stated that <i>"The assessments presented within the NRA and ES chapter do not [sic] conclude there is sufficient sea room at North East Spit for continuation of pilot transfer operations."</i></p> <ul style="list-style-type: none"> <li>• Would the Applicant please review and clarify this statement?</li> </ul>	<p>The Applicant has reviewed this response and clarifies that this is a typographical error. For clarity the corrected Applicant's response is provided below with the word 'sufficient' replaced with 'insufficient' and shown in bold/underline.</p> <p>The assessments presented within the NRA and ES chapter do not conclude there is <b>insufficient</b> sea room at North East Spit for continuation of pilot transfer operations. The section specifically addressing these in detail is Section 7.2 of the NRA (PINS Ref APP-089/ Application Ref 6.4.10.1), and the Pilot Transfer Bridge Simulation exercise presented in Annex 10-2 of the application (PINS Ref APP-090/ Application Ref 6.4.10.2).</p> <p>The Applicant apologises for any confusion in this regard.</p>
3.12.5.	Maritime and Coastguard Agency	<p><b>Status of the "inshore route" and route to the north of the existing Thanet Offshore Wind Farm (TOWF)</b> The Applicant has argued strongly that</p>	<p>The Applicant notes that this ExQ is for IPs but has the following observations to make.</p> <p>During oral representations and at project specific meetings Capt Roger</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
	(MCA); Trinity House (THLS)	<p>the current route between the TOWF and the Kent coast is not designated as a 'sea lane' in the meaning attributed by NPS EN-3. Further in [REP5-18] at point 43, the Applicant makes the case that being outside harbour limits, the area of routes surrounding the TOWF <i>"is better described as an area of open sea."</i></p> <p>In its D5 submission, MCA [REP5-063] argues that the <i>"...area of sea to the west of the existing Thanet windfarm...is not an IMO designated routing measure" but goes on to state "...in an operational sense, the area of sea should be treated as a recognized sea lane" and that "there is no formally designated or charted inshore route or route immediately to the north of the project. There is nothing in the Pilot Books to indicate that (either) is an important route to be followed when route planning..."</i></p> <p>In the [REP4-034] PLA D4 submission</p>	<p>Barker in particular of THLS has noted the area of sea to be an area of general navigation. The Applicant concurs with this view and does not consider the routes to be formal sea lanes, nor understands there to be any existing proposals in place to designate the area as a sea lane or implement any formal routing measures.</p> <p>The Applicant notes that the jurisdiction of the PLA harbour limits are as recorded within charts and previous submission, and that the PLA jurisdiction does not extend to the inshore route area. In this context by being outside of the harbour limits (PLA statutory and competent harbour authority area boundaries) this is outside of the PLA jurisdiction and lies within an area of open sea that is under MCA responsibility (and THLS as relates to aids to navigation).</p>



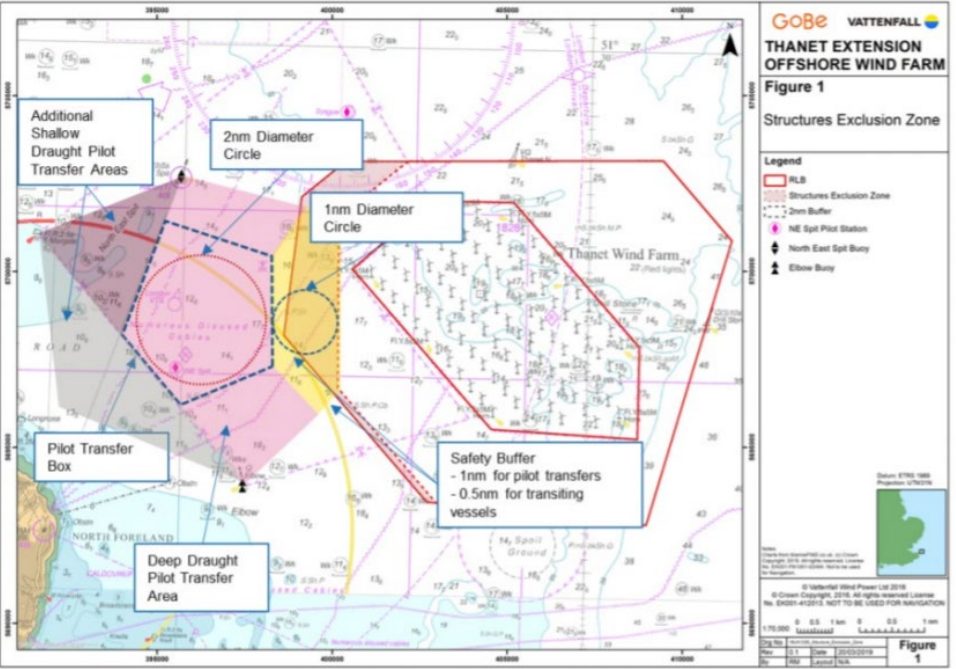
PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>Appendix 1: Anatec Review of Evidence Figures 8.3 and 8.4, this inshore route is clearly shown as one of the 3 primary approaches to the Thames Estuary prior to and after any WF construction in the estuary.</p> <p>Would the IPs please clarify for the avoidance of doubt:</p> <p>a) whether MCA intends “the area of sea” in its [REP5-063] submission referred above in both instances to mean the space used for general navigation, transit by commercial vessels and pilot transfer between the southerly extent of VTS control as shown on charts and the NE Spit Racon buoy; and</p> <p>b) whether THLS agrees with the Applicant that being outside the controls exercised within the limits of Port of London Authority, the area of sea including around the TOWF should be described as “an area of open sea” as argued by the Applicant in the [REP5-018] submission; and</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>c) whether THLS agrees with the Applicant's case at [REP5-018] as referred above that:</p> <ul style="list-style-type: none"> <li>i. there <i>"is no formally designated or charted inshore route..."</i> or</li> <li>ii. <i>"there "is no formally designated ...route immediately to the north of the project" or</i></li> <li>iii. <i>"there is nothing in the Pilot Books to indicate that (the route around the TOWF) is an important route to be followed when route planning".</i></li> </ul>	
3.12.6.	<p>London Pilot Council (LPC); Port of London Authority / Estuary Services Ltd (PLA), Port of Tilbury London</p>	<p><b>Sea Room at NE Spit Racon buoy</b>                      Would the IPs comment on the following:</p> <p>a) Do they consider that the distance of 2.5nm (effectively 1.5nm plus 1nm buffer at the narrowest point) between NE Spit Racon buoy and the proposed TEOW as currently proposed by the Applicant would be a <i>"distance that is acceptable for continued safe pilot transfer operations"</i> in the context of the</p>	<p>a). Whilst the Applicant notes this ExAQ is directed at IP's (and welcomes independent comment by IP's on this) the Applicant seeks to clarify with regards to (a) that the distance of 2.5nm between NE Spit Racon Buoy and the proposed TEOW, and the basis of the portions of this distance available as sea room and the buffer, is dependent on the number and size of vessels in this area and whether they are transiting or undertaking other operations. Very limited numbers of pilot transfers take place in this 'narrowest point' although it is recognised 'some (limited) transfers' occur in the area of more sea room to the north and towards the Tongue. This is evidenced in material provided by ESL as well as AIS data and explained further in Section 3.6 of Appendix 28 to Deadline 5 Submission: Addendum to Navigation Risk</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
	<p>Ltd, London Gateway Port Ltd (PoTL/LGPL), UK Chamber of Shipping (UKCoS); Trinity House (THLS)</p>	<p>uses of this sea space.</p> <p>b) Would the embedded risk control of the SEZ as proposed be sufficient in combination with other risk controls proposed by the Applicant to reduce all of the perceived risks to shipping and navigation to As Low As Reasonably Practicable (ALARP) in their opinion.</p> <p>c) Is it appropriate for the 1nm safety buffer to be reduced for short durations by the net effect of a 500m "rolling" safety zone.</p> <p>d) Can relevant sea space between NE Spit Racon buoy and the proposed TEOW reasonably be defined as the zone between the inner limit of an amended Structures Exclusion Zone in an arc around the NW sector of the windfarm, extending from a line due west of the SW corner of the SEZ to the currently charted no-anchorage line and from the line of the North Foreland sector light as</p>	<p>Assessment. Thus transits have been the primary basis for assessing sea room and the available sea room and buffer distances, dependent on numbers and sizes of vessels is provided in Table 10.</p> <p>b). The Applicant notes that the NRA A conducted with IP involvement demonstrated that all hazards were assessed as ALARP or lower, and that no IP's have put forward, identified or requested the inclusion of controls identified by the Applicant but not put forward. Specifically, with regards the perceived risks to shipping and navigation being ALARP the Applicant would note that the PLA's submission of a revised hazard log at D4C concluded the risks to be moderate. Whilst the definitions presented within the PLA's D4C submission indicated a change in methodology, the Applicant would note that up until around the 19th May 2019, following ISH8 and Deadline 5, there was a worked example NRA publicly available on the PLA's website which includes clear definitions. This accompanying text has since been withdrawn from the PLA website (around the 19th May 2019) but the matrix, and simplified spreadsheet method of assessment that PLA referred to at ISH8 as forming an alternative to the use of the algorithm based Hazman 2 software remains publicly available at the following weblink: <a href="https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx">https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx</a>, and is provided at Annex B to this Deadline 6 submission. The link provides a clear reference to moderate scores being "Efforts should be made to reduce risk to 'As low as reasonably practicable' (ALARP), but activity may be undertaken". It is important to note in this context that PLA's instructions for NRA (<a href="http://www.pla.co.uk/Safety/SMS/Navigational-Risk-Assessment-">http://www.pla.co.uk/Safety/SMS/Navigational-Risk-Assessment-</a></p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>extended through the NE Spit Racon buoy?</p>	<p><a href="#">Guidance-to-Operators-and-Owners</a>) state "It is logical, and not unreasonable, that the approach to and method of risk assessment undertaken by owners/operators in such circumstances is the same or similar to that employed by the PLA. The result of this specific risk assessment can then interface seamlessly with the wider port SMS". The Applicant has therefore sought to use similar methods to those utilised by PLA and has identified the perceived risks to be ALARP. The PLA's D4C submission, notwithstanding the apparent change in methodology made prior to the PLA worked example being withdrawn, concludes the project risks to be moderate, and therefore ALARP with risk controls (which are provided and set out in the NRAA). It therefore remains the Applicant's position that the project risks are ALARP, and that this aligns with the conclusions drawn by PLA through reference to their standard and recommended approach to NRA published and publicly available on their website until 19<sup>th</sup> May.</p> <p>c). The Applicant notes that if rolling safety zones are applied for, and that 500m zones are requested, additional risk controls identified within the original NRA will be place such as guard vessels, that will provide a reduction in risk, likely to be equivalent or better than a small temporary safety zone. The Applicant also notes that this matter has been agreed as commonplace with the MCA in the SoCG submitted with this Deadline 6 submission.</p> <p>d) The Applicant notes the definition of sea space as stated by ExA and, for refers to Figure 20 of Appendix 28 to Deadline 5 (NRA Addendum REP5-029)</p>

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			<p>which is repeated below for ease of reference showing the sea space in pink and yellow as represented with the SEZ. However, it should be noted that this is a precautionary definition of sea space as applies to the very limited number of deeper draught vessels that transit and undertake pilotage operations in this area. The analysis of AIS data has shown that the majority of vessels are able to, and routinely do, transit to the west of the no anchoring line and over the NE Spit Bank and therefore a greater sea space is available to the majority of vessels in this area (as indicated by 'additional shallow draught pilot transfer areas' in the figure below) than this precautionary definition which can be considered relevant to vessels of deeper draught.</p>

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3.12.7.	The Applicant, Port of London Authority / Estuary	<p><b>Relocation of Tongue DW pilot diamond</b></p> <p>In [REP5-039] the NRAA (revised) at para 168 the Applicant notes: <i>'The TEOW, depending on final turbine layout may require the relocation of the Tongue Pilot Diamond slightly further north (noting</i></p>	<p>a) The Applicant notes that with the SEZ in place and a WTG in the final design located at the closest point of the TEOW to the Tongue Deepwater Pilot Diamond, then the proposed project WTG would be 0.7nm closer to the Tongue Deep Water Pilot Diamond (Tongue DWD) compared to the existing TOW WTGs. The Tongue DWD diamond is located 1.9nm from the</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
	<p>Services Ltd (PLA), London Pilots Council (LPC).</p>	<p><i>ESL pilot boarding locations as presented in Section 2)</i>.</p> <p>In [REP5-069] D5 comments on the Applicant's Deadline 4C Appendix 2 para 114-115, PLA express their concerns that the relocation of the Tongue boarding diamond and consequent costs of so doing have not been considered in the application or evidence to the Examination. In [REP5- 070] response to Action Point 17 from ISH8, PLA states '<i>ESL and PLA therefore believe there will be an increase in traffic at the existing Tongue DWD</i>' and that '<i>[t]he reduction in sea room between the Tongue DWD and SEZ (by approx. 0.7nm) would require the Tongue DWD to be relocated (even if there is no increase in usage)...ESL would suggest a relocated Tongue DWD should be approximately 2.4nm North-North-East of its current location.</i>'</p> <p>a) Would the Applicant clarify whether their proposals require the relocation of</p>	<p>existing wind farm boundary and 1.2nm from the SEZ boundary. Should the pilot diamond require to be relocated it would therefore appear to be proportionate to relocate by 0.7nm, and not by 2.4nm. In light of this whilst the Applicant does not consider the pilot diamond itself to be relocated, any relocation desired by IPs would not need to be such a significant distance to the north and could more appropriately be located within areas already utilised.</p> <p>The Applicant also notes that the Tongue Pilot Diamond accounted for 1.3% of pilot transfers in the NE Spit Pilot Transfer area in 2018 and is therefore considered to only be used a minority of time.</p> <p>The Applicant also notes that there appears to be some considerable spatial variability in the transfer locations of vessels using Tongue DWD - with some transfers being undertaken at some distance away from the diamond itself. This serves to demonstrate that the precise location of the diamond is a reference point and the pilot launch will normally confirm to the ship a preferred location in relation to the diamond with a heading and speed for transfer. An example was provided by the Applicant in the Statement of Evidence [REP4C-004] and showed that vessels such as the <i>Ougarta</i> LNG vessel at 291m in length utilised the Tongue Deep Water Pilot Diamond when boarding a pilot, prior to the passage, not into the Princess Channel, but through Longsand Head to the North (this figure is repeated at Annex A to this document). The Applicant considers that the Tongue DWD is therefore commonly used for boarding of such vessels, which are (in a</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>the Tongue pilot diamond in order for pilot boarding or landing at that location to be at a safe distance from the proposed extension, taking into account the need for the North Thanet cardinal buoy to be displaced as a consequence of the proposed extension and the density of traffic between the TOWF and the Tongue anchorage.</p> <p>b) If any relocation is proposed:</p> <ul style="list-style-type: none"> <li>i. to the extent that this is known, to where would relocation occur;</li> <li>ii. what if any capital costs are incurred;</li> <li>iii. what if any additional running costs (revenue costs) are incurred by pilot services;</li> <li>iv. who will meet these costs;</li> <li>v. is there any basis for a commercial agreement or other secured provision for contribution by the Applicant to these costs; and</li> <li>vi. have the navigation effects of any relocation been taken sufficient</li> </ul>	<p>similar vein to the NE Spit Pilot Boarding Diamond), diverted from their intended track to board a pilot. This process of diverting a vessel from the most economically efficient track to board a pilot is unusual, unless adverse weather restrictions are in place.</p> <p>The Applicant notes that the PLA / ESL suggestion for 2.4nm for relocating the Tongue DWD is as <i>"This will keep boarding and landing at a safe distance from the Tongue anchorage and the northern boundary of the extension but will inevitably increase passage time and running costs to ESL and pilotage."</i></p> <p>The Applicant does not understand the extent of this relocation at 2.4nm, in the context of a 0.7nm encroachment of TEOW compared to TOW. The Applicant notes that based on the final position of the Thanet North Buoy the extent of any change to the Tongue DWD should be in the order of 0.7nm NNE taking into consideration the Tongue Anchorage – a representative maximum relocation is presented in the figure at Annex E titled 'Tongue Deep Water Pilot Boarding Station overlaid on Fig18 of APP-089 - Vessel traffic density (combined winter and summer surveys)' which shows the Tongue DWD locations as described in this text against a background of vessel traffic density from the NRA (Fig 18 of APP-089) to indicate position relative to vessel transits.</p> <p>Should appropriate relocation incur additional cost the Applicant would be willing to arrange a commercial agreement or other security to the extent that it covers the additional steaming time. Whilst the Applicant has not been able to discuss such an arrangement with the IPs, it would be reasonable to assume an evidence-based displacement payment would be</p>



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>account of in the NRA/NRAA?                      If b) and specifically b) v are responded to, a form of security should be outlined at Deadline 6 and final drafts / confirmation provided at Deadline 7.</p>	<p>most suitable, taking into account the historic use of the diamond through pilot records to set appropriate benchmarks and agreeing a per-transfer cost for transfers to a relocated diamond that were demonstrated through data provided by the IPs. This could be secured through a condition requiring approval from the SoS for the approach to determining the displacement payment and the quantum.</p> <p>In relation to the PLA and ESL view that the use of the Tongue DWD would increase post the TEOW construction, then there is no evidence to suggest this, even if as PLA / ESL assert vessels may choose to navigate around the windfarm (something the Applicant does not agree with), as boarding would take place at the NE Spit pilot diamond, in which the PLA / ESL requirement for 2nm + 1nm buffer has been made available by introduction of the SEZ.</p> <p>Therefore, the Applicant fundamentally does not consider that the use of the Tongue Deep Water Pilot diamond will increase as represented by the PLA / ESL. This is evidenced by the decrease in the Tongue usage evident between 2017 and 218 from 93 transfer to 86 transfers a 7.5% reduction, despite the PLA / ESL noting the trend towards larger vessels, which would presumably more likely be served at a deep water pilot diamond such as the Tongue.</p> <p>b) If any relocation is proposed:  <i>i. to the extent that this is known, to where would relocation occur;</i></p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>The Applicant proposes that if a relocation is necessary, the relocation should be a maximum of 0.7nm to the NNE.</p> <p><i>ii. what if any capital costs are incurred;</i>                      Capital costs for relocation are related to costs of changing the pilot boarding station location on publications such as Admiralty Chart, PLA publications, and the man time cost in doing so in consultation with relevant authorities (MCA / TH). This is anticipated to be minimal.</p> <p>The Applicant does not consider any other capital costs to be necessary.</p> <p><i>iii. what if any additional running costs (revenue costs) are incurred by pilot services;</i>                      The running costs would be based on 2018 pilot transfers to Tongue relate to additional steaming time of 0.7nm to and from the relocated pilot diamond by the pilot launch and crew, and 0.7nm extra steaming time for the pilot when on a vessel. Based on 86 transfers in 2018, then this would total 0.7nm additional distance x 2 (there and back) x 86 transfers = 120nm additional steaming distance for the pilot launch, which at around a 20 -24 knots cruising speed for the pilot launch service speed would equate to 6 additional operational hours per year. A similar calculation for pilotage results in 0.7nm additional steaming x 86 transfers = 60nm additional steaming on a vessel for pilots, which with vessels transiting at around 12-14 knots results in 4-5hrs additional time on vessels per year.</p>

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			<p>The Applicant therefore notes that any additional running costs, if required, would be negligible.</p> <p><i>iv. who will meet these costs;</i> The Applicant would be prepared to meet the reasonable costs of an agreed relocation of the pilot diamond.</p> <p><i>v. is there any basis for a commercial agreement or other secured provision for contribution by the Applicant to these costs; and</i> Whilst for the reasons cited above, the Applicant does not consider the movement of the Tongue DWD to be necessary, should appropriate relocation of the pilot diamond be approved by the relevant authorities and be commensurate with the encroachment of WTGs in the final layout, the Applicant would consider this to be an evidenced change in pilot boarding which would be markedly different to perceived behavioural changes of vessels (which the Applicant does not consider would need to occur). As such, the Applicant would be willing to arrange a commercial agreement or other security to the extent that it covers the additional steaming time and pilot time from the existing location of the Tongue DWD to a relocated position. Whilst the Applicant has not been able to discuss such an arrangement with the IPs, it would be reasonable to assume an evidence-based displacement payment would be most suitable, taking into account the historic use of the diamond through pilot records to set appropriate benchmarks for the use of the diamond and agreeing a yearly cost for the</p>

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			<p>additional steaming and pilot time associated with transfers to a relocated diamond. This could be secured through a condition requiring approval from the SoS for the approach to determining the displacement payment and the quantum, subject to the change being relative to the reduction in distance from WTGs and being approved by the relevant authorities.</p> <p><i>vi. have the navigation effects of any relocation been taken sufficient account of in the NRA/NRAA?</i></p> <p>The original NRA considered the relocation of pilot transfers to the Tongue DWD as an additional risk control measure and as such, was considered to reduce risk - albeit the additional risk control was not adopted. The NRA A did not consider the relocation of the Tongue DWD any further, as at 0.7nm it would not materially affect either the hazard risk scores, or identification and implementation of risk control measures.</p> <p>If b) and specifically b) v are responded to, a form of security should be outlined at Deadline 6 and final drafts / confirmation provided at Deadline 7.</p>
3.12.8.	London Pilots Council (LPC)	<p><b>Alternative pilot transfer locations for deep-draught and ULCS vessels</b>                      [REP5-061] para 2.4 LPC states '<i>the pressures of multiple large vessel boardings at the Sunk pilot station, has created an immediate demand for deep</i></p>	<p>Whilst the Applicant recognises this question is directed at LPC the Applicant wishes to clarify, for the benefit of the ExA, the basis of the scenario presented by LPC and on which the ExA have asked this question.</p> <p>LPC have predicated the scenario on one where the North Edinburgh</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p><i>draft Class1 and Ultra large (ULCS) vessels to transit the North Edinburgh Channel to and from the NESP at drafts up to 13.5 meters, having boarded or landed a Pilot at the NESP. This is a major factor in the future growth of business in the Port of London.'</i> At para 2.7 it says '<i>[i]t is not possible tonserve [sic] Ultra Large vessels transiting the North Edinburgh Channel in a position directly to the North of the NESP Racon Buoy as this area comprises the busiest East/West Traffic route.'</i></p> <p>Would LPC please comment on the spatial and economic implications of alternative pilot transfer to and from deep draft Class 1 and UCLS vessels if dipping down to the NE Spit pilot station is deemed unsafe? In commenting, if an alternative location is to be used, which should it be, what are the effects of the change and has it been sufficiently assessed?</p>	<p>Channel could be dredged and made into a navigable channel for vessels with draughts of up to 13.5m. The Applicant considers this fundamental change in depths and associated navigation practices to be conjecture and the future use of the North Edinburgh Channel has no reliable status in planning terms. This consideration is made with reference to the following points:</p> <ul style="list-style-type: none"> <li>• This is a position made by LPC only</li> <li>• This does not appear to be consistent with the PLA's position. The PLA have stated their position in this regard during examination (Ref Section 4.6 of REP-142) in which the PLA stated that future dredging options have been considered and no decision has been made at this time although North Edinburgh Channel would not be likely to be the selected location. In any event, the PLA stated that dredging at the selected location would likely be to 10m below chart datum, for vessels of routinely up to 12m during higher tides (and not 13.5m as stated by LPC hence this does not support the LPC's predicated basis of future transits of deep draught Class 1 or ULCS vessels).</li> <li>• By way of historical context it is noteworthy that the PLA have previously determined North Edinburgh Channel to no longer be viable to navigation (due to the dynamic and mobile sediment accumulation in the area and reduction of depth) and removed channel buoyage for navigation safety reasons (Source:</li> </ul>

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			<p><a href="https://www.pla.co.uk/assets/Environmental_Assessment.pdf">https://www.pla.co.uk/assets/Environmental_Assessment.pdf</a>). As per Section 16 within the referenced document this decision was made by the PLA and included consideration of in combination effects and specifically the London Gateway Developments and offshore wind farms (i.e. future traffic profiles). Furthermore, the North Edinburgh Channel is currently designated (by the PLA) as a sand placement site for disposal of dredge material (from the Princes Channel and other dredging activity in the approaches).</p> <ul style="list-style-type: none"> <li>• The North Edinburgh Channel and Fishermans Gat lie within areas of international designation (Margate Sands SAC) and therefore the Applicant notes that seeking a licence for dredging would require an HRA and to be submitted before the MMO and Natural England as a plan or project. No such plan or project is known to exist.</li> </ul> <p>In summary, the LPC presented scenario, of deep draught class 1 or ULCS vessels up to 13.5m draught, on which ExA have based this question, cannot be considered credible beyond an accepted aspiration. This is due to the significant dredging that would be required to enable onwards transit into the Thames estuary (in the vicinity of Edinburgh Channel and/or Fishermans Gat and likely in other areas) which is not being progressed at this time in planning terms and nor have the PLA presented a supporting scenario supporting this fundamental and significant change of displacing the navigation of large vessels from the SUNK and into the study area and NESP</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			in particular.
3.12.9.	The Applicant	<p><b>Implications of pilot station relocation if needed</b></p> <p>In [REP3-004] response to point 4 of [REP2-048] from Sunk User Group the Applicant refers back to [REP2-011] Appendix 4 to D2 responses which states <i>"The Applicant, at the Pilotage Study Report undertook analysis of the time, distance and cost involved for launches servicing the various stations and this should be used in understanding the commercial impact"</i>.</p> <p>Would the Applicant please clarify with additional detail how this answer and the Pilotage Study report addresses the [REP2-048] point 4?</p>	<p>The Applicant notes that REP3-004 relates to <i>"Deadline 3 Submission -Annex B to Appendix 1: MCZ Chart illustrating Goodwin Sands with relevant projects"</i> which the applicant considers may be an incorrect reference and therefore the applicant is unsure of the appropriate reference.</p> <p>The Applicant notes the reference to the Sunk Users Group – which does not have operational oversight of the NE Spit Study area, that at point 4 of [REP2-048] noted:</p> <p><i>"4) If the NE spit pilot station had to be relocated further seaward, this will unfortunately result in extra costs, not just financially, but also in time, to pilots, and pilot launch transiting times. Being exposed further out to sea, may also have the result of more probable likelihood of unfavourable sea and swell conditions. This could result in more vessels not being served and having to wait considerable time for wind conditions to be in their favour."</i></p> <p>The Sunk User group are simply pointing out that if a pilot station were relocated, then additional cost and operational impacts <u>could</u> occur.</p> <p>The Applicant notes that REP2-011 relates to <i>"Deadline 2 Submission –</i></p>

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			<p><i>Appendix 19: Revised Application Document. Doc 2.3 Land Plans (Onshore)– Revision D</i>”, however it is believed that the ExA is referring to the Pilotage Study [ES Volume 4, Annex 10-1] at “Section 3.3 Alternative Pilot Arrangements”, in which analysis is presented on the increase transit time for the pilot launch if pilot boarding were to take place at either the:</p> <ul style="list-style-type: none"> <li>• Option 1: Board pilots to the south of the wind farm, between Ramsgate and North East Goodwin</li> <li>• Option 2: Board pilots near to North East Spit east cardinal, to the west of the wind farm and the Tongue station.</li> </ul> <p>The analysis presented notes that there is no difference in distance if the pilot launch transits to Option 1 and that the launch would have to travel an additional 2.9nm were to travel to Option 2, an additional 7.25 minutes per transfer.</p> <p>It is important to note that the context of the Pilotage Report relates to the PEIR RLB, which was reduced at the western extent for the ES submission to the current RLB, and further reduced as a result of implementing the SEZ. As such comments on “constrained fairways” no longer apply.</p> <p>Further it is the Applicants firm view that there is no need for pilot transfer locations to change as the 2nm plus 1nm has been met for the NE Spit Pilot Diamond, with the SEZ in place, and that most other operational areas for pilot boarding are unaffected by the TEOW.</p>

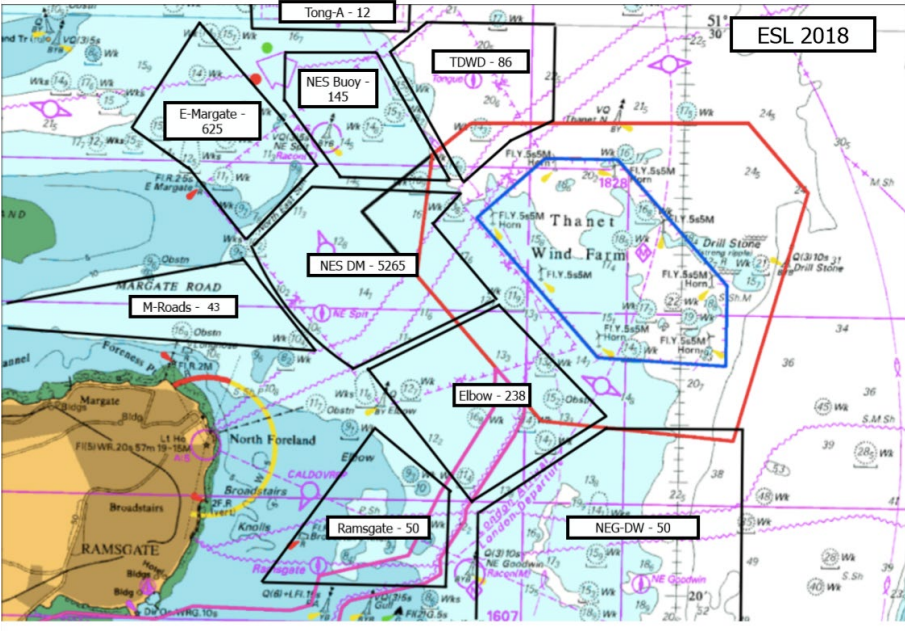


PINS Question number:	Question is addressed to:	Question:	Applicant's Response:																																	
			<p>However, and despite the Applicants firm view on this matter, specific analysis is presented in response to ExQ 3.12.7. on commercial impact of moving the Tongue pilot diamond, and within ExQ 3.12.10 on relocation of any transfers that could be impacted at Elbow as a result of the TEOW with the SEZ in place.</p>																																	
3.12.10	The Applicant	<p><b>Unadopted risk control: NE Spit pilot boarding operations</b>                      In [REP5-039] the NRAA (revised) at para 172 the Applicant states: <i>'A risk control, identified within the original NRA (Table 22, unadopted risk control No.2) which has not been adopted, is the relocation of the NE Spit Pilot Boarding operations. The Applicant does not consider that the scheme would require any such relocation, as the hazard risk scores assessed in this Addendum NRA demonstrate navigation risk to be acceptable... The Applicant considers that this is confirmed by the introduction of the SEZ, which ensures that the required sea room for pilot transfer would be available. However, if IPs consider that there is a residual concern</i></p>	<p>The Applicant notes the following responses to the ExA Questions:</p> <p>a) The Applicant notes that <i>"NE Spit pilot boarding operations"</i> relates to the whole of the operation NE Spit pilot boarding area noted by ESL (as presented below and at Fig 14, Fig 15 [also below] and Table 5 of REP5-039):</p> <table border="1" data-bbox="1153 901 1915 1348"> <thead> <tr> <th>ESL NE Spit Operational Area</th> <th>2017</th> <th>2018</th> </tr> </thead> <tbody> <tr> <td>Tongue Anchorage</td> <td>16</td> <td>12</td> </tr> <tr> <td>Tongue Pilot Diamond*</td> <td>93</td> <td>86</td> </tr> <tr> <td>NE Spit Buoy</td> <td>225</td> <td>145</td> </tr> <tr> <td>E-Margate</td> <td>690</td> <td>625</td> </tr> <tr> <td>Margate Road</td> <td>137</td> <td>43</td> </tr> <tr> <td>Ramsgate</td> <td>34</td> <td>50</td> </tr> <tr> <td>NE Spit Pilot Diamond</td> <td>5199</td> <td>5265</td> </tr> <tr> <td>Elbow*</td> <td>157</td> <td>238</td> </tr> <tr> <td>NE Goodwin Pilot Diamond</td> <td>28</td> <td>50</td> </tr> <tr> <td><b>Total</b></td> <td><b>6579</b></td> <td><b>6514</b></td> </tr> </tbody> </table>	ESL NE Spit Operational Area	2017	2018	Tongue Anchorage	16	12	Tongue Pilot Diamond*	93	86	NE Spit Buoy	225	145	E-Margate	690	625	Margate Road	137	43	Ramsgate	34	50	NE Spit Pilot Diamond	5199	5265	Elbow*	157	238	NE Goodwin Pilot Diamond	28	50	<b>Total</b>	<b>6579</b>	<b>6514</b>
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PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p><i>with pilotage operations, specifically in relation to large vessels dipping the full distance from the north to the NE Spit pilot diamond, it would be feasible for vessels to be the subject of pilot transfers further to the north of that pilot diamond, within the current area of pilot operations.'</i></p> <p>a) The Applicant is asked to confirm that there are no circumstances in which it considers that a relocation of NE Spit pilot boarding operations might be argued as a relevant mitigation in respect of the provision of adequate sea room and navigation safety in the NE Spit area.</p> <p>b) If such a confirmation cannot be provided:</p> <ul style="list-style-type: none"> <li>i. to the extent that this is known, to where would relocation occur;</li> <li>ii. what if any capital costs are incurred;</li> <li>iii. what if any additional running</li> </ul>	<p>With regards the relocation of the NE Spit pilot diamond it is not considered necessary, under any circumstances, that the diamond would require relocation, with adequate searoom existing.</p> <p>The Applicant would also note from this data that there has been a reduction in pilotage operations at NE Spit between 2017 and 2018, and that when related to data presented in <i>Response to further information requested by the ExA (Responses to Action Points from ISH2) submitted on behalf of the Port of London Authority and Estuary Services Limited</i>, in which it is noted at item Action 10 Marine Guidance Note (MGN) 543 Compliance, that the total pilotage numbers at NE Spit were 6691 in 2016, which demonstrates a further reduction in pilotage transfer at NE Spit. The Applicant also notes that there is a disparity in these datasets (which the Applicant has assumed to be related to the difference in vessels served compared to the actual numbers of pilot's transfers) for 2017 which are different, however it is clearly evident that over the last 3 years there has been clear decline in pilotage operations at NE Spit in general terms. Any recent increase in Q4 2018/Q1 2019 would therefore equate to a broadly static position in the context of this decline.</p> <p>The Applicant has noted that as the required sea room has been provided for at the NE Spit Pilot Diamond with the SEZ in place that there is no requirement for the relocation of pilot boarding from this area. In the context of the above information the NE Spit Pilot Diamond has the highest frequency of pilotage transfers of any area of the NE Spit Pilot Boarding operations areas at 81%.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>costs (revenue costs) are incurred by pilot services;</p> <p>iv. who will meet these costs;</p> <p>v. is there any basis for a commercial agreement or other secured provision for contribution by the Applicant to these costs; and</p> <p>vi. have the navigation effects of any relocation been taken sufficient account of in the NRA/NRAA?</p> <p>If b) and specifically b) v are responded to, a form of security should be outlined at Deadline 6 and final drafts / confirmation provided at Deadline 7.</p>	<p>Further the Applicant notes that the following ESL defined pilot boarding areas are not affected by the TEOW development:</p> <ul style="list-style-type: none"> <li>• Tongue Anchorage</li> <li>• E-Margate</li> <li>• Margate Roads</li> <li>• Ramsgate</li> <li>• NE Goodwin</li> </ul> <p>Which together with the NE Spit Diamond, made up 92.8% of all pilotage transfers occurring within the ESL NE Spit area of operations in 2018. There is therefore demonstrably no effect on &gt;90% of ESL's operations.</p> <p>As noted above in response to 3.12.7, in terms of Tongue Pilot Diamond, which in 2018 accounted for 1.3% of transfers in the ESL NE Spit Operational area, then the applicant notes that it may be necessary relocate the Tongue Pilot Diamond by up to 0.7nm if a WTG were placed at the closest point of the TEOW to the Tongue Pilot Diamond. The Applicant notes representations from PLA / ESL that if relocation of the Tongue Pilot Diamond was necessary it would need to be located 2.4nm to the north to ensure the diamond is not located in a high vessel transit area. However, the Applicant does not agree with this statement as:</p> <ul style="list-style-type: none"> <li>• The Tongue pilot diamond at the moment is in an area of high</li> </ul>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>vessel transits;</p> <ul style="list-style-type: none"> <li>• If relocated slightly to the north, by approximately 0.7nm (as to maintain the same distance from the existing boundary as the SEZ boundary of 1.9nm), there would be no material difference in through traffic interaction, compared with its current position and compared to other pilot boarding stations, such as the NE Spit Pilot Diamond (which has a higher density of traffic), the Sunk Pilot Diamond or the Oaze pilot diamond.</li> </ul> <p>The Applicant has noted that transfers do take place in an area to the north of the existing NE Spit Pilot Diamond, referred to by ESL as the NE Spit Buoy area, but that this area, with the SEZ in place, has a very small boundary to the proposed TEOW windfarm, and that in 2018 only 2.2% of transfers occurred in this area. Therefore, the Applicant would note that there would be negligible if any effect on pilot transfers within this area from the TEOW.</p>

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			 <p>In 2018 the Elbow area accounted for 3.7% of pilot transfer operations. The Applicants position is that under normal operating circumstances (i.e. when there are no restrictions to pilotage services) then the Elbow area will remain viable to pilot transfer operations, and that in any event additional sea room is available to the south and south west, and indeed to the north for pilot transfers when restrictions are not in place. The Applicant notes that to the extent that pilot boarding operations maybe delayed during “limit” state conditions within the Elbow area is not considered to be</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>significant (as detailed in the Applicants response to Deadline 5 submissions (Appendix 26 of this Deadline 6 submission) being a small percentage of transfers and occurring only a small percentage of time: but were it to occur, additional pilot boarding areas are available, and even if boarding were not possible, the very worst impact would be one of a very minor weather delay to a vessel – a risk that is taken by vessels every day.</p> <p>b)</p> <p>i). The relocation of the Tongue Pilot Diamond would be a maximum of 0.7nm to the north or north east. For reasons stated in answer to part a) of this ExA question, the Applicant does not consider that any other relocation of pilot boarding diamonds is necessary, and that no other pilot boarding operational areas, which by their virtue cover sea areas as opposed to precise locations, require relocation.</p>
3.12.11	The Applicant	<p><b>Trend for larger vessels accessing Thames and Medway ports</b>                      In [REP5-012] D5 Appendix 7 para 95 the Applicant presents evidence of a trend towards larger vessels carrying more cargo. POTL/LGPL and other IPs presented evidence including at ISH 5 and ISH8 to the effect that larger vessels up to and including 333m LOA are already using the NE Spit PBD and that</p>	<p>a) The determination of an absolute threshold definitions of larger vessels has been the subject of extensive discussion through examination and reference has variously been made by IP's to factors including vessel types/class (e.g. class 1 or 2 as well as cargo type), length, draught, beam and manoeuvring characteristics. The relationship between these factors means caution should be given to defining an absolute overarching threshold of larger vessel by any one factor in isolation. Further information is provided on this in REP4-018. For the purposes of the SEZ the Applicant has considered a threshold of draught to be the key factor as it reflects the</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>this use is likely to continue (particularly for outbound unladen vessels) due to the volume of vessel traffic at the Sunk pilot station and in northerly channels of the Thames.</p> <p>Would the Applicant please clarify:</p> <p>a) What does the Applicant consider to be the threshold for "larger vessels" in regard to draught, LOA and/or handling characteristics in restricted amounts of sea space; and</p> <p>b) para 94: how and to what extent the 10% growth in larger vessels in particular of Class 1 and 2 vessels has been reflected in the NRA Addendum amendments to the application NRA in the assessment of likelihood and consequence of hazard occurrence involving large commercial vessels in the vicinity of the proposed TEOW?</p>	<p>existing limitations by draught to vessels using the NESP PBS (specifically in the distance between the NE Spit Racon Buoy and the wind farm boundary and the sea bed bathymetry levels in this width and also through the Thames approaches via Princes Channel).</p> <p>The largest vessel seen to navigate this area is a 333m LOA vessel of 11.3m draught representing the Applicant's consideration of the 'larger vessel' by length and draught and also representing the more challenging spectrum of handling characteristics (due to general size in combination with cross sectional area and windage factors). It should be noted, with reference to LPC submissions, that the risk assessment reported to have been undertaken by LPC/PLA for vessels of this length places draught restrictions of potentially 9m to 10m. It is further noted that specific restrictions in terms of wind speed limits are understood to also be in place for these vessels (in the existing sea space) arising from that risk assessment. Thus (and as per the Applicant's submission at Action Point 9) the Applicant does not consider that specific restrictions in terms of wind speed limits are understood to high windage vessels) the handling characteristics of vessels currently using the area will not preclude them still using the area.</p> <p>b). Hazard likelihood scores for the baseline and inherent risk profile were determined for hazards 1-4 of the NRA A from the Hazard Workshop which was attended by IPs, with the remaining hazards scored by the Applicant. The likelihood scores for hazards associated with commercial vessels were uplifted by a further 10% to allow for future traffic growth, such that, for</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>example a hazard assessed by IP's to have a 1 in 30 year occurrence for the most likely outcome to occur, was increased to a likelihood of 1 in 27 years. This was applied to the following vessel hazard categories:</p> <ul style="list-style-type: none"> <li>• Commercial vessels – PLA Pilotage Class 1 and 2 vessels (including LNG)</li> <li>• Commercial vessels – PLA Pilotage Class 3 and 4 vessels (including DG)</li> <li>• Commercial vessels less than 90m</li> </ul> <p>Within the original NRA, the uplift to account for vessel traffic growth was included in the assessment of hazard likelihood for the baseline, inherent and residual risk profiles.</p>
3.12.12	The Applicant	<p><b>Allowances for traffic growth in collision risk modelling</b>                      In [REP5-071] POTL/LGPL submission, the HR Wallingford report asserts that collision modelling (on which the NRA relies) is deficient due to inadequate predictions of traffic growth. The Applicant has defended the figure of 10% traffic growth used for risk assessment generally, but would the Applicant also confirm in what way the collision risk modelling:</p>	<p>a). The Applicant notes that the CRM modelling was undertaken on Baseline AIS data and sought to characterise the ratio of collision likelihood between baseline risk profile (without TEOW) and inherent risk profile (with TEOW, but no additional risk controls). The CRM, which is based on real life AIS data for the baseline conditions, did not seek to assess the risk with a 10% allowance for future vessel growth. This was included within the original NRA Formal Safety Assessment hazard risk scoring, and applied separately within the NRA Addendum, both of which were informed by the change in collision likelihood assessed between the baseline and inherent outputs of the CRM.</p> <p>Further to this the CRM also included a sensitivity analysis for additional</p>



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>a) allowed for overall growth of traffic; and</p> <p>b) allowed for predicted relatively larger growth of larger vessel traffic as accepted in other evidence.</p>	<p>growth in Wind Farm Service Vessels.</p> <p>Notwithstanding the results of the original CRM, that relate to the application RLB and which do not take into account the SEZ, the Applicant has commissioned and further CRM study, independent of the original CRM study, to investigate the reduction in risk brought about by the SEZ. This was undertaken by Anatec Ltd, who have undertaken many such assessments and the study report is at Appendix 42 of this Deadline 6 submission.</p> <p>The results from the independent Anatec CRM demonstrate that baseline modelled collision return rate of 1 in 48 years is comparable to the 1 in 6 years return rate computed as part of the original NRA when it is considered that:</p> <ul style="list-style-type: none"> <li>• The Anatec study area is approximately a quarter the size of the original study area of the original NRA CRM.</li> <li>• Collisions involving anchored vessels are omitted from the Anatec CRM, which were included in the original CRM.</li> <li>• Collisions that only result in material damage are considered, whereas all collisions were considered in the original NRA CRM.</li> </ul> <p>The Anatec CRM showed that there was around a 4% increase in collision risk in the smaller study area assessed, attributable to the TEOW with SEZ in place, which is lower than the difference seen in the original CRM. This</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>difference is associated with:</p> <ul style="list-style-type: none"> <li>• The substantial reduction in in RLB between the PIER, on which the original study was conducted, and the application RLB, and then further reduced with the introduction of the SEZ, such that the extent of the TEOW in the Anatec study area is considerably reduced compared to the original NRA CRM.</li> <li>• Inclusion within the Anatec CRM results of embedded mitigation measures not considered within the original NRA CRM.</li> </ul> <p>The Anatec SEZ CRM did include allowance for 10% traffic growth, and showed that the 10% traffic growth results in a greater increase in risk, than that generated by the construction of the TEOW.</p> <p>b). The Applicant has presented evidence of a trend in the growth in vessel size, as demonstrated in the NRAA, based on a decline in ship arrivals at London Ports, whilst an increase in trade volumes is evident. The Applicant notes that as vessels increase in size they are more likely to utilise the SUNK pilot boarding station, and as such a decline may be seen at the NE Spit (possibly already seen in the pilotage transfer data presented in ExAQ3: 3.12.10 which shows a decline in transfers at NE Spit over the last 3 years).</p> <p>Further to this, evidence provided by the PLA, POTLL/DPWLG, demonstrates that whilst 333m vessels transited the inshore route, within the data</p>

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			<p>provided this seems to have occurred for a limited period around winter 2017/18, and as evidenced from the PLA Gate 1 Data it can be seen that vessels over 300m transited the inshore channel only between the 3<sup>rd</sup> January 2018 and 19<sup>th</sup> March, which only totalled seven transits by six individual vessels, and at no other time in the years' worth of data provided.</p> <p>Therefore within the context of the data provided and the basis that larger and deeper draught vessels would use the SUNK, no allowance has been considered necessary within the CRM, either provided as part of the original NRA, or in the subsequent CRM update undertaken independently by Anatec.</p>
3.12.13	The Applicant (the engagement of other IPs and Other Persons in the subject matter of this question is noted and	<p><b>Allowances for traffic growth in collision risk modelling: NPS Ports policy compatibility</b></p> <p>The Thames Estuary contains existing ports that meet the NSIP scale criteria for ports set out in s24 PA2008. NPS Ports envisages the location of new ports being determined by the market, but the fact that the Thames Estuary is a current and prospective location for future NSIP scale port development is demonstrated by the relatively recent development of London Gateway Port (which NPS Ports at paragraph 3.4.8 identifies as the</p>	<p>a) The Applicant notes this and can confirm that rather than historic trends the Applicant has sought to benchmark future growth against the PLA's Thames Vision which provides for considered growth. Further to this the Applicant has considered other forecasts including those put forward by the MMO as part of the South East marine spatial planning process which not only consider an increase in trade, but also assume that Thanet Extension is consented. These combined forecasts consider there to be a likely increase in cargo vessels, and a likely shift towards larger vessels to accommodate this. As confirmed during ISH8 by LGL/POTL where there is a shift to larger vessels these are unlikely to use the inshore route. The Applicant concurs with this observation and has noted in response to other ExQ3 that larger vessels are likely to utilise the SUNK for pilotage, as is currently the case. Whilst the Applicant notes this shift it also notes that overall volumes of smaller vessels may continue to grow and as such an overall uplift of 10% is</p>

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	<p>comments on the Applicant's response at Deadline 6 can be provided at Deadline 7)</p>	<p>largest capacity addition to UK container handling capacity in a single consent between 2005 and 2012) and more recently by the granting of development consent for the Tilbury 2 NSIP (which is now beyond its judicial challenge period and can be considered a concrete addition to consented capacity). London Gateway Port has been developed to support the potential addition of 4 further berths (a greater than doubling of current capacity). It is also possible to envisage additional NSIP-scale port development in the Thames beyond these two locations.</p> <p>NPS Ports paragraph 3.4.11 identifies that port '[c]apacity must be in the right place if it is to effectively and efficiently serve the needs of import and export markets. The location of ports in England and Wales has changed over time, in response to changes in global markets, in the size and nature of ships, and in the transport networks which support them.</p>	<p>considered to reflect future visions identified by local stakeholders as well as a change in the overall vessel mix likely to access the Thames estuary.</p> <p>b) The Applicant can confirm that the NPS Ports policy assumptions about port and traffic growth rates (NPS growth rates) are relevant insofar as they recognise an overall growth rate in trade by growth in for example container vessels. The Applicant has considered this, and as identified in response to a) has considered that whilst the overall trend to support the NPS growth rates is a transition to larger vessels, and therefore an overall reduction in vessel numbers, other vessel types are likely to increase. The growth rates identified in the MMO marine spatial plans also identify both a growth in trade and a shift towards larger vessels to service this growth. In view of this the Applicant remains of the view that for the study area in question, i.e. the inshore route in particular, a 10% growth is realistic and adequately accounts for the NPS growth rates of relevance to the study area. The wider region, in particular other approaches such as the SUNK, will likely increase in usage as vessel size trends require deeper water approaches, noting that the SUNK is inherently a narrower approach that requires traffic flow management.</p> <p>i) In light of the above it is the Applicant's view that the 10% traffic growth assumption used to inform the future baseline of the NRAA in this application sufficiently address the growth assumptions underpinning the NPS Ports growth rates. It is also of note that whilst the Applicant accepts the NPS identifies that it may not always be sound to refer to historic trends, the Applicant considers it would also not be appropriate to overlook historic</p>

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		<p>Currently, the largest container and ro-ro terminals are in the South East...'. Paragraph 3.4.12 identifies that it is in the national interest for there to be competition between ports, which drives efficiency and lowers costs. This means that port development 'requires sufficient spare capacity to ensure real choices for port users. It also requires ports to operate at efficient levels, which is not the same as operating at full physical capacity.' Spare ports capacity is viewed as a desirable contribution towards the decongestion of land transport routes through coastal shipping (paragraph 3.4.14) and the provision of national logistics resilience (3.4.16).</p> <p>Drawing these factors together, NPS Ports (paragraph 3.4.16) concludes as follows: '[e]xcluding the possibility of providing additional capacity for the movement of goods and commodities through new port development would</p>	<p>trends to give context and understanding to a future trend analysis. In this context the Applicant notes that the most recent quarterly trend note for ports, published by the Department for Transport (PORT0502: UK major port traffic, total tonnage and units, by port: quarterly from 2009) highlights that the overall % change in trade (reference to tonnage) between 2009 and 2018 is 7% for London; but that the change between Q4 2017 and Q4 2018 is 11%. The growth between 2009 and 2018 should also be considered in the context of the depression of 2008/9, the recovery from which would be expected to be shown as a greater increase between these years than may otherwise be expected. The decline in tonnage for major ports associated with the depression is clearly shown in the Figure 43 of the NRA. The Applicant therefore acknowledges that there has been a recent spike in trade tonnage, but benchmarks this against a decade of data to give an overall 10% predicted increase (noting that increases in tonnage does not directly correlate with increases in vessel numbers). This is also important to contextualise regionally through reference to Felixstowe, which has seen a reduction in 12% overall and a spiked decline of 15% between Q4 2017-and Q4 2018. This is important to note as London Gateway in particular have identified during examination that there has been a recent significant shift in trade from Felixstowe to London Gateway as a result of Gateway winning a suite of clients from Felixstowe. This therefore highlights a shift in shipping as a result of competition, but does not indicate an overall 10% increase in vessel traffic to the region. The Applicant has therefore sought to identify a balance between future trends as a result of increased port capacity and vessel movements against future trends in inter port competition. In this</p>

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		<p>be to accept limits on economic growth and on the price, choice and availability of goods imported into the UK and available to consumers. It would also limit the local and regional economic benefits that new developments might bring. Such an outcome would be strongly against the public interest.' Paragraph 3.5 urges NSIP decision-makers to accept what amounts to an urgent need for new ports capacity and normally to presume in favour of its development.</p> <p>The port capacity demand forecast used in NPS Ports (paragraph 3.4.3) (MDS Transmodal central forecast for Great Britain 2007: 2005 to 2030) is acknowledged not to have factored in the growth effects of the post-2008 economic downturn. Equally however, it is acknowledged not to take into account other new drivers for additional port capacity, including offshore wind farm development and servicing. NPS Ports</p>	<p>context the Applicant considers the 10% future baseline to be appropriate. ii) and iii) in light of the response to i) the Applicant has no response to questions ii) and iii) at this stage but will respond where necessary to IP submissions.</p> <p>d) The Applicant has undertaken an assessment of future traffic profiles that are based on IP visions for the region. Further to this the Applicant has undertaken a detailed quantitative and qualitative analysis of the required searoom to ensure not only existing activities can continue, with any predicted impact minimised, but by virtue of providing for consecutive transit of the largest vessels (4*333m vessels, noting only 1 has passed the inshore route in 21 months as evidence in Appendix 27 of the Applicant's D4C submission) the Applicant has provided for a future baseline which comprises concurrent passage of larger vessels than currently regularly transit the inshore routes. In light of this the Applicant's evidenced position is that the proposed development will not form a constraint on shipping traffic capacity that would limit the ability of existing and consented NSIP scale ports to contribute effectively to meeting the national need for port capacity assessed in NPS Ports. The Applicant is unaware of any other prospective NSIP scale ports that would be material to the proposed Thanet Extension project either with regards cumulative effects, or the ability of the region to meet trade forecasts.</p>

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		<p>suggests that the net effect of the economic downturn on this forecast should be considered to be a delay but not ultimately a reduction in the eventual levels of demand for port capacity, in particular for unitised goods (paragraphs 3.4.4, 3.4.5). Summarising the implications of the NPS Ports forecast for growth by main cargo type and breaking these figures down into linear annualized growth with no allowance for economic cycles suggests the following:</p> <p><b>Forecast ports capacity growth by cargo type to 2030</b></p> <table border="1" data-bbox="495 1037 1055 1149"> <thead> <tr> <th></th> <th>25 yrs</th> <th>Annual</th> <th>25 yrs %</th> </tr> </thead> <tbody> <tr> <td>Containers (million teu)</td> <td>13</td> <td>0.52</td> <td>182</td> </tr> <tr> <td>Ro-Ro (million tonnes)</td> <td>85</td> <td>3.40</td> <td>101</td> </tr> <tr> <td>Non-unitised (million tonnes)</td> <td>18</td> <td>0.72</td> <td>4</td> </tr> </tbody> </table> <p>a) NPS Ports implies that the combination of a geographic shift in demand for port capacity towards the south east together with forecast GB growth rates for ports capacity when taken together suggest that trends</p>		25 yrs	Annual	25 yrs %	Containers (million teu)	13	0.52	182	Ro-Ro (million tonnes)	85	3.40	101	Non-unitised (million tonnes)	18	0.72	4	
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		<p>extrapolated from historic traffic on the Thames Estuary may not provide a sound basis for forward planning for ports capacity and effects of ports going forward. Please set out your observations on this.</p> <p>b) Are the NPS Ports policy assumptions about port and traffic growth rates (NPS growth rates) relevant to the adoption of growth assumptions for the NRA and NRAA for this Application and if not, why not?</p> <p>c) If the NPS growth rates are relevant, in the policy context around the need for ports development set by NPS Ports, acknowledging the Thames Estuary to be an existing and a prospective location for NSIP scale port development:</p> <ul style="list-style-type: none"> <li>i. does the 10% traffic growth assumption used for NRA purposes in this application sufficiently address the growth assumptions underpinning NPS Ports as</li> </ul>	



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>summarized above;</p> <p>ii. if it does not, could it reasonably be concluded that waters around the development would experience higher traffic levels than those included in the NRA and NRAA; and</p> <p>iii. if (ii) is the case, do the NRA and NRAA provide a sound basis on which to assess the effects on navigation risk of the proposed development in a context where NPS Ports compliant use and development continues to occur?</p> <p>d) Are there circumstances in which the proposed development could form a constraint on shipping traffic capacity that would limit the ability of existing and/ or prospective NSIP scale ports to contribute effectively to meeting the national need for port capacity assessed in NPS Ports?</p>	
3.12.14	Trinity House (THLS)	<p><b>Effects on visual navigation</b></p> <p>Please would THLS comment on the</p>	<p>The Applicant notes that this question is for Trinity House, but has the following observations to make:</p> <p>a) The Applicant considers the proposed wind farm is not considered to have</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>following statements in the NRA:</p> <p>a) the NRA summary that <i>“the positioning of the wind farm is not considered to have a significant effect on visual navigation...”</i> [APP- 089] NRA p129 para 17.</p> <p>b) the conclusions of the NRA that <i>“markings of the arrays may diminish the effectiveness of the major navigational lights adjacent to the site”?</i> [APP-089] NRA p93 para 7.8.2.</p> <p>c) [REP1-012] Applicant's Response to [RR-044] ESL-4 Para. 7.8.2 <i>“...Offshore wind farms provide landmarks for vessels and are used as part of the general navigation toolkit.”</i> and Para 7.9.6 <i>“A review of previous studies undertaken and discussions with stakeholders on the impacts of the existing wind farm have not identified any significant adverse impacts which may increase the risk of an accident to [sic] shore based or ship board communications, radar or</i></p>	<p>a significant negative effect on visual navigation. The presence of a windfarm, particularly in the navigationally challenging and shallow waters of the Thames Estuary, would have a positive effect in that it provides a large, unambiguous and conspicuous visual (and radar) reference for any mariner in establishing his location. In modern times, satellite navigation systems largely tend to diminish the importance of visual references as the primary navigation source, but as a source of absolute positional truth the importance of a windfarm as an aid to navigation cannot be denied.</p> <p>b) The Applicant notes that the characteristics of any array lighting will have been specifically designed and mandated by Trinity House so as not to present any possibility of confusion with any nearby navigational lights.</p> <p>c) A wind farm presents a unique and unmistakable navigationally significant mark both visually and by radar. Even if two farms are proximate to each other, the shape of the arrays by radar and their visual appearance are always such that they are quickly and easily distinguishable and thus gives the mariner a unique and distinct navigational point.</p> <p>With regard to radar shadows, any fixed object will cast a radar shadow but the wide spacing (over 100m apart) and low density of the arrays will have a relatively limited effect against a properly set up and well maintained 3cm or 10cm band radar (typical frequencies for marine band navigation radars).</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<i>positioning systems."</i>	
3.12.15	Port of Tilbury London Ltd / London Gateway Port Ltd (POTL/LGPL), Port of London Authority / Estuary Services Ltd (PLA) and London Pilots Council (LPC)	<p><b>Future growth of shipping traffic</b>                      In [REP5-012] D5 Appendix 7 para 81 the Applicant notes that Mr Crockett for POTL/LGPL accepted at ISH8 a figure of 10% growth for the inshore route and at para 92 that an increase in "larger vessels which would necessarily use the ...SUNK pilot boarding ground"; and at para 98 the Applicant states "...as vessel size increases use of SUNK over NE Spit boarding grounds would therefore be apparent...".</p> <p>Would POTL/LGPL, PLA and LPC:                      a) confirm this understanding of 10% growth of use of the inshore route; and                      b) provide a reasoned estimate for growth of traffic using the NE Spit Pilot Boarding Diamond; and                      c) with reference to their submissions at D5, confirm whether larger vessels would necessarily use the SUNK</p>	<p>The Applicant notes this question is directed to POTL/LGPL, PLA and LPC, who have yet to provide any detailed or substantive analysis on growth forecasts for the TEOW Study area, and would like to note the following Applicant clarifications to the EXA questions.</p> <p><i>a) confirm this understanding of 10% growth of use of the inshore route; and</i></p> <p>As noted by the ExA this was confirmed by HR Wallingford representing the IPs at ISH8 as is recorded in session 3 of 5 at approximately 1:28:00.</p> <p><i>b) provide a reasoned estimate for growth of traffic using the NE Spit Pilot Boarding Diamond; and</i></p> <p>The Applicant notes that available data on usage of the NE Spit Pilot Diamond is limited, but based on response to ExQ3 3.12.10, that pilot transfers at NE Spit have declined over the last 3 years, despite increases in trade volumes occurring for the PLA. As such the Applicant considers that it is unlikely that there would be any increase in vessel traffic at the NE Spit Pilot Boarding Diamond. The PLA have, at ISH8, noted an 11% increase in pilotage operations during 18/19. This increase (if sustained throughout 2019 which is not certain) is offset by declines during previous years and as such growth may be considered to be neutral the last 3 years</p> <p><i>c) with reference to their submissions at D5, confirm whether larger vessels</i></p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>approach to the ports; and</p> <p>d) what net difference is likely to be made to the overall traffic movements to and from the Ports of London and Sheerness over the life of the TEOW project due to increase in ship movements to and from the PoT and DPWLG; and</p> <p>e) provide evidence of what difference to the volume and profile of traffic using NE Spit PBD (whether or not via the inshore route) would be likely if a capital dredge were made of North Edinburgh Channel or Fisherman's Gat (as have been stated in evidence to this Examination as being under consideration although not as yet as firm project proposals), in particular the likely growth in Class 1 and 2 and other large vessels; and</p> <p>f) what might be a likely range of the quantum of economic and commercial</p>	<p><i>would necessarily use the SUNK approach to the ports; and</i></p> <p>The Applicant notes that vessels greater than 7.5m do not have to pay a surcharge for pilotage for boarding a pilot at the SUNK compared to the NE Spit, and therefore it is considered that the PLA have prioritised use of the SUNK for vessels with draughts greater than 7.5m. It is considered, that whilst vessels greater than 7.5m and up to around 10m draught do use the NE Spit and Princess Channel, this is primarily for the convenience and profitability of both the pilot service (as the vessel transit duration is less the time on board for pilots is less and therefore their utilisation can be higher) and ESL's pilot launch service which can service the vessel (at the SUNK an alternative, service is used which is not owned / operated by the PLA). Therefore, it is evident that efficiency, convenience and profitability are directing vessels that would otherwise use the SUNK to use the NE Spit.</p> <p><i>d) what net difference is likely to be made to the overall traffic movements to and from the Ports of London and Sheerness over the life of the TEOW project due to increase in ship movements to and from the PoT and DPWLG; and</i></p> <p>The Applicant notes that analysis presented in the NRA A shows that whilst trade increased at the PLA since 2004, ship arrivals have actually decreased significantly. Therefore, the Applicant does not consider that there will be an increase in ship arrivals, but that there will be an increase in trade, which will be accommodated by larger vessels which are unlikely to transit in the</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>effects on the efficient use of tidally constrained berths at the London and Sheerness ports by adding approximately an hour's inbound steaming time should masters carrying time-critical or time-sensitive cargo decide (based on "dynamic risk assessment") to divert passage around the east of the Thanet WF and board a pilot at NE Spit instead of otherwise taking the shorter route to the NESP pilot diamond?</p>	<p>vicinity of the TEOW. The Applicant has utilised a 10% growth figure which reflects a balance of a ten year trend in growth (7%) against recent peaks in growth (11%) for the Port of London as noted in ExQ3.12.13, which it considers to be precautionary.</p> <p>e)As noted in the Applicant's more comprehensive response to EXQ 3.12.8 on this matter there does not appear to be any proof of a project or plan for capital dredge of the North Edinburgh Channel or the Fisherman's Gat (and certainly to the extent and depth as indicated by LPC in their submissions to date) and as such these options remain no more than possible aspirations noting it would be the PLA who would be responsible for their implementation and not LPC.</p> <p>f) Whilst no detailed data is available on "carrying time-critical or time-sensitive cargo" the Applicant notes that the presence of the TEOW will be a factor in the passage plan of any vessel engaged on trade to from the London and Sheerness Ports, indeed this will be well known long in advance of any actual passage, and as such the Applicant would note that its presence should be planned for. Further to this, it is understood perishable cargos are generally carried on smaller feeder container vessels of around 130-180m in length. The vessel noted at the site visit for POTLL as a "time critical vessel" was the <i>Ensemble</i> a 134.6m container vessel, which was not tidally contained - it is the case that time critical vessels are commonly not</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p>tidally constrained.</p> <p>The Applicant also noted in the Statement of Evidence [REP4C-003] that it is a frequent occurrence for vessels to arrive at a port early and stooage or wait around prior to entry – primarily due to berth, pilot or water depth availability. Indeed, at the site visit on 15<sup>th</sup> April to DPWLG, three vessels were alongside and two vessels out of the three arrived at the port approaches and waited, even though MetOcean characteristics were not challenging. The premise therefore that an hours' additional steaming time could have anything, but negligible consequences is not accepted by the Applicant, who notes the vessel transits are dynamic and affected by a number of factors, which are considered in the round when passage planning – the least of which would be the proposed TEOW. Notwithstanding this the Applicant has provided a contextual consideration of economic effects at Annex C to Appendix 26 of this Deadline 6 submission.</p>
3.12.16	Port of Sheerness Ltd (PSL)	<p><b>Effects on navigation-shipping routes adjacent to the development</b></p> <p>In the Applicant's Response to [RR-011] Port of Sheerness Ltd PSLM-1, it is stated that:</p> <p><i>a) "All existing routes remain navigable by existing vessel traffic and potential</i></p>	<p>The Applicant notes this question is for the Port of Sheerness and will respond to any representation made in due course.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p><i>changes to these routes (in terms of time and distance) that may arise as a result of the proposed project have been identified and assessed. The conclusions are presented in Table 10 of the NRA (PINS Ref APP-089/ Application Re 6.4.10.1) and are that the changes are considered minimal."</i></p> <p>b) <i>"The changes to routing are considered to be minimal with no alteration to shipping lanes/routes beyond a reduction in the route between the Array and land to the south-west; this change is in an area with significantly less traffic than other routes within the immediate area. As such it is not expected that there would be any significant effect on routing of traffic."</i></p> <p>Does Port of Sheerness have any further comments to make on the development proposal in relation to shipping traffic and potential commercial or economic consequences of any effects to shipping and port operations?</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
3.12.17	The Applicant	<p><b>Effectiveness of stakeholder consultation on risk assessment</b>                      The D5 submission by MCA [REP5-063], as independent observer at the workshop held on 29 March 2019, notes the very tight time period available for the revised risk assessment and that:</p> <p>a) risk control measures were not discussed at this workshop;</p> <p>b) during the teleconference on 2 April none of the scores were discussed but IPs raised concerns on the suitability of the hazard list;</p> <p>c) IPs had only 3 working days after receiving the NRA Addendum to review the document and provide comments;</p> <p>d) Risk scores deemed by the Applicant to be tolerable with mitigation have not been agreed between the Applicant and IPs.</p> <p>Would the Applicant comment on these</p>	<p>a) The Applicant Notes the MCA response, but would point out that, whilst risk controls were not discussed in detail, the NRA risk controls were highlighted in the Hazard Workshop Presentation (slide extract presented below, the workshop presentation was also emailed to all IP's following the workshop), and that the risk control measures were identified at the outset of the workshop with a direct question put to IPs requesting confirmation if there were any concerns or addition risk control measures that should be considered. The response provided is recorded within the published minutes (Annex C to Appendix 1 of the Applicants D4B submission) which confirm that there were no matters arising from the risk controls agenda item. The progress of the hazard scoring was slow, due to the extensive discussion on each individual hazard score, along with repeated discussion on risk assessment methodology (which was not unusual given that not all attendees have statutory requirements to conduct such risk assessments. It is of note that other hazard workshops, such as Tilbury2 have not achieved any scores at workshops despite taking a similar grouping approach (i.e. a large vessel with <i>any</i> other vessel) and being attended solely by technical experts inclusive of the PoT harbour master and PLA harbour master. As such the presence of non experts is expected to inherently and understandably take longer and result in a more detailed discussion., In light of this whilst the assessment workshop did not progress sufficiently swiftly in order to make an assessment of the residual risk score – which is that risk score with the additional adopted risk controls in place it should</p>



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:																																																															
		points?	<p>be considered not uncommon for basic parameters to be agreed at a workshop before then circulating the scores and outputs, indeed this was approach undertaken for the Tilbury2 NRA. The slide provided to the IPs, further to the inclusion of the 'Hazard workshop pack' at Annex D to Appendix 1 of the Applicants D4C submission.</p> <div data-bbox="1070 635 2063 1193" style="border: 1px solid black; padding: 10px;"> <h3 style="text-align: center;">Methodology: Step 3 Identify Controls</h3> <ul style="list-style-type: none"> <li>• Identify Need for Controls Based on:</li> <li>• Existing Controls</li> </ul> <div style="display: flex; justify-content: space-around;"> <table border="1" data-bbox="1196 858 1406 938"> <thead> <tr> <th>Risk Number</th> <th>Risk</th> </tr> </thead> <tbody> <tr> <td>01a-1.0</td> <td>Navigation</td> </tr> <tr> <td>21a-1.0</td> <td>Low Risk</td> </tr> <tr> <td>41a-1.0</td> <td>At Low or Reasonably Practicable</td> </tr> <tr> <td>71a-1.0</td> <td>Significant Risk</td> </tr> <tr> <td>91a-1.0</td> <td>High Risk</td> </tr> </tbody> </table> <table border="1" data-bbox="1570 858 2009 1126"> <thead> <tr> <th>#</th> <th>Risk Control</th> <th>NRA Definition</th> </tr> </thead> <tbody> <tr><td>1</td><td>Training</td><td>Embedded Risk Controls</td></tr> <tr><td>2</td><td>ERCOP</td><td>Embedded Risk Controls</td></tr> <tr><td>3</td><td>Promulgation/Ntms</td><td>Embedded Risk Controls</td></tr> <tr><td>4</td><td>Reduction in RIB at PIER stage</td><td>Embedded Risk Controls</td></tr> <tr><td>5</td><td>Aids to Navigation Plan</td><td>Embedded Risk Controls</td></tr> <tr><td>6</td><td>Blade Clearance</td><td>Embedded Risk Controls</td></tr> <tr><td>7</td><td>Continuous Monitoring</td><td>Embedded Risk Controls</td></tr> <tr><td>8</td><td>Sufficient Cable/Burial Protection</td><td>Embedded Risk Controls</td></tr> <tr><td>9</td><td>Cable Exclusion Area</td><td>Embedded Risk Controls</td></tr> <tr><td>10</td><td>Coordination with Leisure/Fishing</td><td>Additional - Recommended</td></tr> <tr><td>11</td><td>Maintain Lines of Orientation</td><td>Additional - Recommended</td></tr> <tr><td>12</td><td>Relocation of Buoyage</td><td>Additional - Recommended</td></tr> <tr><td>13</td><td>Construction and Post-Construction Monitoring</td><td>Additional Not Recommended</td></tr> <tr><td>14</td><td>Relocation of Pilot Boarding Area</td><td>Additional Not Recommended</td></tr> <tr><td>15</td><td>Inc. Co-ordination &amp; Sit. Awareness</td><td>Additional Not Recommended</td></tr> <tr><td>16</td><td>Training Pilots, ESL &amp; VTS</td><td>Additional Not Recommended</td></tr> </tbody> </table> </div> </div> <p>b) At the close of the Hazard Workshop, the Applicant offered to provide draft risk scores for the remaining hazards for the baseline and inherent risk profiles, and stated that individual IP's could also draft up their own scores (the Applicant provided blank scoring</p>	Risk Number	Risk	01a-1.0	Navigation	21a-1.0	Low Risk	41a-1.0	At Low or Reasonably Practicable	71a-1.0	Significant Risk	91a-1.0	High Risk	#	Risk Control	NRA Definition	1	Training	Embedded Risk Controls	2	ERCOP	Embedded Risk Controls	3	Promulgation/Ntms	Embedded Risk Controls	4	Reduction in RIB at PIER stage	Embedded Risk Controls	5	Aids to Navigation Plan	Embedded Risk Controls	6	Blade Clearance	Embedded Risk Controls	7	Continuous Monitoring	Embedded Risk Controls	8	Sufficient Cable/Burial Protection	Embedded Risk Controls	9	Cable Exclusion Area	Embedded Risk Controls	10	Coordination with Leisure/Fishing	Additional - Recommended	11	Maintain Lines of Orientation	Additional - Recommended	12	Relocation of Buoyage	Additional - Recommended	13	Construction and Post-Construction Monitoring	Additional Not Recommended	14	Relocation of Pilot Boarding Area	Additional Not Recommended	15	Inc. Co-ordination & Sit. Awareness	Additional Not Recommended	16	Training Pilots, ESL & VTS	Additional Not Recommended
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			<p>sheets to all IPs at the hazard workshop for such a purpose). This is not uncommon, and indeed was the approach adopted for Tilbury2 at which PLA, PoT were present but no other stakeholders, such as other Thames Estuary operators including London Gateway, or fishermen were present. The Applicant, between the end of the hazard workshop conducted on Friday 29<sup>th</sup> May and Monday 1<sup>st</sup> April, scored the remaining 14 hazards (in line with the theme of scoring for hazards 1-4) , and issued them as drafts at 13:47 on 1<sup>st</sup> April in advance of the teleconference scheduled for 15:00 on the 2<sup>nd</sup> April. The Applicant requested that any updates to hazard scores be sent back to the Applicant in the provided excel template (which was sent out with the draft hazard scores entered to all IP's) – no draft scores were received by the Applicant.</p> <p>The purpose of the teleconference was to give the IP's an opportunity to talk through the draft hazard scores. However, at the outset of the call PLA / ESL and LPC, stated that they needed time to review the agreed scores as generated at the Hazard Workshop (with all IP's in attendance), and were not in a position to address the draft scores entered for Hazards 5-18. No other stakeholder volunteered to provide any risk scoring for the remaining 5-18 hazards.</p> <p>As such no other IP's provided any feedback to individual hazard scores provided by the client, though some general statements were provided, and most IPS stated that they would rely on PLA / ESL and</p>

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			<p>LPC for the hazards scoring. Also some comments were provided by POTLL / DWPLG on the consequence score for most likely commercial vessel hazards which were addressed in the NRA A.</p> <p>Subsequently to the teleconference, the PLA / ESL and LPC, issued a risk assessment at Deadline 4C, scored for all hazards, which showed very close correlation to the Applicant NRA Addendum hazard scoring, and demonstrated hazards were scored in an ALARP zone – though it is noted that risk scoring criteria were changed by the PLA compared to their standard approach as available on the PLA website at <a href="https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx">https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx</a> and at Annex B to this Deadline 6 submission, noting that the accompanying web page was changed post the 19<sup>th</sup> May 2019 to remove reference to the standard approach and recommended template. It is the Applicants understanding that the above risk assessment template is the alternative reduced algorithm assessment methodology referred to by the PLA at ISH8, although it is unclear why the methodology and definitions of ALARP have been altered as this appears to directly contravene PLA's risk assessment guidelines which requests operators utilise similar assessment methodologies to allow a seamless connect with the wider PLA SMS. This approach is evidenced in the Tilbury2 NRA which aligns with the above risk assessment template and concludes "it may be considered that a hazard categorised as Moderate, Minor, or Slight is already As</p>

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			<p>Low As Reasonably Practicable (ALARP)". The need for a directly comparable and seamless approach to NRA is also highlighted in the Tilbury2 NRA which confirms:</p> <p><i>. "This NRA is limited to the hazards and risks associated with the design and operation of the T2 berths only – not the hazards and risks associated with the transit of T2 ships in the Thames Estuary as they transit between open sea and Tilbury. This is because these hazards and risks have already been subject to a robust NRA by the PLA as part of their wider responsibilities as a Statutory Harbour Authority (SHA) and, by virtue of being the pilotage service, the Competent Harbour Authority (CHA) for these waters."</i> The methodology adopted was therefore familiar to the majority of technical attendees, though the Applicant accepts that this may not have been the case for all parties and tried to accommodate this through detailed discussion.</p> <p>c) The Applicant notes the limited time available, protracted discussions at the hazard workshop, and changes in agreed hazard scoring by IP's. However, the Applicant did issue an interim NRA Addendum on Wednesday 3<sup>rd</sup> April and sought to provide as much time as practical to IPs.</p> <p>d) The Applicants notes that the tolerability of risk has not been agreed with all IP's, however it notes that,</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<ul style="list-style-type: none"> <li>• Risk scores are consistent with:                             <ul style="list-style-type: none"> <li>○ Other assessments undertaken within IP's jurisdictions, which were considered tolerable – e.g. Tilbury 2.</li> <li>○ The PLS 2015 NE Spit NRA which was considered tolerable.</li> <li>○ The Hazman II risk assessment system has been used by the PLA since early 2000's and the same tolerability levels have been embedded within the PLA since its adoption as were used by the Applicant in both the NRA and NRAA.</li> <li>○ The PLA re-scoring of the hazards undertaken following the hazard workshop .</li> </ul> </li> </ul>
3.12.18	Port of Tilbury London Ltd, London Gateway Port Ltd (PoTL/LGPL)	<p><b>Answers given at ISH8 by POTL/LGPL Expert witness</b></p> <p>In [REP5-018] at para 76, the Applicant states that in questioning of expert witness Mr Vincent Crockett {VC}, "<i>VC accepted that all other input scores had been agreed at the workshop</i>" and "<i>there were no comments on the risk controls</i>".</p> <ul style="list-style-type: none"> <li>• Would PoTL/LGPL comment on this</li> </ul>	<p>The Applicant can confirm that Mr Crockett agreed the categorisation of vessels to have been agreed at the workshop although noted that the preference of POTL/LGPL would have been for a more granular approach, this appears in the recording of ISH8, part 3 of 5 at 1:18:00. Following this Mr Crockett at 1:34:40 agreed that all other input scores were agreed including baseline and inherent scores.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		record of answers given?	
3.12.19	Port of London Authority (PLA); Maritime and Coastguard Agency (MCA); Trinity House (THLS)	<p><b>Embedded and additional risk controls in NRA and NRAA</b></p> <p>In [REP5-012] D5 Appendix 7 para 81 the Applicant states that <i>“the embedded and additional risk controls identified as part of the Addendum NRA do not need managing by the PLA”</i> and at paras 82 and 90 commits to 2 lines of orientation that would ordinarily be left to later confirmation with MCA and TH.</p> <p>Would the PLA, MCA and THLS comment on:</p> <p>a) whether they agree with this statement; and</p> <p>b) whether it addresses the concerns raised in earlier representations; and</p> <p>c) whether there are other considerations of involvement by IPs in maintaining the effectiveness of such embedded or additional risk controls that should be considered by the ExA; and</p>	<p>The Applicant will respond in due course to Port of London Authority (PLA); Maritime and Coastguard Agency (MCA); Trinity House (THLS) responses.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>d) whether the commitment made by the Applicant to 2 lines of orientation (thereby proposed as embedded rather than additional mitigation) changes the IPs' view on the "double-counting" of embedded and additional mitigation?</p>	
3.12.20	<p>Port of London Authority (PLA); Maritime and Coastguard Agency (MCA); Trinity House (THLS); POTL/LGPL and PLA and London Pilot Council</p>	<p><b>Textual changes to the NRAA made at deadline 5</b>                      Would the IPs comment on the recent textual changes in regard to traffic projections made at Deadline 5 to the NRAA (rev B) [REP5-039] insofar as relevant to this DCO application:</p> <p>a) Para 121: "...slightly downward trend in chargeable ship arrivals over recent years..." albeit "...PLA figures do not include other estuary ports...";</p> <p>b) Para 122: "...precautionary 10% uplift in hazard likelihood has been applied...in line with other OWF NRA assessments...and is reflected in the Tilbury 2 NRA...";</p>	<p>The Applicant will respond in due course to Port of London Authority (PLA); Maritime and Coastguard Agency (MCA); Trinity House (THLS); POTL/LGPL and PLA and London Pilot Council (LPC); Thanet Fisherman's Association (TFA); UK responses.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
	(LPC); Thanet Fisherman's Association (TFA); UK Chamber of Shipping (UkCoS); Port of Sheerness Ltd (PSL)	<p>c) Para 123: <i>"...It is important to note ...[that the MMO] future analysis for the region assumed that overall freight tonnage would increase, by between 1% and 2% per [sic] the trend for larger vessels would continue, and that the Thanet Extension OWF would be consented."</i></p> <p>d) Para 124: downward or static trend for recreational and fishing activity; and</p> <p>e) Para 125: additional WSV (traffic) associated with the TEOW; <i>"WSV engaged on other projects within the Thames Estuary and transiting through the study area are anticipated to remain largely the same...based on consultation."</i></p>	
3.12.21	Port of London Authority (PLA); Maritime	<p><b>Additions to the NRAA made at deadline 5</b></p> <p>Would the IPs comment on the recent textual changes in regard to risk assessment made at Deadline 5 to the</p>	<p>The Applicant will respond in due course to Port of London Authority (PLA); Maritime and Coastguard Agency (MCA); Trinity House (THLS); POTL/LGPL and PLA and London Pilot Council (LPC); Thanet Fisherman's Association (TFA); UK Chamber of Shipping (UkCoS); Port of Sheerness Ltd (PSL) responses.</p>

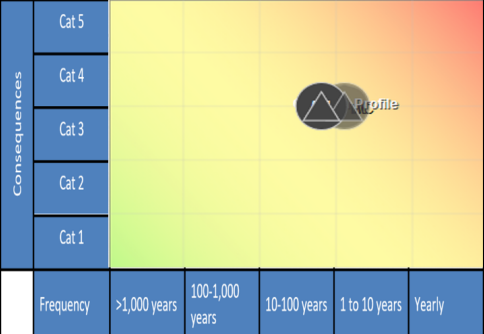


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	and Coastguard Agency (MCA); Trinity House (THLS); POTL/LGPL and PLA and London Pilot Council (LPC); Thanet Fisherman's Association (TFA); UK Chamber of Shipping (UkCoS); Port of	NRAA (rev B) [REP5-039]: a) Para 135: Additional Risk Control: Enhanced promulgation of information (redrafted); Shipping and Navigation Liaison Group Terms of reference (redrafted); Post-consent Monitoring (redrafted); Enhanced optimisation of TEOW line of orientation etc (redrafted); Aids to Navigation etc (redrafted); b) Paras 141 to 144 and Table 19: New insertion in rev B; c) Para 145: "...the assessment of cost benefit in the original NRA remains valid." d) Para 146: Summary results of the hazard workshop (New Annex C to Deadline 5 submission) "...ID's 4-18 [sic]...were updated based on IP comments..."; e) Ranked Hazard list (now Table 20) changed to omit columns for individual	

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	Sheerness Ltd (PSL)	<p>baseline and inherent risk scoring with colour grading; the highest inherent risk score now being 4.80 (previously 4.34); residual risk scores added to rev B.</p> <p>f) Para 147: hazards with baseline risk ALARP-rated now seven in number (previously four in number);</p> <p>g) Paras 152-154: New paras on hazard likelihood including a return rate for all commercial vessel collisions of 1 in 10 years to reflect stakeholder concerns;</p> <p>h) Para 157: hazards with inherent risk ALARP-rated now eight in number (previously four in number);</p> <p>i) Paras 158-160: New text on residual risk assessed;</p> <p>j) Paras 169-173: New Text on Risk Control Validation;</p> <p>k) Para 174: Added conclusions text on</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>hazard consequence scores provided by PLA/ESL at D4C "...which has been used to update some hazard consequence scores."</p> <p>l) Para 178: Added text on feedback from DPWLG on risk consequence scores; and m) Para 184: New text varying the Recommendations made in the revA NRA Addendum</p>	
3.12.22	The Applicant	<p><b>Risk scoring detail (NRA ID12 example)</b> In [REP1-008] Applicant's supplementary note on NRA process, in the Property category of this Hazard ID12 "Collision between two large commercial vessels", with the "Most Likely" outcome of this hazard ("<i>low speed collision, likely to be glancing blow, with limited consequence values...</i>") the HAZMAN algorithm produces a score of 5.24 apparently with a 1 in 15 year return rate likelihood compared with a score of 5.92 when the return rate drops to 1 in 10 years.</p> <ul style="list-style-type: none"> <li>• Would the Applicant please explain</li> </ul>	<p>The reasons that a risk score may be lower than may be intuitively anticipated is associated with the matrix, which due to the need to account for all hazard likelihoods (up to greater than a 1 in 1000 year event), uses a logarithmic scale for the categories. The following provides further context with regards the specific matrices used to inform maritime risk assessments.</p> <p>The generation of risk scores is related to the risk matrix, and within the context of the question, it does not matter which specific matrix is used, in that all have common principles, which account for the explanation the ExA are seeking as to why when likelihood is changed, to a level which may be perceived to be significant, this does not appear to significantly change the risk scores.</p> <p>The reason is that risk matrices need to be able to provide for any combination of hazard likelihood and hazard consequence, and when</p>

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		<p>how and why this rise in return rate of 50% (10 years instead of 15 years) produces via the algorithm an increase of 12.9% in risk rating.</p>	<p>related to maritime navigation risk assessment risk matrices need to be able to accommodate a range of hazards. The range may be from lower severity hazards that may occur more frequently (typically associated with most likely hazards outcomes), to catastrophic severity hazards which occur less frequently (typically associated with worst credible hazard) outcomes. Risk matrices need therefore to be able to accommodate these polar ranges of hazards on the same risk matrix and do so based on combining of two factors:</p> <ol style="list-style-type: none"> <li>1. The likelihood of a hazard occurring.</li> <li>2. The consequences of a hazard occurring.</li> </ol> <p>For the sake of clarity, it does not matter within the context of generating a hazard score whether it refers to a Baseline, Inherent or Residual assessment of risk, or whether a final score is generated by aggregating individual consequence category (e.g. People, Property, Environment or Stakeholder / Business categories) risk score – it is the matrix that combines the two factors to generate a risk scores.</p> <p>The matrix used for the NRA and the NRA A, is presented below and in terms of being a 5 by 5 matrix, is standard within the industry, and is as used by the PLA for their detailed port wide risk assessment – not as used in the PLA Risk Assessment Proforma (found at <a href="https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx">https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx</a>) which is identified as a simple risk assessment proforma.</p>

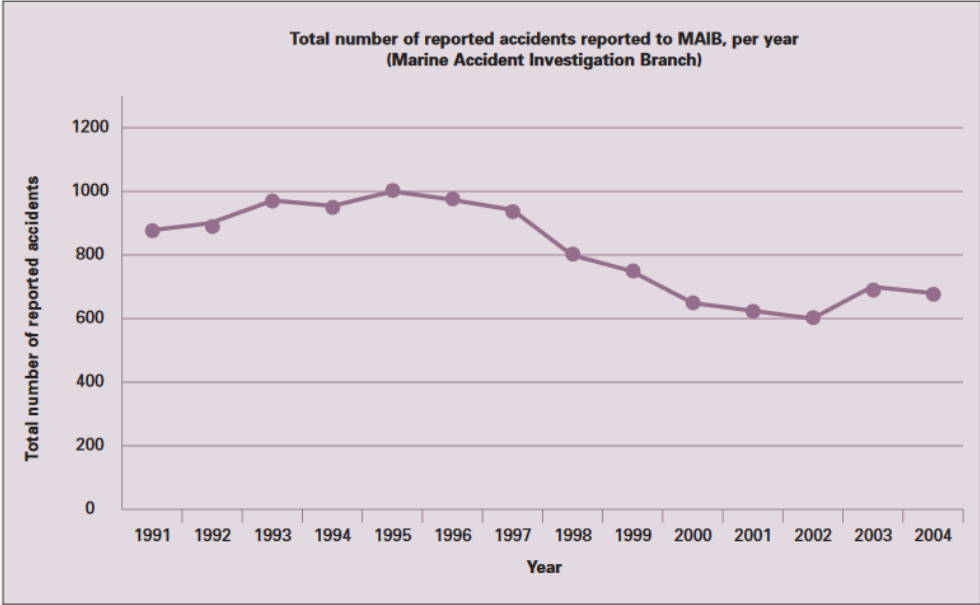
PINS Question number:	Question is addressed to:	Question:	Applicant's Response:																																					
			<p>The matrix has been annotated with two symbols showing where on the risk matrix (the baseline and inherent likelihood score would fall for) a 1 in 10 year event and a 1 in 15 year hazard with a category 3 – moderate level consequence would geometrically be plotted. It can be seen that in the context of the risk matrix this difference is actually minimal, when considering the full range of likelihoods the matrix needs to accommodate.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <table border="1" data-bbox="1077 715 1559 1050"> <tr><td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">Consequences</td><td>Cat 5</td><td>5.1</td><td>5.9</td><td>7.0</td><td>8.3</td><td>10.0</td></tr> <tr><td>Cat 4</td><td>4.1</td><td>4.9</td><td>5.9</td><td>7.4</td><td>9.4</td></tr> <tr><td>Cat 3</td><td>2.9</td><td>3.5</td><td>4.4</td><td>5.9</td><td>8.3</td></tr> <tr><td>Cat 2</td><td>1.5</td><td>1.8</td><td>2.4</td><td>3.5</td><td>5.9</td></tr> <tr><td>Cat 1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Frequency</td><td>&gt;1,000 years</td><td>100-1,000 years</td><td>10-100 years</td><td>1 to 10 years</td><td>Yearly</td></tr> </table>  </div> <p><b>Hazman II matrix with hazard scoring 1 in 10 years at category 3 consequence and 1 in 15 year with category 3 consequence (shown as the two black circles with triangles inside them) from Hazman II.</b></p> <p>As the change in likelihood relates only to a change in one the two factors (likelihood and consequence) that are needed to determine a risk score, it only has a proportionate effect of the final risk score generated.</p>	Consequences	Cat 5	5.1	5.9	7.0	8.3	10.0	Cat 4	4.1	4.9	5.9	7.4	9.4	Cat 3	2.9	3.5	4.4	5.9	8.3	Cat 2	1.5	1.8	2.4	3.5	5.9	Cat 1	0	0	0	0	0	Frequency	>1,000 years	100-1,000 years	10-100 years	1 to 10 years	Yearly
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			<p>As noted above, this is not limited to the Hazman II software, and all risk matrices to varying degrees and extents utilises a similar logarithmic principle. To demonstrate this, the same risk score is assessed using the PLA Risk Assessment Proforma (available at <a href="https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx">https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx</a>), and presented below. It shows that for a 1 in 10 year event with a category 3 consequence the hazard risk score would be 9/25 and for a 1 in 15 year hazard with a category 3 consequence the risk score would be 8.46 / 25.</p> <p>When taking into account the PLA Risk Assessment Proforma scale is from 0-25, this equate to a total risk score change of 0.534. If the same analysis is presented in the Hazman II scores, which generated risk scores of 5.92 and 5.24, a difference of 0.68 is evident on a total scale of 0 - 10, not 1 - 25 as used by the PLA Risk Assessment Proforma. Thus the PLA Risk Assessment Proforma shows a smaller increase in risk for the same calculation, and when the relative scales are considered a likely for like comparison out of 10 would show that the PLA Risk Assessment Proforma shows a much reduced change in risk score for a 50% increase in likelihood.</p> <p>This phenomenon is a nuanced feature of the Hazman II risk matrix, which demonstrates it is sensitive to changes of more frequent likelihood scores compared to the PLA Risk Assessment Proforma, which uses a simplistic 5 by 5 matrix. This is a designed feature (common amongst more advanced risk matrices), which was specifically developed into the matrix by Marico Marine founder John Riding, and whilst it creates more complexity</p>

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			<p>compared to having a simple multiplicative matrix, it provides for better correlation to societal concern for risk. Further to this then the Hazman II matrix also accommodates for the general societal principle that the greater the magnitude the greater the societal concern.</p> <table border="1" data-bbox="1070 598 2056 1101"> <thead> <tr> <th colspan="2" rowspan="2">RISK ASSESSMENT MATRIX: RISK CRITERIA</th> <th colspan="5">FREQUENCY</th> </tr> <tr> <th>Level 1</th> <th>Level 2</th> <th>Level 3</th> <th>Level 4</th> <th>Level 5</th> </tr> </thead> <tbody> <tr> <td colspan="2">Rare</td> <td>Unlikely</td> <td>Possible</td> <td>Likely</td> <td>Almost Certain</td> <td></td> </tr> <tr> <td colspan="2">One or more times greater than 100 years</td> <td>One or more times 100 years</td> <td>One or more times in 10 years</td> <td>One or more times per year</td> <td>Ten or more times per year</td> <td></td> </tr> <tr> <td rowspan="5">Consequence</td> <td>5 - Loss of vessel or severe damage to vessel. Multiple fatalities. International news coverage. 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Activity can only be undertaken with further additional controls.</td> </tr> <tr> <td>Extreme (15 - 25)</td> <td colspan="5">Intolerable risk. Activity not authorised</td> </tr> </tbody> </table> <p><b>PLA Risk Assessment Proforma matrix with hazard scoring 1 in 10 years at category 3 consequence and 1 in 15 year with category 3 consequence.</b></p>	RISK ASSESSMENT MATRIX: RISK CRITERIA		FREQUENCY					Level 1	Level 2	Level 3	Level 4	Level 5	Rare		Unlikely	Possible	Likely	Almost Certain		One or more times greater than 100 years		One or more times 100 years	One or more times in 10 years	One or more times per year	Ten or more times per year		Consequence	5 - Loss of vessel or severe damage to vessel. Multiple fatalities. International news coverage. Serious long term impact on environment and/or permanent damage.	Moderate (5)	High (10)	Extreme (15)	Extreme (20)	Extreme (25)	4 - Major damage to vessel. Single fatality. National news coverage. 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3.12.23	Trinity House (THLS)	<b>Decrease of navigational risk since 1997</b> Would THLS comment on the Applicant's statement in [REP2-014] para 49 "... <i>navigational risk has decreased locally</i>	The Applicant notes that this question is for Trinity House but would make the following observations: Since 1997 there have been a number of technological, legislative and operational changes that have led to a national and local reduction in																																																																																								

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		<p><i>and internationally since 1997 (for instance due to new technology)...”?</i></p>	<p>navigation risk in and around ports, and in coastal waters such as in the vicinity of TEOW. This includes (but is not limited to):</p> <ol style="list-style-type: none"> <li>1. The introduction of technology such as Automatic Information System in 2002-2007 (implemented by vessel category), which as identified by the MCA “<i>is a major development in improving safety of navigation</i>” (ref. <a href="http://solasv.mcga.gov.uk/Annexes/Annex17.htm">http://solasv.mcga.gov.uk/Annexes/Annex17.htm</a>).</li> <li>2. Introduction of legislation such as the UK Port Marine Safety Code in 2003 mandating the need for improved management of navigation safety in ports and their approaches, following the grounding due to pilotage error on the <i>Sea Empress</i> in the approaches to Milford Haven.</li> <li>3. Introduction of the ship board operational improvements, such as the IMO International Safety Management (ISM) Code, which established safety-management objectives and requires a safety management system for vessels.</li> </ol> <p>The decrease in risk is also evidenced by MAIB reported accidents per year (analysis between 1991 and 2004 which is presented at pg 84 of MCA guidance - in “Guidance On The Assessment Of The Impact Of Offshore Wind Farms: Methodology for Assessing the Marine Navigational Safety Risks of Offshore Wind Farms”), which shows a general decline in the total number of reported accidents reported to the MAIB, per year, since a peak of around</p>



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			<p>1000 in 1995 to around 650 in 2004.</p>  <p><i>Figure 27 – Number of Marine Accidents (1991 / 2004)</i></p> <p>This is further evidenced in Table TSGB0517 Marine Accident Fatalities and Injuries Reported: 2005 to 2016 of the Department for Transport: Transport Statistics Great Britain 2017. 2017 Edition available at <a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664323/tsgb-2017-print-ready-version.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664323/tsgb-2017-print-ready-version.pdf</a>, which</p>

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			<p>shows there has been a reduction in fatalities in UK waters (from any incident type - often not navigation related) from 41 fatalities in 2005 to 19 in 2016.</p> <p>The Applicant therefore confirms it's position and will respond to responses provided by Trinity House.</p>
3.12.24	The Applicant	<p><b>Transit past NE Spit of hazardous goods including gas to London and Sheerness ports</b>                      In [REP5-012] D5 Appendix 7 para 101 the Applicant appears to confirm that Port of Sheerness (Peel Ports) were not consulted in regard to the 29 April Hazard workshop (HAZID workshop) or the development of the NRA Addendum.</p> <ul style="list-style-type: none"> <li>• Would the Applicant confirm if and in what way shipping and navigation hazards involving hazardous goods vessels including petroleum or gas carriers have been specifically assessed?</li> </ul>	<p>The Applicant notes that the Addendum NRA through consultation primarily with LPC assigned hazardous goods to the following hazard categories:</p> <ul style="list-style-type: none"> <li>• Liquid Natural Gas (LNG) Carriers were assigned to the Commercial Class 1 and Class 2 Vessel category</li> <li>• Dangerous Goods Vessels were assigned to the Commercial Class 1 and Class 2 Vessel category</li> </ul> <p>Tankers are included by reference to PLA Pilotages Classes based on their size and draught. The same is the case for Container vessels, which often carry dangerous goods in containers. Some Ro-Ro vessels, typically those engaged on regular freight services, also handle dangerous goods and are considered inline with the pilot classes derived from the PLA Pilotage directions.</p> <p>The assessment of navigational hazards (e.g. collision, contact, grounding, etc.) of these vessels is contained within the FSA risk assessment, and also within the historical incident and vessel traffic analysis.</p>

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			<p>Whilst vessel such as LNG vessels cause concern to the wider public, they are amongst the most heavily managed vessels and therefore can be considered in many respects to be amongst the safest vessels.</p>
3.12.25	The Applicant	<p><b>Hazards involving car carrier vessels</b>                      Would the Applicant confirm the details of assessment of risk consequence for hazards involving car carriers, as evidence presented by IPs at D5 indicate that due to windage and instability they are vulnerable to capsize in a collision, even glancing.</p>	<p>The Applicant notes the representations made, but does not agree with their context, as Car Carriers, like all vessels transiting through the TEOW study area meet stringent international and national requirements for design and stability.</p> <p>As with all vessel types, individual issues and concerns occur based on the type and arrangement of cargo and vessel design: For car carriers, this is due to their extensive covered cargo lanes above the main deck, each of which extends over a large area, such that any water ingress will rapidly affect the transverse stability. However, the Applicant does not agree that a glancing blow will result in a catastrophic outcome.</p> <p>Recent catastrophic collisions with car carriers in the Southern North Sea and English Channel include:</p> <ul style="list-style-type: none"> <li>• 5<sup>th</sup> Dec 2012 - <i>Baltic Ace</i> (car carrier) was involved with in a crossing collision with the <i>Corvus J</i> (ice strengthen container vessel) at speeds of 15.1knts and 9.2knots respectively – resulting in 11 fatalities</li> <li>• 14<sup>th</sup> Dec 2002 - <i>Kariba</i> container was ship was in an overtaking collision with the <i>Tricolour</i> (Car carrier) in the English Channel at</li> </ul>

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			<p>speeds of 16knts and 17.9knts respectively – resulting in zero fatalities.</p> <p>Neither of these incidents can be considered to be a glancing blow with vessel speed and collision angles being considerable. Further, a recent head on collision, that occurred on 3 December 2015, that did not have catastrophic outcomes, but that would also not be considered a glancing blow, occurred between the <i>City of Rotterdam</i> and the <i>Primular Seaways</i> in the Humber Estuary, with closing speeds of 12knts and 14.3knts respectively, that resulted in no fatalities or minimal pollution but did result in significant damage. A link to the MAIB report and accompanying analysis of this incidents is available at: <a href="https://www.gov.uk/maib-reports/collision-between-pure-car-carrier-city-of-rotterdam-and-ro-ro-freight-ferry-primula-seaways">https://www.gov.uk/maib-reports/collision-between-pure-car-carrier-city-of-rotterdam-and-ro-ro-freight-ferry-primula-seaways</a></p> <p>The Applicant therefore disputes the claims that glancing blows would cause catastrophic accident outcomes for car carriers as this is not evidenced in historical incidents either specifically in the study area or nationally, this remains true in the context of all available metocean conditions at study area and national scales.</p> <p>However, and within this context, it is important to note that in the NRA and NRA A car carriers are included within the hazard vessel type categories Commercial Vessel Class 1 and 2, and Commercial Vessel Class 3 and 4. The incident data used to characterise return rates for these hazards (which</p>

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			<p>incidentally were markedly increased in the NRA A for these hazards likelihoods based on IP's qualitative judgement – both for the most likely outcome and the worst credible outcome of an individual hazard) included all vessel types that transit the area, and which have done, in relation to incident data, since the data commenced in 1997, and as such includes car carriers. The Hazard risk scores for likelihood are therefore precautionary, both in the most likely and worst credible assessment, heavily reflective of IP consultation and qualitative experience in addition to quantitative incident analysis, and directly related to the full range of vessels that transit the area both in the baseline and under future baseline scenarios.</p> <p>Further to this, in the assessment of consequence, it is important to note that when identifying consequence magnitude, it relates to either the “most likely” or “worst credible” outcome or realisation of a hazard. Capsizing of a commercial vessel would be considered to fall within the “worst credible” category and have a correspondingly rare likelihood value. This further shows that a glancing blow, if it did result in a capsize of a car carrier, which the Applicant does not agree with, has been assessed within the worst credible outcome in which consequence scores are high.</p> <p>The Applicant therefore considers that car carriers, as with all other vessels transiting the area, have been adequately considered with the NRA A, and indeed were the focus of the PTBS study conducted on the PIER RLB, which demonstrated the feasible nature of pilot transfers with the PEIR RLB insitu and raised no specific concerns with regards to car carriers.</p>

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3.12.26	The Applicant	<p><b>Effects on stakeholders of possible additional risk controls</b>                      With specific discussion of possible additional risk controls during the operational phase as well as construction and decommissioning phases (considered in the NRA but not put forward at this time), would the Applicant expand on the answer given at [REP1-017] to the RR [SUG-5] from SUNK VTS User Group in respect to concerns (also raised in Minutes of meeting MCA/THLS 23 August 2018 submitted at [REP1-082]) about the effects of the TOWF extension needing changes in operation <i>“putting extra pressure on coordination on the movement of ships and efficiency of operation, which could impact safety...”</i>.</p>	<p>The Applicant notes that the comments made by both the SUNK VTS User Group and the MCA / THLS are predicated on perceived requirements to change current pilot transfer operations for ESL and PLA. The Applicant, does not for reasons set out at ExA 3.12.7, 3.12.8, 3.12.9 and 3.12.10 and throughout the Examination, foresee the requirement for any material change to pilotage operations, as it has met and indeed exceeded the requirement for 2nm clear sea room plus 1nm buffer at NE Pilot Boarding Station, and that sufficient sea room remains in other operational areas for continued pilotage transfers to take place.</p> <p>The Applicant therefore does not foreshadow the requirement for ESL or PLA to materially change their operations at NE Spit and, in relation to Additional Control measures, then outwith the need to attend the Shipping and Navigation Liaison Group, which in part has been recommended to ameliorate PLA / ESL concerns, then there are no proposed risk controls that would necessitate <i>“putting extra pressure on coordination on the movement of ships and efficiency of operation, which could impact safety...”</i>.</p>
3.12.27	The Applicant	<p><b>Use of space south of NESP diamond in extreme conditions:</b>                      In [REP5-069] D5 submission commenting on Applicant's D4C submission of Statement of Evidence paras 117-123, PLA/ESL provides</p>	<p>a) The Applicant would first note that 5 transits out of a total of over 6000 at NE Spit pilot boarding station over the course of a years' worth of operation, only accounts for less than 0.1% transfers and as such is a very small proportion of vessels that transfer pilots at NE Spit.</p>

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		<p>evidence that:</p> <ul style="list-style-type: none"> <li>on five occasions during the surveyed period when SUNK pilot station was off-station due to adverse MetOcean conditions, NE Spit served in the sea space south of the NE Spit diamond vessels that could only use the inshore route to the Thames and would not have been able to pass around the windfarm to board pilot at Tongue or dip-down to board a pilot north of the NE Spit diamond.</li> <li>in the year between Dec 2017 and Nov 2018 the NE Spit station was "off station on 17 separate days".</li> </ul> <p>PLA/ESL D5 submission [REP5-070] ISH 8 Action Points item 17 provides evidence that, on days when Sunk was off-station, operations at or south of NE Spit diamond served container ships for DPWLG and PoT and tankers for Grays, Shell, Navigator, West Thurrock and Oikos oil terminals.</p> <p>Would the Applicant comment on:</p>	<p>The Applicant conducted a baseline assessment of risk within the study, for the NRA A that assessed the navigational hazards of contact, collision, and grounding. Within this assessment a cause of these was noted to include pilot transfer difficulties – and which was entered following representation from the PLA and presentation of incident data showing pilot transfer incidents relating to property, health and safety of pilots and launch crews, and causes such as pilot ladders not being rigged correctly. Another cause of these navigational hazards was noted to be adverse met ocean conditions. In essence, as the NRA A FSA definition of hazards relates to a unsafe situation that if it occurs produces detrimental outcome, problems with pilot boarding and adverse met ocean conditions are considered as causes of hazard occurrence and not hazards themselves. This approach is where the IMO FSA assessment of maritime risk is different to that commonly adopted by bodies such as the UK Health and Safety Executive.</p> <p>The Applicant notes that historical incident data, includes incidents which occur due to adverse weather and pilot transfer difficulties were used to inform the risk scoring assessment process, and further the purpose of the hazard workshop was to specifically ensure such qualitative input was included in hazard scores.</p> <p>Therefore, the Applicant can confirm that these causes have been addressed in the assessment of navigation risk and brought through in terms of hazard scoring for consequences to People, Property, Environment and Stakeholders / Business. In this context it is important to note that with</p>

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		<p>a) whether or how the risk assessment has considered and scored the hazard to property, health and safety of pilots and launch crews, stakeholder or commercial interests of pilot boarding or landing operations at or south of the NE Spit diamond in such adverse Met Ocean conditions as the five instances described in the PLA/ESL submission noted above; and</p> <p>b) what effect the proposed reduction to 2.1nm sea space between Elbow buoy and the proposed TEOW would have on the embedded risk and the ability of pilot services to provide continued service to inbound vessels; and</p> <p>c) what commercial effect might result from the inability to provide any pilot service to vessels seeking to enter the Thames in extreme MetOcean conditions such as the five noted in the PLA/ESL evidence above.</p>	<p>regard to the assessment of risk to people/stakeholders, two measures are considered, namely: Individual risk; and Societal risk. When assessing societal risk this study focuses on taking into account the number of people likely to be involved in an incident (which is higher for passenger ferries, for example), and assesses the significance of the change in risk compared to background risk levels for the UK.</p> <p>b) The Applicant has demonstrated that at its narrowest point the sea room width for the inshore route is 2.1nm which occurs between the Elbow buoy and the proposed TEOW, and although based on MSP guidance, put forward by POTLL / DPWLG, this distance is ample for transit for through vessels [Ref SEZ paper], and indeed significantly exceed MSP requirements. Therefore, the Applicant does not consider that any material change to will occur to "embedded risk" as a result.</p> <p>In terms of pilotage operations at Elbow then it is identified based ESL data that only 3.7% of pilotage operations occur in the vicinity of the Elbow buoy and that the majority of these would be undertaken in favourable met ocean conditions. The Applicant notes that in response to ExA Q 3.12.10 that there would be little if any change to pilot transfers in the vicinity of the Elbow Buoy with the TEOW in place. In terms of the restricted operation for the NE Spit pilot Boarding area, the Applicant has in response to Deadline 5 Written Presentations (Appendix 26 to this Deadline 6 submission), reviewed the pilot transfer frequency and compared it to the time when only the Elbow area was available for pilot boarding for a restricted number and type of</p>



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			<p>vessels. This represents a minimal number of occasions which the Applicant maintains will remain feasible given the searoom provided. It is also important to put the limit states in the context of pilotage operations. The metocean conditions identified are limit states for pilotage, rather than what may be considered extreme metocean conditions. During such limit states there are two important factors to consider, one is the remaining searoom, which has been identified through a combination of quantitative and qualitative analysis as being adequate. The second is vessel density and complexity. The searoom required has been defined by IPs as being necessary due to the complexity of this area of general navigation. Whilst the Applicant maintains that the routes are of notably lesser vessel density than other areas which formed the case studies which informed the quantitative component of the searoom calculations, it is of note that the complexity will inherently reduce during limit states as the numbers and types of vessels reduce. Therefore whilst it is accepted that limit states may be more challenging in and of themselves, the complexity of surrounding vessel traffic reduces proportionally and as such the resilience of the Elbow Buoy pilotage operations will be maintained.</p> <p>c) Whilst the applicant notes that it does not consider this to be realistic scenario as noted above due to sufficient sea room being available within the vicinity of Elbow to both the north and south, were pilot operations suspended for these 5 occurrences, then it would be the same situation as when all pilot stations are closed, which is a regular occurrence and is noted</p>

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			<p>in the ESL provided logs Annex F to this Deadline 6 submission. The impact would be that vessels would need to go to anchor or wait for the weather to abate. As many container vessels stop at multiple ports, and the terminus to many liner services is western Europe where vessels have multiple port calls, some container vessel operators may redirect their vessels to the next port on their schedule (if open) and stop at London ports on their return. It may also be the case that a pilot is boarded at an alternative port (e.g. Dover) if conditions allow.</p> <p>Often however, the limiting state, certainly for larger vessels is not necessarily at the pilot boarding location, but other aspects of a vessels transit and berthing into a port, such as wind restriction on specific channel transits or wind restrictions on berthing or cargo handling. Therefore, vessels may not choose to enter the port and board a pilot during these conditions due to other limitations, the proposed project is not considered to compound or exacerbate any such limitation and the NRAA considered the most likely and worst credible incidents in the context of all metocean conditions identified by the IPs.</p> <p>Further to this, then the Applicant would note that if conditions were such that all other outer Thames Estuary pilot boarding areas were closed (e.g. SUNK, Tongue, NE Spit, NE Goodwin, etc), then it is expected that a prudent mariner would be wary about boarding a pilot at all, and the safest action</p>

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			<p>would be to wait until the weather abated sufficiently for a safe transfer to take place. It is also understood from the 2015 PLA NE Spit NRA, and as noted in the PLA response to ISH Actions [REP5-070] that <i>"Planning of critical/high risk vessels with ESL/Pilot/VTS"</i> is a control measure that is currently in place and that the PLA would particularly apply this control during times of adverse MetOcean conditions necessitating restricted pilotage services.</p> <p>In summary the Applicant notes that adverse weather, which is a common occurrence, is currently managed by ports and shipping lines on a day to day basis with sufficient contingency in schedules already. The failure to board a pilot at a particular time, at worst incurs a delay to the ship as it waits for condition to improve, which is considered in operational planning.</p>
3.12.28	The Applicant	<p><b>Risk Assessment for conflicting vessel encounters between NE Spit Racon buoy and the proposed extension</b>                      In [REP5-012] D5 Appendix 7 par 65 the Applicant maintains that there would be <i>"...no significant interference with visibility...as a result of the extension."</i>                      It continues to state that</p> <ul style="list-style-type: none"> <li>• there would be <i>"ample sea room"</i> for vessels to take a wider turn around the NW corner of the extension than</li> </ul>	<p>The Applicant notes the implication raised by ExA in this action point and makes the observation that, in general, vessels which are transiting to the north of the existing wind farm naturally separate themselves by vessels inbound vessels keeping to the north and outbound vessels keeping to the south. This is evidenced through Gate C (Figure 33 of APP-089). It is further noted that there is no requirement for a vessel to keep to starboard in general navigation terms in this area (it is not a [narrow] channel) and therefore vessels can continue with their chosen course or speed unless directed otherwise or a overtaking situation (COLREG Part B Section II Rule 13), head on situation (COLREG Part B Section II Rule 14) or crossing situation (COLREG Part B Section II Rule 15) arises and a risk of collision</p>

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		<p>at present and that</p> <ul style="list-style-type: none"> <li>the sea room required between NE Spit Racon buoy and the array is determined on a precautionary basis by guidance on spatial needs of <i>"concurrent transits of four 333m LOA vessels and allowing for vessels turning"</i>; and that</li> <li>a clear line of sight is <i>"desirable but not essential"</i>.</li> </ul> <p>The Applicant has also presented evidence that their calculation of sea space requirement in this location is based on the parallel passage of 4 concurrent vessels plus a buffer <i>"...to allow for other maritime considerations, including crossing vessels..."</i> [REP5-018 para 25].</p> <p>At [REP5-071] POTL/LGPL contends that guidelines for theoretical channel width based on ship beam are not relevant in the locations west of the WF and <i>'do not allow for ships encountering operations such as pilot transfers'</i>.</p>	<p>exists.</p> <p>The Applicant wishes to clarify that Para 68 of REP5-012 refers to vessels passing between the wind farm and the NESP Racon Buoy. Furthermore, the Applicant confirms that the sea space provided in this area (in accordance with having been designed to satisfy MGN and MSP guidance and as illustrated in Para 68 of REP5-012) allows for the ongoing navigation of vessels in accordance with COLREGS and does not consider that the geometry fundamentally changes to the extent that the general existing practices of transits of vessels through this area will change from present (and with regards to the situation as described by the ExA).</p> <p>If there is a risk of collision in the area between the wind farm and the NESP Racon Buoy then it needs to be determined if the situation is a head on situation (COLREG Part B Section II Rule 14) or a crossing situation (COLREG Part B Section II Rule 15). A head on situation requires both vessels to alter their course to starboard. Whereas, in a crossing situation, the onus is on the vessel which has the other on her starboard side to give way. This can be done by either altering course to starboard or slowing down. Putting this into context in the area between the SEZ and NE Spit buoy, vessels will meet on reciprocal or near reciprocal courses (NE /SW) when they are dipping down to the NE Spit pilot diamond. The sea area here is adequate in size for both vessels to alter course to starboard and safely pass one another. The ExA describe that the outbound vessel would take evasive action by turning towards the windfarm giving way to vessels approaching from the ENE. The</p>

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		<p>In [REP5-061] evidence at D5 Fig 4 LPC has clarified that they strongly recommend 2nm sea room plus 1nm safety buffer between the proposed extension and the NE Spit Racon buoy whereas the sea space allowed by the SEZ proposal is 2.5nm as clarified in Table 2 of Applicant's D5 Appendix 7.</p> <p>The [REP5-067] D5 PLA/ESL submission of oral evidence at ISH8 point 4.8.1 explains danger to navigation as an effect of <i>"reduction in sea room means the same amount of traffic in the smaller area"</i>.</p> <p>Vessel Traffic Plots submitted by the Applicant as D4B Appendix 1 Annex D HazInfoPack [REP4B-006] indicates that vessels approaching from the east turn to the south-east at a consistent position north of the TOWF in order to dip down towards NE Spit pilot boarding diamond. If the turn position for these vessels is</p>	<p>Applicant wishes to note that this would be a crossing situation as per the COLREGS and the onus is on the vessels approaching from the ENE to give way to the outbound vessel as the outbound vessel would be on their starboard side.</p> <p>a) The NRA A included allowance for increase in hazard occurrence for a number of different factors, which were generated by the IPs attending the Hazard Workshop – this is as documented in the NRA A Para 128 where in some cases hazard likelihood scores (e.g. for collision of Class 1 or 2 vessels) were doubled to represent a number of factors.</p> <p>It is noted in response to EXAQ3.12.14 that any reduced visibility, brought about by the TEOW, is not expected in itself to materially make any difference to navigation.</p> <p>b) The Applicant refers to REP4-018 (Structures Exclusion Zone Para 37 and Table 11) which collates and summarises submissions made by IP's and with reference to the MGN543 guidance, MSP guidance and other submissions on determining the sea room and spatial allowance for turning vessels. With reference to the 333m LOA vessels - the sea space for turning a vessel of this size is 1.7nm and this includes an allowance for the vessel transiting for 6 minutes on a constant heading at 6 knots (which is a precautionary approach</p>

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		<p>relocated west as a consequence of the proposed extension, the turn would have to take place closer to the NE Spit Racon buoy, where the use of the sea space appears to be characterised by vessels crossing on multiple headings, evidenced by the Vessel Traffic Plots in [REP4B-006].</p> <p>At para 68 of [REP5-012] D5 Appendix 7 the Applicant refers to the "second ship" (understood to be that passing on a course towards the north-east) and its clearance relationship to the NE Spit buoy. However, this appears to be inconsistent because (as it is understood from other evidence) vessels outbound from London and Sheerness should be taking the starboard side (i.e. southerly part of the sea space) in this location and if encountering vessels approaching from the ENE the outbound vessel would be required to take evasive action by turning to starboard towards the wind farm.</p>	<p>and allowing for a pilot transfer and/or other contingency in the turn). This leaves 0.8nm of distance at the absolute narrowest point between the wind farm SEZ boundary and the NE Spit Racon.</p> <p>It should be noted that, notwithstanding the conclusive evidence (from AIS and ESL submissions) that pilot transfers and turning of vessels (regardless of size) in this narrowest point are extremely rare, the volume of traffic in the study area (see Appendix 41 to Deadline 6: AIS Animations Note) and particularly of this size does not support the requirement to allow for concurrent transits and transfers. In the rare event that concurrent activities might occur, vessels would be able to deconflict temporally (and would do so through good practice in accordance with COLREGS) through minor adjustment to their time on arrival in the area and in communication with each other/PLA VTS and ESL (the latter if engaged in transfer operations).</p> <p>Finally, the guidance does not require the addition of sea room for turning with sea room for transit and the Applicant concludes that sufficient sea room is provided for transiting and turning vessels notwithstanding that this is unlikely and that the calculations are precautionary in their basis due to vessel sizes and frequency.</p> <p>c) See response to question b.</p> <p>d)The Applicant has provided a fuller contextual response to this question at the beginning of it's response to this ExAQ (above). The Applicant can</p>

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		<p>Would the Applicant clarify:</p> <p>a) what additional factor of hazard likelihood has been attributed in the NRA to any reduced visibility (by eye or by instruments) across the corner of the WF as a result of the extension; and</p> <p>b) what is the amount of spatial allowance made in this specific assessment for turning vessel movements north-west of the Windfarm in the immediate vicinity of the NE Spit Racon buoy (such spatial allowance having been referred to in the Applicant's submission [REP5- 018] para 25 noted above as supplementary to the MGN543 space for four 333m LOA vessels in concurrent parallel transit); and</p> <p>c) how has that allowance been calculated, taking into account the extension to the north-west of pilot transfer operations if constrained or</p>	<p>confirm that allowance is therefore inherent within the provision of searoom for concurrent vessel sizes greater than has ever been recorded within the nearshore route, i.e. 4 x 333m vessels. The allowance provided by the MSP calculations, whilst not directly required as the turning area relates primarily to traffic separation schemes there remains adequate searoom for vessels to slow and turn as required.</p> <p>e) The MSP guidance advises that clearance to the edge of a channel should be approximately equal a vessel length, and therefore a vessel length is considered to be the required minimum distance to pass a buoy if sufficient sea room allows, although in much of the PLA channels and fairways such distances are not available. The Applicant notes that the Sea Room calculation based on MSP have been allowed for, to meet this requirement and that as these calculations are precautionary, and further sea room is available, vessel masters would use the full sea room available to them and make a judge on transit distance from a buoy accordingly.</p> <p>f) It is important to note that under UNCLOS, coastal states can establish a safety zone of up to 500m around an offshore installation or structure within its EEZ. Safety Zones are not mandatory within UK waters and the need to apply for a safety zone will be balanced with the requirements of stakeholders. Applications are made to BIES, and in order to minimise impact to stakeholders any safety zones that are applied for will be rolling in nature such that they cover only the area of the site where works</p>

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		<p>extended by non-standard circumstances; and</p> <p>d) how has that allowance been calculated taking into account the requirement for outbound vessels to turn to starboard to take (Colregs compliant) evasive action in case of encountering other vessels as or after they make their turn to the east past the northern extremity of the proposed TEOW; and</p> <p>e) what allowance should be made in this location for clearance from the NE Spit Racon buoy itself as the tracks presented in evidence [eg REP4B-006] show that vessels leave clear water clearance from the buoy; and</p> <p>f) to what extent is the hazard scoring altered in construction phase by the reduction of sea space at this pinch point between NE Spit Racon buoy and proposed structures and construction</p>	<p>necessitate it, only for the duration of those works and only of a size that is needed.</p> <p>Therefore, as this concern only relates only to the NW corner of the TEOW in the vicinity of the NE Spit RACON buoy, the Applicant does not consider safety zones in this area to have a material effect on pilot boarding at the NE Spit as:</p> <ol style="list-style-type: none"> <li>1. Any safety zone would be temporary in nature – accounting for a very small proportion of the TEOW construction period.</li> <li>2. That only 2.2% of pilot transfers take place in the whole of the NES Buoy operational area of the NE Spit Pilot boarding operational area and that most likely take place some distance from the proposed TEOW to the NW, N and NE of the Buoy and therefore would not be affected by any the Safety Zone.</li> <li>3. Sufficient sea room has been allowed for based on PLA / ESL requirements of 2nm sea room plus 1nm buffer, at the NE Spit Dimond for pilot transfers to take place.</li> <li>4. Additional control measures including the use of guard vessels (if required), promulgation of construction progress information and marine coordination of construction vessels would be in place.</li> </ol>



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		activity that would be subject to a 500m exclusion zone taking up part of the safety margin or buffer?	
3.12.29	The Applicant	<p><b>Effects of additional risk to navigation in the vicinity of TOWF</b>                      Would the Applicant re-submit their assessment of the environmental, commercial and economic effects of additional distance travelled due to re-routing around the proposed TEOW of vessels over the size assessed in the PTB Simulation.</p>	<p>The Applicant maintains that re-routing is not necessary as adequate searoom remains to allow safe passage through the inshore route. All other approaches to the Thames Estuary are narrower than the inshore route post-installation of the proposed project and as such passage planning will be made that accounts for more limited areas of searoom, and the inshore route will be a comparatively lesser concern. Given the Applicant maintains that no diversion is necessary for vessels in the range 240-333m, beyond deviations that would be undertaken under normal circumstances, there will be no significant environmental, commercial or economic effect associated with it.</p>
3.12.30	The Applicant	<p><b>Economic consequence of hazards</b>                      In regard to the economic consequence of risk the POTL/LGPL D5 submission [REP5-071] argues that based on the NRA Addendum if the economic consequence of a hazard is over £100,000 it is a Category 3 risk and if the likelihood is more than yearly occurrence then it is above ALARP and therefore not tolerable. If well over a hundred vessels are diverted as a consequence of risk assessed, then an</p>	<p>For reasons laid out in the Applicants response to POTLL/DPWLG D5 submission at Appendix 26 of this Deadline 6 submission, the Applicant does not consider the analysis and commentary presented by POTLL/DPWLG to accurately reflect FSA standard methodologies.</p> <p>However, the potential consequence was considered in the context of the HAZID workshop, as is commonplace within such workshops to inform NRA. In this context, the following information is salient:                      In terms of a "worst credible hazard" (e.g. collision contact or grounding) being realised, then the impact to stakeholders was considered to relate to all aspects, some of which would be knock effects to 3rd party vessels, such as vessel delays / congestion. Such effects would be temporary in nature</p>

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		<p>economic consequence of over £100,000 is 'highly likely' and the risk of economic consequence unacceptable.</p> <p>Would the Applicant confirm if and in what way traffic congestion and delay to port operations was considered as a potential consequence of collision involving a large commercial vessel and how it was assessed in the NRA or NRA Addendum?</p>	<p>and not dissimilar to effects of closure of the port due to adverse weather conditions.</p> <p>The difference with congestion being caused by a navigation accident, is that there are a number of different options for the boarding of pilots for vessels entering London ports - even within the NE Spit operational area there are three defined pilot boarding stations – NE Spit, Tongue and NE Goodwin. If a worst credible hazard were to be realised and a catastrophic accident were to occur, then at least one if not two other chartered pilot boarding stations, in the NE Spit operational area would be available for pilot transfer and also it would be possible for vessels to take a pilot at the SUNK pilot boarding area as well.</p> <p>It is noted that whilst this could have an increased cost to ESL and the PLA pilot, as a result of additional transit time to / from the further pilot diamonds and time on a vessel for a pilot, it is very unlikely that any incident in the area would close any London port even for a very short period of time.</p> <p>Fundamentally there are a number of access channel and routes that vessels that were going to use the NE spit pilot boarding operational areas could use as alternatives. The same is not the case for the SUNK and the Black Deep route into the London Ports, which if a catastrophic hazard were to occur, would close London ports to deep draught vessels. However, for the TEOW study area there are no conceivable hazards, that could be influenced by the TEOW that could cause significant "knock-on" consequences to 3<sup>rd</sup> party</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			vessels.
3.12.31	The Applicant	<p><b>Potential effects of congestion of approach routes to ports</b>                      [REP1-148] Written Representation within Deadline 1 submission by LGPL/PoTLL section 3.1 states: "The Ports NPS also discusses the need for ... UK ports to be competitive (Para 3.4.13). It also cites the need for resilience to account for <i>'short term demand peaks, the impact of adverse weather conditions, accidents, deliberate disruptive acts and other operational difficulties without causing economic disruption...'</i>"</p> <p>The POTL/LGPL REP5-071 D5 submission argues that inbound vessels over 240m length (above the size range tested in the PTB Simulation) would opt not to use the NESP diamond boarding location due to the proposed TEOW extension westwards and that approximately 113 vessels above this length inbound to DPWLG annually currently using the inshore route, not accounting for</p>	<p>Firstly, the Applicant has made detailed comments in Appendix 26 to Deadline 6: Response to Deadline 5 Submissions by Interested Parties – Shipping and Navigation to the LGPL and PoTLL submission and particularly with regards to the basis of the projected inshore route vessel forecast calculations stated – which are contested by the Applicant.</p> <p>Secondly, the Applicant does not accept the proposition that vessels over 240m length will normally elect or 'be required' to re-route around the inshore route. This is because in determining the SEZ the Applicant has considered and incorporated the sea room requirements for these vessels and with particular reference to the vessel survey datasets, methodological guidance and extensive discussion with IP's including the marine specialist, HR Wallingford, who have been employed by POTL and LGPL for matters of navigation. The basis of the sea room created by the SEZ, which was based on MSP guidance, allows for the concurrent transit of four 333m LOA vessels through the inshore route (and pilot transfer at the NESP diamond) and in consideration of all weather conditions and general operational considerations.</p> <p>Thirdly, with regards to overall considerations of congestion, the existing traffic profiles show that only 1% of the transits through the inshore route are undertaken by vessels of 240m and greater (it is noteworthy that a significantly greater proportion of vessels of this size transit to the north and east in the present case). Whilst the Applicant has provided for a future</p>

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		<p><i>'growth in vessel traffic over the reasonable planning horizon'</i> would <i>'be required to re-route'</i> around the WF. The IP argues that effects would include potential delay for time-critical passages depending on a number of circumstances and may include the effect of deterring shipping from using the Thames ports.</p> <p>Would the Applicant comment on what assessment has been made in the NRA and the ES for the effects of congestion of commercial navigation routes into the Thames estuary that might ensue from diversion of ships larger than 240m LOA around the proposed TEOW, taking into account time constraints of tidal height and potential congestion of routes and pilot transfer operations due to displacement of traffic?</p>	<p>baseline that accounts for a general trend towards larger vessels it is important to contextualise the POTL/LGPL proposition in the existing data comprising 21 months of AIS, a larger dataset than has been used to inform any previous marine NSIP project. During this period, from an annual vessel count in excess of 4000 transits, a single vessel of 333m was recorded transiting the inshore route; this represents 0.03% of vessel transits. The proposition therefore that growth forecasts of vessels of &gt;240m LOA using the inshore route will exist and exceed the capacity as created by the allowance for four concurrent 333m LOA vessels does not have the evidential basis to be considered a credible reasonable planning horizon.</p> <p>Therefore, and in specific response to the ExA question, the Applicant has considered congestion aspects created by the project in the overall assessment (and in the provision of sea room in the SEZ) and the proposed development does not adversely impact this because adequate sea room is provided for the present case and future scenarios (and exceeded through allowing spatial capacity for four x 333m LOA vessels), there is no evidence provided by IP's to suggest existing or future traffic forecasts will utilise all this capacity (existing or otherwise) and, furthermore, congestion and capacity limitations relate to already existing limiting features rather than due to sea room. These factors include aspects such as the depth limitations of the Princes Channel and routes in/out the estuary, number and depth of available berths and limitations of pilotage provision (e.g that ESL only currently operate a one boat service at North East Spit). Notwithstanding this position, the Applicant notes that alternative pilot boarding stations and</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			access routes across the wider estuary and approaches provide contingency to the Port that handle traffic that does not transit the inshore route and accidents and other deliberative acts as suggested.
3.12.32	The Applicant	<p><b>Effects of proposed development on navigation passage planning and financial or economic consequences</b></p> <p>In [REP5-012] D5 Appendix 7 the Applicant clarifies at paras 84 and 85 that the bulk of the 11 transits of the inshore route west of the WF take place within a 4.8 hour period and that this is partly to do with tidal "windows" and scheduling of pilot launch operations; and at para 87 that other tidal constraints such as berthing depths at the ports <i>"should be considered relevant"</i>.</p> <p>In REP5-071 POTL/LGPL asserts that:</p> <ul style="list-style-type: none"> <li>• [page 5/6]: "...the lack of regard to economic loss to the shipping and navigation industries is contrary to national policy..."; and</li> <li>• [page 10/11] argues that additional steaming time from diversion around</li> </ul>	<p>a) The applicant would direct the ExA to Appendix 26 to Deadline 6: Response to Deadline 5 Submissions by Interested Parties – Shipping and Navigation, and associated Annexes of this submission where a written response to the POTL/LGPL assertion that the application lacks regard to economic loss to the shipping and navigation industry is provided. The Applicant specifically notes inconsistencies in POTL/LGPL use of assumptions and presentation of analysis.</p> <p>b) As noted above, at Appendix 26 to Deadline 6, the Applicant does not accept that there is a need for vessels to deviate around the windfarm. The Applicant has provided clarification at Appendix 26 on deviation distances and steaming speeds and times and agrees with the estimated speeds provided by POTL and DPWLG.</p> <p>It is important to put this length of possible delay in context, and as noted within the Applicant Statement of Evidence at Deadline 4C, vessels, even large container vessels often wait in the approaches to the Thames Estuary for their berth to become available , a pilot to board, or sufficient water depth, and as such even if a 46-60 minute diversion were taken, it would have a negligible effect on the</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>the WF would be in the range 47 to 60 minutes not 20 to 40 mins as suggested by the Applicant; and</p> <ul style="list-style-type: none"> <li>• [page 11] the basis for scoring of consequence at the workshop of 29 March 2019 was not clearly understood by participants and that "...it was agreed that any collision between a Class 1 or 2 vessel and a fishing vessel (including a glancing blow) would result in the sinking of that vessel..." and that the consequence might also result in the detention of the vessel involved pending incident investigation.</li> </ul> <p>Would the Applicant comment in detail on:</p> <p>a) the POTL/LGPL assertion that the application lacks regard to economic loss to the shipping and navigation industry; and</p> <p>b) whether it accepts the POTL/LGPL argument for the steaming speed range</p>	<p>majority of vessels that visit London Ports.</p> <p>c) i), ii) &amp; iii). As noted in Appendix 26 to Deadline 6 (written response to the POTL/LGPL) the Applicant does not consider the FSA Navigation Risk Assessment methodology suitable to assess economic impact as it does not relate to a navigation safety hazard. 'ALARP' is a definition of risk, not a definition for financial impact, and as such ALARP can only be applied in conjunction with a defined navigation safety hazard, the realisation of which must result in negative consequences such as a collision, contact or grounding, and not merely economic impact as a result of congestion or diversion where no navigation hazard has been realised.</p> <p>d) The Applicant notes the analysis contained within Section 7.1.3 of the NRA and represented in Figure 47, and that the accompanying text notes <i>"The average height of tide per one, two etc. concurrent transits was calculated. The results show that between none and three concurrent transits, the average height of tide changes very little. On the six occasions in December 2016 when there were four or more concurrent transits, the height of tide was shown to be much greater however given that this accounts for less than 1% of the month its impact is not considered significant."</i> This analysis demonstrates that there is actually little correlation between tidal time and congestion for the inshore route.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>that relevant vessels would be making during such a diversion; and</p> <p>c) the POTL/LGPL case that that <i>"...the effect (of risk assessment) on vessels required to seek alternative pilot boarding locations..."</i></p> <ul style="list-style-type: none"> <li>i. would be such as to give rise to a consequence of hazard of Category 3 or above (£100k plus); and</li> <li>ii. at the likelihood assessed would <i>"...give rise to a score above ALARP..."</i> (i.e. in the "intolerable" range) and/or</li> <li>iii. that <i>"...economic impacts can be seen to be at an unacceptable level"</i>; and</li> </ul> <p>d) how this tidal effect of traffic compression has been taken into consideration in assessing risk and effects of development in relation to economic and commercial aspects of shipping and port activities, (with reference to the [REP5-071] D5</p>	<p>Further to this, then analysis presented in association with the video vessel traffic animations at Appendix 41 to Deadline 6: AIS Animations Note, do not show a discernible difference in vessel transit time / frequency and HW.</p> <p>As no evidence was presented by IPs this issue, no additional analysis was undertaken at the time of the NRA.</p> <p>e) The Applicant notes that the NRA Addendum did not assess the hazards in which a glancing collision (which the Applicant would determine was a Most Likely outcome of a collision hazard), resulted in the sinking of a fishing vessel, and that this scenario would be considered a worst credible outcome of a fishing vessel collision hazard.</p> <p>In terms of how the realised hazard cost is split, the damage cost of a hazard occurring is assigned to the property consequence and other costs (such as delay to shipping and port operations) would be considered within the consequence to Stakeholders / Business category.</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		submission by POTL/LGPL); and  e) how in detail the NRA Addendum takes account of potential financial or economic loss to stakeholders or property interests as a consequence of glancing collision causing sinking of a fishing vessel and any resulting delay to shipping and port operations.	
3.12.33	The Applicant	<p><b>Assessment of economic effects</b> [REP1-148] by LGPL/PoTLL section 4 maintains that:  <i>“proposals are likely to result in significant impacts on commercial shipping, with resulting impacts on the efficient operation and thus competitiveness of their respective port and logistics facilities, contrary to the objectives of the Ports NPS and EN-3. Such impacts comprise the following components:</i></p> <ul style="list-style-type: none"> <li>Increased journey distance and duration for certain types of vessels, and during certain sea conditions, resulting from a reduction in navigable</li> </ul>	<p>The Applicant maintains that given the negligible impact on vessel routing, and that it is not considered necessary as a result of the introduction of the SEZ any economic impact will also be of a negligible magnitude. Notwithstanding this the Applicant has undertaken an illustrative assessment through reference to material submitted by IPs during the examination process. This illustrative assessment is presented at Annex C to Appendix 26 of this Deadline 6 submission.</p>



PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>width of the 'inshore channel'</p> <ul style="list-style-type: none"> <li>• Reduced accessibility to the NE Spit pilot boarding station as a result of the reduction in navigable width of the inshore channel, and thus reliance on alternate routes/pilot boarding stations which may give rise to additional congestion and journey distance/duration (for ships and pilots)</li> <li>• Reduced resilience to adverse weather conditions and sea states as a result of the inability to utilise safely the NE Spit pilot boarding station by certain types of vessels."</li> </ul> <p>The Written Representation goes on to maintain that "the IPs contend that it is of critical importance that the NRA and PTBSR provide a robust assessment of the potential implications of the proposed development on shipping and that such assessment informs further assessment of economic impacts on shipping and port activities. It is the IPs'</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>view that such an economic assessment should be submitted by the Applicant as additional information to inform the application.”</p> <p>In [REP5-071] D5 submission POTL/LGPL notes that the Applicant has not produced a quantitative assessment of potential economic effects of the TEOW proposals on port activity in its application documents, arguing that ‘the lack of regard to economic loss to the shipping and navigation industries is contrary to national policy’. The submission continues to argue that “...unforeseen delays such as those which may occur as a result of loss of resilience of pilot boarding operations ...have the potential to affect the commercial decision-making of suppliers regarding the choice of ports etc.” and that the “...Thurrock, and indeed the wider South Essex, economy ... may be highly sensitive to proposals which have a detrimental effect on the efficient</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>operations of ports and shipping.” POTL/LGPL make specific representation about time-sensitive shipping such as cruise passenger shipping and perishable cargo shipping.</p> <p>Is the Applicant willing and able to submit such an economic assessment to the Examination at D6?</p>	
3.12.34	The Applicant	<p><b>“Normal” or “Limit” states</b></p> <p>The answers given at ISH8 and recorded by the Applicant in REP5-018 paras 82 <i>et seq</i> do not specifically address the question of how and to what extent the risk assessment has taken into account “limit-state” qualitative scenarios combining worst MetOcean conditions in which pilot transfer operations can take place at NE Spit, including:</p> <ul style="list-style-type: none"> <li>• poor visibility; and</li> <li>• encounters involving vessels most restricted in ability to manoeuvre by reason of draught, windage, fishing, towing, etc.; and</li> <li>• ship’s master unfamiliar with the local</li> </ul>	Please see Annex C of this Appendix for supplementary note.

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>waters; and</p> <ul style="list-style-type: none"> <li>• technical or communications problems encountered with pilot transfer.</li> </ul> <p>The notes of the 29 March 2019 Hazard Workshop appear to be silent on assessment of such combination of circumstances in connection with defined hazards. Would the Applicant please provide:</p> <p>a) written workings (not merely tabulated numbers) of assessment of the most likely consequence of a limit state combination of effects for the top 4 hazards with the proposed TEOW in place subject to SEZ as proposed;</p> <p>b) a reasoned assessment of frequency of occurrence in construction phase in each case 1-4 above;</p> <p>c) clarification of the specific risk controls applied in assessing the inherent and residual risk in each case 1-</p>	

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>4 in construction phase;</p> <p>d) explanation for the differential between most likely and worst credible scores for these top 4 hazards 1-4;</p> <p>e) justification why the doubling of likelihood for a class 1 or 2 collision hazard has resulted in a small percentage change in the risk score calculated by the software;</p> <p>f) examples in the top 4 hazard assessments 1-4 where the likelihood and consequence scores are close to the threshold for the next category e.g. category L2 to L3 or C2 to C3; and</p> <p>g) examples in the workshop where a "what-if" feedback loop or iteration took place to test the sensitivity (and thereby robustness) of assessment.</p>	
3.12.35	The Applicant	<p><b>Tolerability of Risk with catastrophic consequence</b></p> <p>In REP1-024 Response to ExQ1.12.10 the</p>	<p>a) comment on this [REP5-012] comment on consequence of NRAA Hazard #1; and</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:																		
		<p>Applicant states that 'a catastrophic consequence hazard which occurred more than once in 100 years would be regarded as intolerable, and the lowest risk score a catastrophic consequence hazard could achieve (at a frequency of greater than 1 in 1000 years) would be 5.1/10 and would 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.'</p> <p>POTL/LGPL contend [in REP5-071] that the basis for scoring of consequence was not clearly understood during the Hazard workshop on 29 March 2019; although at the workshop it was agreed that a 'glancing blow' collision of a Class 1 or 2 vessel with a fishing vessel would result in a sinking, the consequences for stakeholders/Business or Property were not discussed, expanded in the [REP5-071 Appendix F] email from LGPL to Applicant on 5 Apr 2019) as for example the Class 1 or 2 vessel being held</p>	<p>In terms of a most likely occurrence to NRA A Haz #1 then the hazard outcomes were determined and agreed as:</p> <table border="1" data-bbox="1070 513 2065 954"> <thead> <tr> <th></th> <th>Haz Workshop</th> <th>Post Hazard Workshop</th> </tr> </thead> <tbody> <tr> <td>Narrative</td> <td>Glancing Blow</td> <td></td> </tr> <tr> <td>People</td> <td>Minor-Single minor injury</td> <td>Minor-Single minor injury</td> </tr> <tr> <td>Property</td> <td>Minor damage</td> <td>Minor damage</td> </tr> <tr> <td>Environment</td> <td>Negligible-Very Small Spill</td> <td>Minor -Tier 1</td> </tr> <tr> <td>Stakeholders</td> <td>Negligible-No significant effects</td> <td>Minor - Bad local publicity and/or possible short-term loss of revenue</td> </tr> </tbody> </table> <p>The Applicant does not consider the sinking of a vessel to relate to a "most likely" occurrence, but following the workshop and representation from POTLL / DPWLG then hazard consequence scores for the most likely consequence for Environment and Stakeholders / Business were increased to accommodate for the possibility for delay to a vessel involved in an incident due to investigation requirements.</p> <p>b) The Applicant notes reference to ExQ1.1.10, which relates to Natural England and Ornithological Issues, and assume the reference is as noted in the</p>		Haz Workshop	Post Hazard Workshop	Narrative	Glancing Blow		People	Minor-Single minor injury	Minor-Single minor injury	Property	Minor damage	Minor damage	Environment	Negligible-Very Small Spill	Minor -Tier 1	Stakeholders	Negligible-No significant effects	Minor - Bad local publicity and/or possible short-term loss of revenue
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PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p>pending incident investigation and loss of value of perishable goods cargo etc. Would the Applicant please:</p> <p>a) comment on this [REP5-012] comment on consequence of NRAA Hazard #1; and</p> <p>b) re-explain the answer to ExQ1.1.10 in different terms, giving particular clarity to the meaning used respectively for the terms Tolerability and Acceptability, using the example of Hazard ID #1 from the NRA Addendum assuming collision involving a commercial vessel and a fishing vessel with</p> <ul style="list-style-type: none"> <li>i. sinking as the consequence; and</li> <li>ii. crew fatality as the consequence.</li> </ul>	<p>question preamble at ExQ1.12.10.</p> <p>The Applicant notes that the parameters provided in this question by the ExA, relate to consequences to a fishing boat, and as such would be considered in terms of fishing boat collision in Haz ID #4, and not Haz ID #1. The approach of assessing a hazard of one vessel in collision with any other vessel is a valid and standard approach to risk assessment and does not underscore the resulting hazard score.</p> <p>This approach for collision hazards was discussed at pre-hazard workshop meetings, provided in the pre-workshop information pack and agreed at the start of the workshop, is used by the PLA, and by POTLL in the Tilbury 2 DCO NRA. It's use facilitated the IP request to have more vessel type categories, whilst maintaining total hazard numbers to manageable levels (noting that it was only possible within the hazards workshop to address 4 hazards with the IP's in attendance).</p> <p>This methodology scores consequence specifically for the vessel that the hazard relates to – so cannot be said to underscore the consequence. And further, as a collision between two vessels is now considered as two hazards instead of one hazard there is a corresponding increase in the likelihood component of the risk – which is not halved as it relates only to one vessel.</p> <p>Haz ID 4 shows that for Fishing Vessels and Recreational Craft it can be seen</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:																																								
			<p>from the tables below, which are extract from the NRAA Hazard log, that the worst credible hazard outcome is forecast to occur approximately once in 500 years and that this has hazard consequences of multiple fatalities and sinking / floundering / capsized of the fishing vessel.</p> <table border="1" data-bbox="1070 603 2069 1010"> <thead> <tr> <th rowspan="3">Hazard Id</th> <th rowspan="3">Hazard Detail</th> <th colspan="3">Most Likely</th> <th colspan="3">Worst Credible</th> </tr> <tr> <th colspan="3">Likelihood 1 in x yrs</th> <th colspan="3">Likelihood 1 in x yrs</th> </tr> <tr> <th>Baseline Risk</th> <th>Inherent Risk</th> <th>Residual Risk</th> <th>Baseline Risk</th> <th>Inherent Risk</th> <th>Residual Risk</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>Collision Fishing Vessel or recreational craft with another navigating vessel</td> <td>10</td> <td>8</td> <td>9</td> <td>500</td> <td>400</td> <td>435</td> </tr> </tbody> </table> <table border="1" data-bbox="1070 1145 1998 1366"> <thead> <tr> <th>Narrative</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td>Small vessels colliding</td> <td>Collides with larger vessel (WSV, Cargo, etc.)</td> </tr> <tr> <td></td> <td>Glancing Blow / Loss of gear</td> <td>Crossing / Head on Collision</td> </tr> <tr> <td></td> <td>Lighting of WTG - displace fishing vessels</td> <td>Sinking / Foundering / Capsized</td> </tr> </tbody> </table>	Hazard Id	Hazard Detail	Most Likely			Worst Credible			Likelihood 1 in x yrs			Likelihood 1 in x yrs			Baseline Risk	Inherent Risk	Residual Risk	Baseline Risk	Inherent Risk	Residual Risk	4	Collision Fishing Vessel or recreational craft with another navigating vessel	10	8	9	500	400	435	Narrative				Small vessels colliding	Collides with larger vessel (WSV, Cargo, etc.)		Glancing Blow / Loss of gear	Crossing / Head on Collision		Lighting of WTG - displace fishing vessels	Sinking / Foundering / Capsized
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PINS Question number:	Question is addressed to:	Question:	Applicant's Response:		
				Mostly - potting / netting (less likely trawling) (LOA 8-10m)	
	Wake / Wash Impacts	* assumes lights as per Kentish Flats	People	Minor-Single minor injury	Catastrophic-Multiple fatalities
Property	Minor damage-Costs £10k –£100k	Moderate damage-Costs £100k -£1M	Environment	Negligible-Very Small Spill	Minor-Tier 1
Stakeholders	Minor-Bad local publicity and/or possible short-term loss of revenue	Major-National adverse media publicity and/or medium-term loss of revenue	<p>The rationale regarding these scores is as per the notes section of the Hazard Log which states that:</p> <p><i>"Agreement on likelihood of WC outcome was not reached at the workshop. A review of literature published by the Marine Accident Investigation Branch - Analysis of UK Fishing Vessel Safety 1992 to 2006 , shows that for fishing vessels under 12m vessels (typical of those operating in the study area) there were 10 collision/contacts between 1992-2006 that results in vessel loss. The UK under 12m fishing fleet at 2006 was 6119, and therefore the likelihood of</i></p>		

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<p><i>vessel loss (note that most vessels lost did not result in multiple fatalities) was 10 losses for 6119 vessels over 14 years. This gives an incident rate for loss of a fishing vessel from collision/contact of 1 in 12,238 per vessel years. The fleet operating in the study area is around 10 vessels, who also operate in other areas, and as such based on national incidents, it would be expected that the area would have a WC likelihood value at most 1 in 2000 years. Based on the complexity of traffic profile this could be increased to 1 in 1000 years, and when added to recreational craft incidents which show a similar return rate, then a conservative estimate would be around 1 in 500 year likelihood for the WC assessment.</i></p> <p><i>Based on continued navigation (and fishing) of fishing vessels and recreational craft through the windfarm then the workshop agreed that an increase in likelihood for the inherent assessment would be expected of around 20%."</i></p> <p>The resultant risk score for the hazard has been generated for the Baseline, Inherent and Residual profile of risk using the risk matrix provided and the Hazman II Algorithm, which results in risk scores of 4.1, 4.26 and 4.22 respectively.</p> <p>This particular hazard has the following additional risk controls applied to it which include:</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
			<ol style="list-style-type: none"> <li>1. Enhanced Promulgation of Information</li> <li>2. Shipping and Navigation Liaison Group</li> <li>3. Post Consent Monitoring for Operational Phase</li> <li>4. Enhanced Optimisation of TEOW line of orientation and symmetry</li> </ol> <p>As the hazard risk scores are at the low end of the ALARP range, and additional risk controls have been implemented, and no other reasonable controls have been identified and agreed with fishermen or other IP's, the hazard is classified as ALARP and Tolerable, and therefore is deemed acceptable in risk terms.</p>
3.12.36	The Applicant	<p><b>Societal Concerns and tolerability of societal risk</b></p> <p>When questioned at ISH8 about the consequential implications of the top 4 hazards and how the NRA Addendum deals with combination risks, the Applicant's expert witness Dr Rogers answered that the NRA had already "considered the issue" [see REP5-018 Applicant's written confirmation of oral representations at ISH8 para 30].</p> <p>In [REP1-024] Response to ExQ1.12.9 the Applicant notes MCA/DECC 2013 Guidance section 6.2:</p>	<p>As identified by the ExA, guidance such as MGN 543 (M+F) does not specify the methodology for aggregate assessment of risk, and as noted by the Applicant, it sort to address aggregate risk by reference to fatality calculations by vessel type presented in Section 8.6.3. of the original NRA, which are well defined in terms of ALARP boundaries (<math>1 \times 10^{-3}</math> to <math>1 \times 10^{-4}</math> etc.)</p> <p>The Applicant notes that it was possible to provide this aggregate assessment of risk as fatality rates could be calculated, (as identified above) but whilst the MCA/DECC 2013 Guidance section 6.2: advises that aggregate risk should be provided for "all entries into a risk register", no details on methodology or tolerability of any resulting score is proved, such that were scores aggregated it would not be possible to reference the resultant scores with anything. If this were necessary then the specific methodology,</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<ul style="list-style-type: none"> <li>• advises that a (Formal Safety) Assessment “should consider societal risk through two mechanisms: an aggregate of all entries in the risk register; and for Major risks such as collision, contact, grounding and stranding”; and</li> <li>• notes that 6.2 does not “give a specific methodology for considering aggregate risk”?</li> </ul> <p>In regard to Tolerability, the Applicant goes on to state in [REP1-024] that the NRA “sought to address this question through Section 8.6.3 as a means of considering overall levels of risk.” In section 8.6.3 of the NRA [APP-089] the Applicant states:</p> <ul style="list-style-type: none"> <li>• “No defined threshold exists for what constitutes an acceptable level of risk in the maritime domain or for wind farm developments.”</li> <li>• “Consideration of what is deemed as an acceptable risk have been</li> </ul>	<p>including risk matrices, risk definitions, consequence classifications, frequency classifications, risk score tolerability and calculation of risk control effectiveness, including risk control definitions and baseline / inherent / residual risk profiles would need to be standardised and defined for all projects – which they have not been, either in the primary guidance – MGN 543 (M+F), which doesn't provide recommendations on risk assessment methodologies, or the 2013 MCA/DECC Guidance which is an update to document to the original 2005 DTI guidance.. In essence the guidance requests consideration of societal concerns but does not direct the methodology, that should be used or how any results should be interpreted. Though out with this the Applicant has provided such an assessment as relates to fatality rates.</p> <p>b) The original NRA addressed societal concern in relation to fatality rates by ship type as specified in Section 8.6.3 by following a HSE methodology. Within the Appendix 12 to Deadline 6 Submission: Statement of Common Ground – Maritime &amp; Coastguard Agency it was accepted by the MCA under “Tolerability definition and assessment” –that they did not provide guidance in this area and that the HSE standards (related to fatality rates) was appropriate. The original NRA did not assess societal concern against other consequences e.g. property, environment or business from a navigational hazards occurring, as no such methodology is provided either by the MCA, or the HSE guidance [REP5-009] which focuses on realisation of multiple fatalities for societal concern. The NRA A therefore relies on the assessment carried out in the original NRA, as being a worst case assessment, as in the</p>

PINS Question number:	Question is addressed to:	Question:	Applicant's Response:
		<p><i>discussed by ...HSE (see HSE 1999-Reducing Risk, Protecting People)... when the risk relates to the loss of life."</i></p> <ul style="list-style-type: none"> <li>• <i>"Typical values are given for the threshold of acceptability to individuals as 1 x 10<sup>-3</sup>, approximately a 1 in 1000 chance per year per crew person..."</i>.</li> <li>• <i>"...a collision between a fishing vessel and a commercial ship would pose a threat to the fishing boats crew only..."</i></li> <li>• <i>"The figures do however demonstrate that the risk does increase above the baseline scenario as a result of the development"</i>.</li> </ul> <p>It can be seen from the HSE 1999 document, submitted as [REP5-009], that the definition of societal concerns and societal risk is not limited to loss of life. Para 25 to 27 states:</p> <ul style="list-style-type: none"> <li>• <i>"Societal concerns or the risks or</i></li> </ul>	<p>original NRA the SEZ was not in place, however in terms of other consequence categories these have been considered within the NRA A hazard log by individual hazards.</p> <p>The HSE guidance document refers to societal concerns in an overview section on risk and risk management issues which seeks to distinguish individual risks and those affecting many persons. There is description (in paragraphs 25, 27) of how the occurrence of a hazard may have repercussions for the confidence placed in regulatory institutions, but it advises generally that this is an "intensely political" issue. The rest of the guidance document, which explains how the HSE will take its decisions, does not purport to set out any discrete or particular approach which should be applied to account for this issue, particularly in cases such as this one involving navigation risk where MGN543 and the MCA/DECC 2013 Guidance is applied (in respect of which the Applicant has commented previously, as the ExA notes). When advising on criteria which can be adopted for reaching decisions (p. 40 et seq) the HSE guidance focusses on the consideration of societal risk based on annual fatality rates; and has been taken into account through the approach adopted in the project NRA as explained previously. The Applicant does not consider that other issues relating to confidence in regulatory institutions should have any further material effect on the conclusions it asks to be drawn from the NRA and NRAA, including its scoring for identified consequence categories or its approach to aggregate risk</p> <p>c)</p>

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		<p>threats from hazards which impact on society and which, if realized, could have adverse repercussions for the institutions responsible for putting in place the provisions and arrangements for protecting people...Societal risk is therefore a subset of societal concerns."</p> <ul style="list-style-type: none"> <li>• <i>"Hazards giving rise to societal concerns share a number of common features. They often give rise to risks which could cause multiple fatalities; where it is difficult for people to estimate intuitively the actual threat; where exposure involves vulnerable groups...; where the risks and benefits tend to be unevenly distributed, for example....so that less risk may be borne now and by some future generation. People are more averse to those risks and in such cases are therefore more likely to insist on stringent Government regulation."</i></li> <li>• <i>"In addition...there is also, and importantly, a concern that, in the</i></li> </ul>	<p>The Applicant does not consider recreational sea users or fishing boat crews as vulnerable groups as both groups do not meet the definition which within [REP5-009] defining vulnerable groups within the context of "... the young or the elderly or particularly susceptible individuals." Recreational sea users and fishing vessel crews are active participants and actively choose to partake in either water sports for personal pleasure, or fishing for economic reward, and therefore cannot be considered as vulnerable groups.</p> <p>d)</p> <p>As noted by the TFA single manned fishing boats are common in the Thanet Area, and as such the assessed fatality rate for fishing vessel is simply the worst credible hazard likelihood score presented in the hazard log for Haz 4 – namely 1 in 400 years, which was defined in relation to the study are based on reference to national incident rates, which were uplifted to reflect local conditions as follows (which is noted in the hazard log)</p> <p><i>"Agreement on likelihood of WC outcome was not reached at the workshop. A review of literature published by the Marine Accident Investigation Branch - Analysis of UK Fishing Vessel Safety 1992 to 2006 , shows that for fishing vessels under 12m vessels (typical of those operating in the study area) there were 10 collision/contacts between 1992-2006 that results in vessel loss. The UK under 12m fishing fleet at 2006 was 6119, and therefore the likelihood of vessel loss (note that most vessels lost did not result in multiple fatalities) was 10 losses for 6119 vessels over 14 years. This gives an incident rate for loss of a fishing vessel from collision/contact of 1 in 12,238 per vessel years.</i></p>

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		<p>wake of an event giving rise to such concerns, confidence in the ...institutions responsible for setting out an enforcing (these) provisions and arrangements, would be undermined.”</p> <p>Would the Applicant please advise:</p> <p>a) how they consider aggregate risk should be considered; and</p> <p>b) whether and how the NRA or NRA Addendum has considered societal concerns as defined by HSE and quoted above, including but not limited to loss of life; and</p> <p>c) whether recreational sea users and fishing boat crews or any other users of the sea space around the Thanet windfarm may be considered as “vulnerable groups”; and</p> <p>d) In the example of collision between fishing vessel and commercial ship, what</p>	<p>The fleet operating in the study area is around 10 vessels, who also operate in other areas, and as such based on national incidents, it would be expected that the area would have a WC likelihood value at most 1 in 2000 years. Based on the complexity of traffic profile this could be increased to 1 in 1000 years, and when added to recreational craft incidents which show a similar return rate, then a conservative estimate would be around 1 in 500 year likelihood for the WC assessment.</p> <p>Based on continued navigation (and fishing) of fishing vessels and recreational craft through the windfarm then the workshop agreed that an increase in likelihood for the inherent assessment would be expected of around 20%.”</p> <p>e)</p> <p>The Applicant notes that the ExA is referring to an “incident” of sinking or grounding that results in outcomes of cargo or fuel loss, injury or fatality, delay or consequential reputational impact for London or Sheerness ports. Hazards of grounding are considered in Haz ID 13-18. In navigation terms sinking is a result of hazard occurring, whether that be collision, contact, or grounding and is therefore covered in the consequence classifications of these incidents. Other consequence classification of cargo or fuel loss, injury or fatality, delay or consequential reputational impact for London and Sheerness Ports were fully considered in the consequence categories of People, Property, Environment or Stakeholder / Business.</p>

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		<p>the assessed inherent risk is of loss of life in relation to occurrence per year per crew person.</p> <p>e) whether and how an incident involving any combination of sinking, grounding, spillage of cargo or fuel, injury or fatality, delay or consequential reputational impact on for London or Sheerness ports has been assessed.</p>	
3.12.37	The Applicant	<p><b>Meaning and threshold of 'significance' in regard to impacts on shipping and navigation</b></p> <p>In REP5-018 at para 50 the Applicant argues in relation to impacts to "<i>less strategically important shipping routes</i>" that they do not accept that there would be negative impacts but "<i>if there were, they have been minimized and could not be described as significant.</i>"</p> <p>Would the Applicant please explain what they mean by the term "significant" in this example and specify the threshold of significance in this context. (The term</p>	<p>The reference to "less strategically important shipping routes" is taken from NPS EN-3 paragraph 2.6.163, which emphasises the need for a "pragmatic" approach which seeks negative impacts to be "minimised" to as low as reasonably practicable. Policy does not require negative impacts to be avoided; and indeed recognises that there "may be some situations where reorganisation of traffic activity might be both possible and desirable when considered against the benefits of the wind farm application".</p> <p>The Applicant has consistently explained that it does not consider that the project would have any negative impacts given the remaining sea room that would be available to allow the maintenance both of ship passage and pilotage operations. It has, however, given further consideration to the nature of the impacts which the IPs allege would occur and has explained in the Shipping Commercial Assessment at Appendix 26 Annex C the reasons why it does not consider any such effects could be judged to be significant</p>



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		'significant' has been used in the Application and during the Examination in multiple ways in multiple contexts.)	
3.12.38	The Applicant	<p><b>Definition of the ALARP range</b>                      The definition of the ALARP range given in [APP-089] NRA Annex B Methodology is the band of risk scores between "intolerable" and "acceptable" as explained at page B-3: <i>'Every effort should be made to mitigate all risks such that they lie in the "acceptable" range. Where this is not possible, they should be reduced to the level where further reduction is not practicable. This region...is described as the ALARP region...where they can be tolerated, albeit efforts should be made when opportunity presents itself to further reduce their risk score.'</i></p> <p>Would the Applicant please clarify and confirm:                      a) that the purpose of the hazard workshop held on 29 March 2019 was <i>"to understand whether the project</i></p>	<p>The applicant has defined "hazards" and not "risks", as mandated by the IMO FSA, though in relation to the ExA question it is understood these are one and the same – albeit that the Applicant would note the common use of "risks" within HSE assessment have a different definition to the IMO FSA methodology for the characterisation of "hazards" / "risks", which is an important difference. This is carried through the Applicants answers to the following questions.</p> <p>a) This particular statement at Para 53 of [REP5-18] is made in reference to the findings of the original NRA that determined all hazards to be at ALARP or lower. From the Applicant's perspective it would be expected that the risks for following the introduction of the SEZ would only go down from those assessed in the NRA, however as this was an opportunity for IPs to directly input into the scores, and noting that the methodology varied slightly from that adopted in the NRA, the primary goal was determine that once stakeholder views were incorporated , and considering the SEZ, could the project still be considered in the ALARP range. This was conclusively determined through that process.</p> <p>b) that 'ALARP' as a term used throughout the Applicant's representations describes a risk or set of risks, tolerable only if mitigated as far as is reasonably practicable; and</p>

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		<p>would remain within the ALARP range" as stated at para 53 of [REP5-018] is intended to mean that no risks would exceed the ALARP range (i.e. no risks would be in the 'intolerable' range) after risk controls/mitigation have been applied; and</p> <p>b) that 'ALARP' as a term used throughout the Applicant's representations describes a risk or set of risks, tolerable only if mitigated as far as is reasonably practicable; and</p> <p>c) that if an inherent risk is assessed to lie within the ALARP range, every effort should be made to find further mitigation to reduce the risk where reasonably practicable to the "acceptable" range below the "ALARP" range; and</p> <p>d) that mitigating a risk to fall within the ALARP range is necessary but not sufficient if the risk can be further</p>	<p>The Applicant confirms that ALARP applies to a range of risk scores identified with the NRA and NRA to hazards resulting in a risk score of between 4 – 6.9. The ALARP Range is broken down further within the IMO FSA methodology, as identified in "Guidance On The Assessment Of The Impact Of Offshore Wind Farms: Methodology for Assessing the Marine Navigational Safety Risks of Offshore Wind Farms", which at 18 gives an example Risk Tolerability Matrix (presented below), in which the "ALARP" range is termed – Tolerable with modification, Tolerable with Additional Control and Tolerable with Monitoring. This indicates that when hazards are at the low end of the ALARP zone, as is noted for the NRA A, that hazards can be tolerable with monitoring, though towards the higher end of the ALARP range more restrictive risk controls (termed here as modifications) are required. This approach, which is adopted in MCA guidance, clearly mandates that ALARP levels hazards can be tolerable with monitoring in place.</p>

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		<p>reduced by application of additional reasonably practicable controls/mitigation; and</p> <p>e) in this context of understanding the definition of ALARP as an objective to mitigate risk as low as reasonably practicable rather than as a range of tolerability subject to applied mitigation, what is meant by the Applicant's expert Dr Rogers [in REP5-018 para 113] that <i>"the project was ALARP prior to the introduction of the SEZ"</i>?</p>	<table border="1" data-bbox="1064 395 2016 1077"> <thead> <tr> <th data-bbox="1064 395 1115 427">Risk Criticality</th> <th data-bbox="1115 395 1496 427">Condition</th> <th data-bbox="1496 395 2016 427">Explanation</th> </tr> </thead> <tbody> <tr> <td data-bbox="1064 427 1115 518">7</td> <td data-bbox="1115 427 1496 518">Unacceptable</td> <td data-bbox="1496 427 2016 518">Risk must be mitigated with design modification and/or engineering control to a Risk Class of 5 or lower before consent</td> </tr> <tr> <td data-bbox="1064 518 1115 609">6</td> <td data-bbox="1115 518 1496 609">Unacceptable</td> <td data-bbox="1496 518 2016 609">Risk must be mitigated with design modification and/or engineering control to a Risk Class of 5 or lower before consent</td> </tr> <tr> <td data-bbox="1064 609 1115 700">5</td> <td data-bbox="1115 609 1496 700">Tolerable with Modifications</td> <td data-bbox="1496 609 2016 700">Risk should be mitigated with design modification, engineering and/or administrative control to a Risk Class of 4 or below before construction</td> </tr> <tr> <td data-bbox="1064 700 1115 791">4</td> <td data-bbox="1115 700 1496 791">Tolerable with Additional Controls</td> <td data-bbox="1496 700 2016 791">Risk should be mitigated with design modification, engineering and/or administrative control to a Risk Class 3 or below before operation</td> </tr> <tr> <td data-bbox="1064 791 1115 882">3</td> <td data-bbox="1115 791 1496 882">Tolerable with Monitoring</td> <td data-bbox="1496 791 2016 882">Risk must be mitigated with engineering and/or administrative controls. Must verify that procedures and controls cited are in place and periodically checked</td> </tr> <tr> <td data-bbox="1064 882 1115 973">2</td> <td data-bbox="1115 882 1496 973">Broadly Acceptable</td> <td data-bbox="1496 882 2016 973">Technical review is required to confirm the risk assessment is reasonable. No further action is required</td> </tr> <tr> <td data-bbox="1064 973 1115 1077">1</td> <td data-bbox="1115 973 1496 1077">Broadly Acceptable</td> <td data-bbox="1496 973 2016 1077">Technical review is required to confirm the risk assessment is reasonable. No further action is required</td> </tr> </tbody> </table> <p data-bbox="1064 1117 2038 1268">c) If an inherent hazard ("Risk") lies within an ALARP range, and if it is demonstrated that Embedded risk controls have been applied that have reduced the hazard risk scores this particular hazard, then an inherent hazard risk score can be said to fall within the ALARP range.</p> <p data-bbox="1064 1308 2038 1380">d) As noted above, ALARP level hazards can be considered Tolerable with Monitoring in place, with a condition in place that a "commitment to</p>			Risk Criticality	Condition	Explanation	7	Unacceptable	Risk must be mitigated with design modification and/or engineering control to a Risk Class of 5 or lower before consent	6	Unacceptable	Risk must be mitigated with design modification and/or engineering control to a Risk Class of 5 or lower before consent	5	Tolerable with Modifications	Risk should be mitigated with design modification, engineering and/or administrative control to a Risk Class of 4 or below before construction	4	Tolerable with Additional Controls	Risk should be mitigated with design modification, engineering and/or administrative control to a Risk Class 3 or below before operation	3	Tolerable with Monitoring	Risk must be mitigated with engineering and/or administrative controls. Must verify that procedures and controls cited are in place and periodically checked	2	Broadly Acceptable	Technical review is required to confirm the risk assessment is reasonable. No further action is required	1	Broadly Acceptable	Technical review is required to confirm the risk assessment is reasonable. No further action is required
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			<p>risk monitoring and reduction during operations - Risk must be mitigated with engineering and/or administrative controls. Must verify that procedures and controls cited are in place and periodically checked". The Applicant notes this and has committed to an additional risk control that seeks to provide this level of control – the "Shipping and Navigation Liaison Group". It is therefore demonstrated that it is sufficient to reduce risks to ALARP, with embedded and additional risk controls in place, so long as additional control are not practical.</p> <p>e) The Applicant notes that within the context of the NRA and NRA A the SEZ is not considered a risk control measures but is a change to the baseline condition of the TEOW. The original NRA findings were that all hazards were assessed to be at ALARP or lower, and that this assessment remains valid whether the SEZ was put in place or not, and out with of this, and without further detailed analysis, it is Applicants view that the cost the SEZ is disproportionate to the reduction in risk generated by it and therefore it would not pass the ALARP criteria as an effective risk reduction measures.</p>
3.12.39	The Applicant	<p><b>Pilot transfer bridge simulation</b> In the [REP5-071] D5 submission by POTL/LGPL the HR Wallingford report makes the case that a new simulation should be carried out as an essential prerequisite of a revised NRA, and that report includes an outline content for such a simulation.</p>	<p>a) the MGN 543 and MCA DECC 2013 requirements for simulation; and</p> <p>The Applicants notes the ExA comments on the MGN, and that where referenced to subsection 2d is made, this is referring to computer simulation (such as is undertaken in Collision Risk Modelling) and not Full Bridge Simulation – which the applicant has provided within the original NRA and which is also provided, in relation to the SEZ, as an updated assessment for</p>

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		<p>The ExA notes that in section D1 "Appropriate Assessment" in the MCA/DECC 2013 NRA methodology guidelines that are referred to in MGN543, (which includes simulation if justified by the perceived risk profile of proposals) para D1.2 advises that the purpose of such assessment being (in addition to proving feasibility of navigation activities) to</p> <ul style="list-style-type: none"> <li>• quantify risk ("Produce a quantitative or qualitative value, acceptable to Government, of the change in risk caused by the development...");</li> <li>• to "determine the sensitivity of the risk to the conditions and the risk factors...";</li> <li>• "to identify, evaluate and decide on appropriate risk controls"; and</li> <li>• to close the hazard log and to develop the Risk control log.</li> </ul> <p>Para D1.5 discusses the use of scenario to set up assessment and D1.6 sets out a</p>	<p>Deadline 6 Appendix 42.</p> <p>The Applicant is cognisant of the fact that Full Bridge Simulation does not appear to be referenced within the MCA MGN 543 (M+F), despite it being specifically called out in the MCA/DECC 2013 NRA methodology guidelines, and also the older, but clearer 2005 DTI guidance. As such the latest guidance MCA MGN 543 does not mandate the need for full bridge simulation at all, however the Applicant undertook such an assessment, which proved feasible of pilot transfers at NE Spit with the PIER RLB, which was subsequently reduced in the application RLB, and further reduced with the implementation of the SEZ.</p> <p>The Applicant also notes that there may be further confusion with regards to the hierarchy of appropriate assessment in the MCA/DECC 2013 guidance, in which Full Bridge Simulation is level 3 out of 4 but termed a "Specific Traffic Bridge Control Simulation".</p> <p style="padding-left: 40px;">b) the content proposed by POTL/LGPL for such a simulation to validate the Risk control proposed by introduction of an SEZ?</p> <p>The Applicant has responded to the simulation content proposed by POTLL / DWPLG, and noted that POTLL / DPWLG have omitted to provide responses on navigation safety matter, preferring to rely on representations from PLA / ESL and LPC, except that they advise a further full bridge simulation be carried out to assess navigation safety – a view the Applicant does not agree</p>

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		<p>hierarchy of appropriate assessment including Traffic Simulation at 2b and Traffic Bridge Control Simulation at 3 out of 4 potential steps.</p> <p>MGN 543 subsection 2d (xvi) refers to assessment of the cumulative and individual effects of multiple factors including "Researched opinion using appropriate computer simulation techniques with respect to the displacement of traffic and, in particular, the creation of 'choke points' in areas of high traffic density..."</p> <p>Would the Applicant please comment specifically on:</p> <p>a) the MGN 543 and MCA DECC 2013 requirements for simulation; and</p> <p>b) the content proposed by POTL/LGPL for such a simulation to validate the Risk control proposed by introduction of an SEZ?</p>	<p>with.</p> <p>The Applicant has provided a detailed response to the ExA Action for specification of any additional Full Bridge Simulation requirements at [REF#] to this Deadline 6 submission.</p>
3.12.40	Maritime	<b>Final recommendation from competent</b>	This question is noted by the Applicant and we welcome the ExA's request

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.	and Coastguard Agency (MCA); Trinity House (THLS)	<p><b>maritime authorities</b> MCA's D5 submission [REP5-063] recommends that in order to mitigate risks to as low as reasonably practicable in the ALARP range, the Applicant should consider <i>"increasing the sea room between the NE Spit buoy and the SEZ boundary to a distance that is acceptable for continued safe pilot transfer operations"</i>.</p> <p>The ExA wishes to note that there is no longer any time remaining in the Examination timetable for further material change to the application nor for additional mitigation involving alteration of pilot transfer locations (which may need further simulation to demonstrate feasibility of safe navigation and pilot transfer operations in limit-state conditions and in any case could not be recommended to the Secretary of State as risk mitigation without additional Navigation Risk Assessment).</p>	for an independent perspective and recommendation from MCA and THLS noting, in particular, their statutory responsibilities and expertise relevant to this application.

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		<p>Therefore, the ExA seeks a final recommendation from the MCA and THLS on the overall acceptability of the NRA, the NRAA and the application (subject to the SEZ and other proposed risk controls as they currently stand) from the perspective of shipping and navigation safety in all MetOcean Conditions in which PLA pilot operations are able to operate at present. On the basis of the project as proposed, including the NRA, NRAA and other submitted evidence, what is the final recommendation of the MCA and THLS to the ExA/SoS in respect of the acceptability of the proposed development in navigation safety terms?</p>	



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