

Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Annex A to Appendix 3 to Deadline 2 Submission:
Tabular Responses to Shipping and Navigation
Written Representations

Relevant Examination Deadline: 2

Submitted by Vattenfall Wind Power Ltd

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Appendices referred in this document

Appendix 2 to Deadline 2 Submission	Appendix 2 – Applicant’s response to ISH2 Action Point 8 – Proposed amendment to the Red Line Boundary;
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Appendix 3 to Deadline 2 Submission	Appendix 3 – Applicant’s Response to Written Representations on the theme of Ports/Shipping Routes;
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Appendix 4 to Deadline 2 Submission	Appendix 4 – Applicant’s Response to Written Representation - Pilotage; and
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Appendix 5 to Deadline 2 Submission	Appendix 5 - Applicant’s Response to Written Representation – Navigation Risk Assessment Methodology and Consultation.
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1 Introduction

- 1 This annex provides a tabular summary of the issues raised within Written Representations (WRs) which relate to Shipping and Navigation.
- 2 Due to the nature of the WRs made and the fact that many of them make similar points or contain the same content, the Applicant has set out its comments in sections that address specific themes:
 - Vessel routes:
 - Minimum safe distance;
 - Sea room; and
 - Re-routing.
 - Proposed capital dredging in the area; and
 - Collision risk.
- 3 For clarity the Applicant can confirm that the following WRs are not discussed in this document:
 - Trinity House Deadline 1 response is limited to DCO matters, a point by point response to which is provided in Appendix 1 to the Applicant's Deadline 3 submission.
- 4 Maritime and Coastguard Agency Deadline 1 response is limited to specific Action Points and responses to ExQs, which are addressed in Appendix 11 and Appendix 10 of the Applicant's Deadline 2 Submission respectively. However, some of these points are included in this document in addition to Appendices outlined above.
- 5 This document (Annex A to Appendix 3) should also be read in parallel with Appendices 2 to 5 of the Applicant's Deadline 2 Submission which address the other dominant shipping and navigation themes:
 - Appendix 2 – Applicant's response to ISH2 Action Point 8 – Proposed amendment to the Red Line Boundary;
 - Appendix 3 – Applicant's Response to Written Representations on the theme of Ports/Shipping Routes;
 - Appendix 4 – Applicant's Response to Written Representation - Pilotage; and
 - Appendix 5 - Applicant's Response to Written Representation – Navigation Risk Assessment Methodology and Consultation.

2 Maritime and Coastguard Agency (REP1-109)

Interested Party	WR point	WR	Response
MCA	Action 17	<p>The MCA believes that, as the simulation utilised experience pilots in familiar waters, the results are likely to under-represent the possibility of unfamiliar overseas masters onboard ships. This has to be taken into account when assessing the reliability of the simulation study, and whether it reflects a true picture of the potential scenarios.</p>	<p>This WR is addressed in [Section No. 6] of Appendix 25, Annex N and Section No. 18 of Appendix 28 of the Applicant’s Deadline 1 Submission of the Deadline 1 submission (PINS Refs REP1-054 and REP1-012).</p>
MCA	Action 17	<p>In addition, the analysis detected several examples where the remaining sea room would not be sufficient. The report states the alternative would be to relocate the North East Spit station, but this option has been removed from the NRA because it has significant implications on time, distance, rostering and working hours etc.</p>	<p>The simulation did not identify examples where the remaining sea room would not be sufficient and the Applicant requests clarification on this point.</p> <p>The Applicant notes that one run resulted in a narrow breach of proximity criteria albeit the vessel had completed the pilot transfer and was returning to heading in a safe manner.</p> <p>It should also be noted that the simulation was undertaken prior to the boundary change which provides for greater sea room in this area.</p>

Interested Party	WR point	WR	Response
MCA	ExA Q 1.12.3	As stated as part of Action 17, the MCA believes that there are limitations to the reliability of the simulation study, as it used experience pilots in familiar waters and is unlikely to reflect the variety of real life scenarios experienced in the marine environment at that location.	<p>This WR is addressed in [Section No. 6] of Appendix 25, Annex N of the Deadline 1 submission (PINS Ref REP1-054).</p> <p>The Applicant notes that familiarisation of practitioners (and the embedded nature of PLA Pilots and ESL coxswains in any transfer scenario) is a beneficial factor in the real world scenario and also notes that the mariners navigating within this area are sufficiently qualified to navigate and communicate.</p>

3 Port of London Authority (REP1-142)

WR point	WR	Response
4.1	<p>The siting of the proposed extension to the Wind Farm to be authorised by the DCO causes the PLA great concern as regards risks to navigation and shipping routes. The sea lane in between the existing Wind Farm and North Foreland (“the Inner Route”) is already narrow due to the shallow waters off the coastline and the presence of the Wind Farm. The proposed extension will encroach onto some of the key routes into the Port of London and Peel Ports Medway areas and provide restrictions for certain sizes and drafts of vessel on their entries into the Port. Masters bringing their vessels into the Port will always require a safe area of sea room from the coastline, from the Wind Farm and from other vessels. Chapter 10 of the Applicant’s Environmental Statement (“ES”) shows the constrained path vessels follow in this area and it also shows the ‘buffer zone’ that Masters put between themselves and the Wind Farm.</p>	<p>The Applicant can confirm that these WRs form the basis of the document submitted at Appendix 3 of this Deadline 2 submission.</p> <p>In brief it is the Applicant’s position that the necessary searoom required to accommodate the existing vessel traffic, and therefore the inshore route, remains available. Appendix 3 utilises calculations as provided by the London Pilots Council to provide context to this position.</p>
4.2	<p>At paragraph 7.1.1, the Applicant’s Navigation Risk Assessment (document reference 6.4.10.1) (“NRA”) outlines 0.5nm as “the minimum safe distance considered acceptable by ships masters to pass a wind farm”. The PLA contest this value and would argue that this figure will vary depending on a whole variety of conditions including weather and tidal conditions and congestion in the area. The PLA would suggest a distance of 2nm for the ‘lane’ width with a 1nm buffer between the lane and the extended Wind Farm as a more appropriate figure; this distance</p>	

WR point	WR	Response
	<p>is needed as the area concerned is used for pilotage operations, not merely vessels passing through.</p>	
<p>4.3</p>	<p>The siting of the proposed extension, and in particular its western-extent, will cause Masters to redirect their vessels in certain situations to avoid the Inner Route. At paragraph 7.1.2 of the NRA, it is suggested that the extent of the increase in journey for a vessel which does re-route by passing to the east and then to the north of the Wind Farm would be at least a distance of 11nm. The PLA contest this figure, and suggests that the increase is more likely to be 14nm journey distance if the additional distance to the North East Spit is included with a corresponding increase in the time take for each vessel journey. It would also raise safety concerns with additional traffic passing to the east and the north of the existing Wind Farm.</p>	
<p>4.4</p>	<p>At ISH2, the ExA indicated that it would like to see an aggregate of this value as well as an analysis of the projected aggregate additional shipping costs to be caused by these re-routings. The PLA does not have the data available itself to make such a calculation prior to Deadline 1 but will continue to work with other parties to determine what projections can be made in respect of additional shipping costs. The Inshore Route may not become impassable as a result of the TEOWF but, in the view of the PLA, which has extensive practical and recent day-to-day experience of working with Masters in this area, a significant number of Masters would be unwilling to accept the increased risk to their vessels and would therefore avoid it.</p>	

WR point	WR	Response
4.5/4.6	<p>The ExA requested that projected data on the use of the Port and the impact of any proposed works in the area be provided.</p> <p>The key potential works which could be undertaken by the PLA over the lifetime of the extended Wind Farm would be the potential dredging of either Fisherman’s Gat or the North Edinburgh Channel. The PLA is currently carrying out work to assess the effects of these and no decision has been made as to which of the proposals to take forward. The PLA has recently undertaken a Route Option Analysis to determine which channel (Fisherman’s Gat/North or South Edinburgh) would be most cost effective to dredge and maintain, and will be undertaking pilotage simulation and sediment transport modelling in the near future. The PLA is committed to taking the proposal forward and would expect to finalise the project in approximately 2 years. The Fisherman’s Gat is most likely to be the most cost effective option and the project is estimated to cost in the region of £5M. If selected, it is proposed to dredge the Fisherman’s Gat to 10m below chart datum, for vessels of routinely up to 12m during higher tides.</p>	
4.7	<p>Evidently, as set out above, the PLA does not accept the Applicant’s position that this inshore channel will be used by the same number of vessels after the Scheme is implemented as before. However, if that argument is accepted, there would be the same number of vessels slowing down and changing direction – 5500 to 6000 vessels per year at a conservative estimate – but in a smaller area of sea room. In reality, the presence of an increased number of vessels serving the wind farm will mean that</p>	

WR point	WR	Response
	<p>there would be a greater number of vessels in that smaller area. This will inevitably lead to an increase in risk of vessel collisions.</p>	
5.7	<p>A key concern of the PLA and ESL is the reduction in sea room. The closest point of the extended wind farm to the NE Spit pilot station would be 1.7 miles (leaving approximately 2.1nm to the most eastern extent of the Margate Roads anchorage). At this point there is a lot of crossover traffic which needs to be taken into account.</p>	<p>The Applicant has presented a sea room plot at Appendix 28, Annex B to deadline 1 Submission: NE Spit Sea Room (PINS Ref Rep1-044), which gives details of sea room from the TEOF in relation to the revised RLB. The Applicant notes that the London Pilot Council, a body representing serving PLA pilots who board and landing vessels at NE Spit pilot boarding station advise the need from “1 mile to 1.7mile” plus a safety buffer of 0.5 miles.</p>
5.8	<p>It is the experience of the PLA and ESL’s coxswains that launches frequently suffer with interaction between their radar and the Wind Farm. When a pilot launch is operating between the Wind Farm and a ship, with the ship in close proximity, the radar becomes less effective. High sided vessels will often severely impede Very High Frequency (VHF) communication with the shore side operation (including Vessel Traffic Services (VTS)), the ship itself and other vessels on the side of the ship being served.</p> <p>In effect, the pilot boat can be blindsided. The coxswain will have to be confident that little or no deviation will be necessary during an act of pilotage. The reduction in sea room and, therefore, the potential increase in congestion present a significant planning issue for the coxswain with regards to a confident ‘clear path’</p>	<p>Radar interaction noted by pilot cutter crews, is due to the proximity of the pilot vessel to the larger vessel when boarding a pilot (likely causing radar reflections) and not the existing windfarm – otherwise it would be expected that the interference would be present at all times whether alongside a “high sided” ship or not. As offshore wind turbines provide a clear and fixed reference (as opposed to a transiting vessel) interaction and distortion of radar is commonly most obvious in relation to a standard wind turbine layout, however it is the case that the interaction seen when a pilot cutter is alongside a “high sided” ship will also occur in relation to navigation buoys, other passing vessels or even the</p>

WR point	WR	Response
	<p>before he engages with the ship. This is an issue that the existing sea room allows the PLA and ESL to plan for and work with. However, with a reduction in available sea room between the pilotage boarding area and TOW this would become a more significant safety concern.</p>	<p>Thanet coastline (were the pilot cutter close alongside the landward side of a “high sided” ship).</p> <p>With regards to VHF effects, the Applicant would state that the presence of the TEOWF would not increase the severity of any loss of VHF signal, to the shore including to PLA VTS, from a pilot cutter whilst it is engaged in boarding a pilot on the seaward side of a “high-sided” ship. If the VHF issue were to continue presenting a problem to pilot boarding operations, and whilst it is not associated with the TEOWF, the Applicant would be willing to make available a suitably positioned wind turbine for the PLA / ESL to place a VHF repeater on to seaward of the pilot boarding station which could help alleviate this issue and reduce baseline risk.</p>
<p>5.9</p>	<p>These risk factors mean that the coxswains need a significant amount of sea room because there can be a period of no communication when everything needs to stay the same. If a captain suddenly changes route, the safe lee can be lost, personnel can be exposed to possible injury or a pilot launch can easily be damaged. It is ESL’s case that there will not be sufficient safe sea room at North East Spit if the western expansion of the wind farm is permitted.</p>	<p>The Applicant notes that the London Pilot Council, a body representing serving PLA pilots who board and landing vessels at NE Spit pilot boarding station advise the need from “1 mile to 1.7mile” plus a safety buffer of 0.5 miles.</p>
<p>5.10</p>	<p>The PLA and ESL argue that the impact of this is for pilotage operations to be pushed out to either NE Goodwin or the Tongue. In addition, the location of the Tongue will need to be</p>	<p>The Applicant firstly notes that there is sufficient sea room in vicinity of NE Spit for ongoing pilot transfers</p>

WR point	WR	Response
	<p>pushed further north, out into less sheltered waters. The NE Spit boarding area has been strategically placed to afford the service maximum shelter, particularly with MetOcean conditions WNW through to SE. This can allow ESL to continue operations when alternative boarding areas are unable to operate. If launch crew and pilots are forced to operate with an increase in passage times and a potential for greater exposure to adverse weather conditions, this increases the likelihood of personnel fatigue.</p>	<p>and therefore this station retains the same availability.</p> <p>The presence of the Tongue (formerly called the NE Spit Deep Water Pilot Boarding Station), also remains operational with the extension in place and could, where necessary, provide additional pilot boarding capacity for large vessels as it is currently not frequently used. With reference to the off station data provided at Deadline 1 for SUNK and NE Spit Pilot Transfer stations further information on this is requested to understand the relationship between these stations, NE Goodwin and Tongue.</p>
<p>5.11</p>	<p>The movement of pilotage operations away from North East Spit will have economic impacts on the PLA, ESL and the users of its pilotage services.</p> <p>At a basic level, if the pilotage boarding station is moved further out to sea, each individual pilotage act will take longer. This has a knock-on effect in terms of the number of pilots and number of launches which will be required to enable the PLA to continue its pilotage services.</p>	<p>Whilst the Applicant maintains that NE Spit remains usable as a pilot boarding station it notes that analysis was undertaken in the Pilotage Study as submitted in the PEIR to identify impacts of relocating pilot boarding stations</p>
<p>5.12</p>	<p>The PLA and ESL pilotage services currently operate at a service level of 95% so would not be able to serve more vessels with the existing complement of pilots and launches without incurring delays.</p>	<p>Whilst this is noted the Applicant requests that PLA and ESL provide further information on how they plan to adapt with the increasing numbers of predicted vessel movements as provided by POTLL and DPWLGW and, specifically, what thresholds of vessel</p>

WR point	WR	Response
		numbers/movements necessitate a change in existing pilots and or launches.
5.13 & 5.14	The average additional time in a pilot boat if using the re-located Tongue instead of the NE Spit is 17 minutes. This gives an additional 1680 hrs of pilotage time per year spent in the pilot boat. This equates to more than 1.5 full time equivalent pilots, therefore an additional 2 full time pilots would be required to cover this, and the cost of the additional resource would need to be passed on to the customers through increased pilotage charges.	This is queried and with reference to Table 3 of the Pilotage Study where the difference in distance between NE Spit and Tongue is 2.9nm which, at 20kts equates to circa 9 minutes which is approximately half of the time stated by PLA and ESL. It should also be noted that this should be offset against the time saved by the Pilot being boarded at a more straightforward area of the ships passage (ie spending less time on board ship) and also the cost incurred to the vessel of the vessel having to navigate an additional circa 4-6nm into the area of NE Spit and the associated time this incurs(with reference to the steaming time costs stated by POTLL and DPWLGL).
5.15	If NE Goodwin was used instead of the NE Spit, the average additional time in the pilot boat would be only a few minutes, equating to between 300 and 400 additional pilot hours per year.	North East Spit transfer station and North east Goodwin pilot station are both 6.5nm from Ramsgate Breakwater and thus there is no discernible difference in transit time for the pilot launch (Table 3 of the Pilotage Study as submitted in the PEIR ¹). It is recognised that transferring a pilot at NE Goodwin results in the Pilot being onboard the ship for longer than if the transfer were undertaken at NE Spit and Tongue and this is unaffected by the

¹ <https://corporate.vattenfall.co.uk/globalassets/uk/projects/thanet-ext/peir-nov-2017/volume-4/vol4ann10-1-pilotagestudy.pdf>

WR point	WR	Response
		windfarm on the basis that NE Spit continues to have adequate sea room.
5.16	It has not been possible in the time frame to establish the relative use of the Tongue and NE Goodwin if the NE Spit diamond was no longer available.	The Applicant notes this and will respond when this analysis has been undertaken.
5.17	Further economic impacts will be felt when, inevitably, there are an increased number of days where there are no pilotage services available in the PLA area. This consequence is inevitable when the protected North East Spit station is not useable.	<p>The Applicant maintains that the NE Spit station remains unaffected in terms of downtime/off station and that adequate sea room exists for transfers.</p> <p>It should also be noted, with regards to SUNK being off station that NE Goodwin and Tongue form one of three alternatives (the third being NE Spit).</p>
5.18	<p>Based on the information inputted by London Vessel Traffic Services (which manages and oversees the safety of navigation in the area) into the POLARIS database, the following table shows the relative number of days that the NE Spit and Sunk were off station during a 12 month period from 01/01/2017 – 30/11/2018:</p> <p>SUNK OFF 19.6 days RESTRICTED 8.1 days</p> <p>NE SPIT OFF 7.3 days RESTRICTED 9.6 days</p> <p>The NE Spit being restricted usually means that it is restricted to the inshore diamond only (because that is more sheltered). If the NE Spit diamond became redundant there would almost certainly be an increase in the number of days off station, which would be</p>	<p>As this is first evidence present to the Applicant on pilot boarding station down time (although it is noted that this was requested at meetings with PLA in 2017), it wishes to interrogate the underlying data in more detail, to provide more nuanced analysis of when and how the pilot stations are “Offline” or “Restricted” – and the interrelationship between the two (i.e. it is not clear from the information provided whether ships were diverted from the SUNK station to the NE Spit station or indeed the Tongue Pilot boarding station, when the SUNK. If this is the case, it is also not clear how the risk is assessed of bringing larger ships to a pilot boarding station that is closer to the land and existing depth and anchorage limitations</p>

WR point	WR	Response
	<p>more similar to the Sunk. This would mean that there would be approximately 12 to 20 additional days per year where it would not be possible to board a pilot at Tongue.</p>	<p>of the NE Spit during periods of adverse weather – or whether commercial pressure preside over those of navigation safety.</p> <p>It is also not clear from the data presented whether the “Off Station” or “Restricted” were met because of, adverse wind, wave or visibility restrictions, or whether they were for a full day or part of a day. Typically, adverse wind and visibility restrictions on pilot boarding only apply for relatively short duration of several hours.</p> <p>Finally as ESL and the PLA state that they would expect to use the Tongue Pilot Boarding Station more often if the TEOWF were constructed then, as there are no details of the Tongue Pilot Boarding Station downtime, and whilst the Applicant agrees that it may be impacted more that the NE Spit Boarding Station in certain conditions, there is no evidence base for it being more prone to going off station that the NE Spit, or the significance of the magnitude of any difference.</p>
<p>5.19</p>	<p>Although there are alternative pilotage options, including pilots being transferred to continental ports and sailing from there, each will have inevitable economic consequences for the continuation of pilotage operations.</p>	<p>This is acknowledged although the Applicant does not consider that the proposed wind farm changes this.</p>
<p>5.20</p>	<p>The PLA and ESL do not agree with the conclusion of the NRA (at paragraph 7.2.4) that “pilotage would still be feasible with the</p>	<p>The Applicant does not agree with this representation and draws attention to Appendix 25, Annex M, N and</p>

WR point	WR	Response
	<p>extension in place” nor that the reduction in the Red Line Boundary that the Applicant has proposed sufficiently mitigates the risks involved.</p>	<p>O (PINS Refs REP1-051, REP1-054 and REP1-055) of the response to Deadline 1 which provide further detail and evidence behind the continued feasibility of pilotage.</p>
<p>6.1</p>	<p>Navigation Risk Assessment</p> <p>The PLA does not consider the identification, assessment and management of shipping and navigation risks in the NRA to be sound. There are three main reasons for this assertion: lack of stakeholder involvement in the drafting of the NRA; too much reliance being placed upon the inadequate Pilot Transfer Bridge Simulation Report and noncompliance with MGN543.</p>	<p>The Applicant would note that the NRA follows appropriate guidance requirements as laid out in Maritime and Coastguard Agency Marine Guidance Note 543 (M+F) and associated supplementary guidance documents, and compliance with these requirements is confirmed by the Maritime and Coastguard Agency.</p>
<p>6.2</p>	<p>Lack of Stakeholder Engagement: The PLA is disappointed at the lack of engagement it has received from the Applicant about the NRA. The Applicant held meetings with the PLA which are listed in Table 8 in the NRA, and the PLA made requests and gave recommendations at these meetings and expressed its concerns about the reduction in sea room. However, the Applicant has not made adjustments to its Scheme as a result of these requests and recommendations, save for excluding a corner of the westernmost extent of its proposals to extend the Wind Farm from the application for the Scheme; this adjustment does not address the PLA’s concerns about the risk to navigation, in particular because it does not deal with the issue of the narrowing of the inner channel.</p>	<p>The Applicant would to note that significant stakeholder consultation was undertaken with PLA throughout the project including meetings and involvement in simulation. The Applicant considers that PLA Written Representations are therefore not that Stakeholder engagement was not undertaken but that the Applicant has not reduced the RLB to approximately half that requested by ESL.</p>
<p>6.3</p>	<p>Lack of Stakeholder Engagement: At a meeting in December 2017, the Applicant presented the methodology they intended to</p>	<p>The Applicant has reviewed the meeting minutes where the PLA Written Representation raised</p>

WR point	WR	Response
	<p>use to produce the NRA. Representatives from the PLA raised a number of concerns about this but these were not taken into account in the final version of the NRA. In addition, no draft version of the NRA was provided to PLA prior to the Applicant putting in its application.</p>	<p>concerns on constriction of traffic post construction of the TEOWF which was subsequently fully addressed by the Pilotage Bridge Simulation Study. The meeting minutes do not raise any PLA concerns on the methodology employed to undertake the NRA with the exception that the Pilotage Bridge Simulation Study was commented on by Catheryn Spain – in which she identified that the simulation, conducted on the PLA Pilotage training bridge simulator, with PLA chosen pilots, <i>“would not reflect all outcomes and included experienced mariners, familiar with the Thames Estuary, and therefore did not entirely reflect the relative inexperience of masters inbound to London, in a challenging environment”</i>.</p> <p>No concerns were raised at the meeting with the NRA methodology.</p> <p>The Applicant shared the draft NRA with the Maritime Coastguard Agency as the organisation responsible for navigation safety within the study area.</p>
<p>6.4</p>	<p>Non-compliance with MGN543: The PLA is concerned with the collection of data which has been used as the basis of the NRA. It also has concerns about the extent of the Applicant’s compliance with Marine Guidance Note 543 (MGN543).</p>	<p>The collection of vessel traffic data was conducted in compliance with the requirements of appropriate guidance - MCA MGN 543 (M+F) and was supplemented with additional 3 months AIS data for commercial shipping.</p>
<p>6.5</p>	<p>Non-compliance with MGN543: The PLA does not agree that the NRA was undertaken fully in line with the requirements of MGN</p>	<p>The assessment was undertaken based on an MGN 543 (M+F) compliant vessel traffic survey for Radar,</p>

WR point	WR	Response
	<p>543. MGN543 requires that the environmental impact assessment and resulting environmental statement (ES) (and therefore the NRA), “should evaluate all navigational possibilities, which could reasonably be foreseeable, by which the [...] extension [...] of an Offshore Renewable Energy Installation could cause or contribute to an obstruction of, or danger to navigation”. Most of the data used for the NRA was from all or part of a three month period over the winter (see paragraph 5.1 of the NRA), which tends to be the quietest period of the year, for both shipping and recreational activity. Where there was seasonal variation it was still based on a month that was below the monthly average for vessels using the NE Spit pilot stations and outside of the busiest months for recreational activity.</p>	<p>AIS and Visual observation data, that took into account seasonality through surveys carried out during winter (7th -25th February 2017) and summer (15th – 29th June 2017).</p> <p>Additional AIS data for a longer period than required by guidance, was utilised for additional analysis and advanced modelling, on winter months where MetOcean conditions are at their worst.</p>
6.6	<p>Pilot Transfer Bridge Simulation Report: The PLA considers that the ExA cannot rely on the conclusions of the Pilot Bridge Simulation ((Annex 10-2 to the NRA) (Document Reference 6.4.10.2)) to determine whether pilot boarding and landing operations could safely continue in the area of the NE Spit boarding and landing diamond with the proposed extension in place.</p>	<p>The Applicant agrees that the simulation in and of itself does not confirm the safety of the operations given the subsequent need to undertake an NRA to assess safety. Notwithstanding that the simulation demonstrated that pilot boarding and landing operations can viably continue in the area, the Applicant notes that the wider assessment and supporting studies as set out the NRA, support the findings that pilotage is both feasible and safe.</p>
6.7	<p>Pilot Transfer Bridge Simulation Report: The extent to which the Simulations represented real world conditions is very limited. The vessels were all ‘manned’ by experienced PLA pilots who are all very familiar with the NE Spit area. The vessel models used were</p>	<p>The Applicant notes that detailed response is provided to these points within the response to the ESL Written Representation in items 6.6 to 6.16. However, the capability of the PLA simulator is</p>

WR point	WR	Response
	<p>all ‘well found ships’. The extent to which the PLA simulator can re-create true environmental conditions is limited. It does not represent true darkness and does not give a true impression of the weather that may be being experienced. The simulation runs undertaken did not represent the full range of environmental conditions, e.g. wind strength and direction in which the pilot cutters are able to operate, using a maximum of 25 knots. The simulator does not have a model of a pilot cutter so this had to be substituted with a tug, which reacts very differently. The simulations did not fully take into account the lack of local knowledge of a Master bringing his vessel to the NE Spit for the first time; the potential lack of understanding of the cutter’s requirements due to the limitations of their ability to communicate in English; the potential for delays during the boarding and landing due to poorly/incorrectly rigged pilot ladders. No emergency scenarios were simulated and the simulations did not include the range of small vessels such as recreational vessels and crossing traffic, such as windfarm support vessels that may be found in the area.</p>	<p>considered, by the PLA, to be “highly advanced” and “Pilots can test out and perfect manoeuvres against a background of the highest wind speeds and worst weather” (Source PLA Handbook 2018) and therefore the Applicant considers that the simulator and the conditions it represented is not ‘limited’.</p> <p>With respect to <i>‘the potential for delays during the boarding and landing due to poorly/incorrectly rigged pilot ladders’</i> the Applicant notes that these scenarios were identified from the outset and incorporated into some of the simulations runs and furthermore the assessment criteria (Section 4.2 of Appendix 4 to the Applicant’s Deadline 2 Submission) also included a criterion (no 6) relating to the ships capacity to respond to an emergency. This was addressed systematically in each run debrief.</p> <p>It is noted that the passage of some third party vessels was included albeit did not form the focus of the assessment as complex vessel interactions were reviewed quantitatively under the collision risk modelling.</p>
6.8	<p>Pilot Transfer Bridge Simulation Report: In order to robustly test the feasibility and operating risk, there would need to be more runs. The important point would be to ensure that the runs represent the full extent of environmental conditions and traffic</p>	<p>Whilst further scenarios could be undertaken the Applicant maintains that adequate number of runs were performed to meet the objectives.</p>

WR point	WR	Response
	<p>situations that may be encountered. A range of emergency scenarios would need to be simulated and more realistic traffic situations, including those where ships / bridge crews do what they are expected to. The PLA simulator is not necessarily the best tool to use to quantify the operational risk, as it cannot realistically simulate the sea conditions and other environmental factors, or onboard situations.</p>	<p>It is also noted, particularly with respect to ESL WR point 6.16 that it was the PLA Pilot’s view, on completion of run No. 12, that sufficient runs had been undertaken.</p> <p>Clarification is made that the simulator was not used to quantify operational risk but as a tool to assess whether adequate sea room exists for continued pilot transfer operations. This is a component tool of the overall navigation risk assessment which did include quantitative tools and techniques (e.g. collision risk modelling).</p> <p>It is noted that the PLA proposed use of their own simulator and extensive discussion was held at meetings (05-Apr-2017 and 03-Jul-2017 and 14-Aug-17) and in correspondence with the Simulator Manager, the Harbour Master Lower and the participants from ESL to ensure the simulator was fit for purpose in relation to the objectives.</p>
7.1	<p>Desired mitigation</p> <p>The mitigation desired by PLA is a further reduction in the Red Line Boundary of the application at the Western boundary of the site. Although the Applicant has already proposed a reduction in the Red Line Boundary, it is the position of PLA that this is insufficient to address its concerns about navigational safety. PLA’s desired revised Red Line Boundary is illustrated on the Sea</p>	<p>The Applicant is cognisant of PLA’s request to undertake further reduction in the Red Line Boundary of the application at the Western boundary of the site.</p> <p>It is the Applicants position however, that without an evidential basis for further reduction and a total reliance on “qualitative” judgement (amongst the</p>

WR point	WR	Response
	<p>Zones plan included with these Written Representations as Appendix 1. This plan illustrates the area of the proposed extension which PLA requests be removed from the DCO edged in green. Reducing the area of the proposed red line boundary to this extent would address the PLA's concerns with the Scheme.</p>	<p>lowest level of evidence on the evidence hierarchy), it is not possible for the Applicant to reduce the RLB further.</p>

4 Estuary Services Limited (REP1-141)

WR point	WR	Response
4.1	<p>The siting of the proposed extension to the Wind Farm to be authorised by the DCO causes ESL great concern as regards risks to navigation and shipping routes. The sea lane in between the existing Wind Farm and North Foreland (“the Inner Route”) is already narrow due to the shallow waters off the coastline and the presence of the Wind Farm. The proposed extension will encroach onto some of the key routes into the Port of London and Peel Ports Medway areas and provide restrictions for certain sizes and drafts of vessel on their entries into the Port. Masters bringing their vessels into the Port will always require a safe area of sea room from the coastline, from the Wind Farm and from other vessels. Chapter 10 of the Applicant’s Environmental Statement (“ES”) shows the constrained path vessels follow in this area and it also shows the ‘buffer zone’ that Masters put between themselves and the Wind Farm.</p>	<p>The Applicant can confirm that these WRs form the basis of the document submitted at Appendix 3 of this Deadline 2 submission.</p> <p>In brief it is the Applicant’s position that the necessary searoom required to accommodate the existing vessel traffic, and therefore the inshore route, remains available. Appendix 3 utilises calculations as provided by the London Pilots Council to provide context to this position.</p>
4.2	<p>At paragraph 7.1.1, the Applicant’s Navigation Risk Assessment (“NRA”) (document reference 6.4.10.1) outlines 0.5nm as “the minimum safe distance considered acceptable by ships masters to pass a wind farm”. ESL contests this value and would argue that this figure will vary depending on a whole variety of conditions including weather and tidal conditions and congestion in the area. ESL would suggest a distance of 2nm for the ‘lane’ width with a 1nm buffer between the lane and the extended Wind Farm as a more appropriate figure; this distance is needed</p>	

WR point	WR	Response
	as the area concerned is used for pilotage operations, not merely vessels passing through.	
4.3	The siting of the proposed extension, and in particular its western-extent, will cause Masters to redirect their vessels in certain situations to avoid the Inner Route. At paragraph 7.1.2 of the NRA, it is suggested that the extent of the increase in journey for a vessel which does re-route by passing to the east and then to the north of the Wind Farm would be a distance of 11nm. ESL contests this figure, and suggests that the increase is more likely to be 14nm journey distance if the additional distance to the North East Spit is included with a corresponding increase in the time taken for each vessel journey. It would also raise safety concerns with additional traffic passing to the east and the north of the existing Wind Farm.	
4.4	The Inshore Route may not become impassable as a result of the TEOWF but, in the view of ESL, whose pilots have extensive practical and recent day-to-day experience of working with Masters in this area, a significant number of Masters would be unwilling to accept the increased risk to their vessels and would therefore avoid it. In order to continue to offer a safe operation at the NE Spit Station, ESL would have to make the baseline assumption the area is unsafe and therefore relocate the boarding area.	
4.5	Evidently, as set out above, ESL does not accept the Applicant’s position that this Inner Route will be used by the same number of vessels after the Scheme is implemented as before. However, if that argument is accepted, there would be the same number of	

WR point	WR	Response
	<p>vessels slowing down and changing direction – 5500 to 6000 vessels per year at a conservative estimate – but in a smaller area of sea room. In reality, the presence of an increased number of vessels serving the wind farm will mean that there would be a greater number of vessels in that smaller area. This will inevitably lead to an increase in risk of vessel collisions.</p>	
5.7	<p>A key concern of the PLA and ESL is the reduction in sea room. The closest point of the extended wind farm to the NE Spit pilot station would be 1.7 miles (leaving approximately 2.1nm to the most eastern extent of the Margate Roads anchorage). At this point there is a lot of crossover traffic which needs to be taken into account.</p>	<p>The Applicant has presented a sea room plot at Appendix 28, Annex B to deadline 1 Submission: NE Spit Sea Room (PINS Ref Rep1-044), which gives details of sea room from the TEOWF in relation to the revised RLB. The Applicant notes that the London Pilot Council, a body representing serving PLA pilots who board and landing vessels at NE Spit pilot boarding station advise the need from “1 mile to 1.7mile” plus a safety buffer of 0.5 miles.</p>
5.8	<p>It is the experience of the PLA and ESL’s coxswains that launches frequently suffer with interaction between their radar and the Wind Farm. When a pilot launch is operating between the Wind Farm and a ship, with the ship in close proximity, the radar becomes less effective. High sided vessels will often severely impede Very High Frequency (VHF) communication with the shore side operation (including Vessel Traffic Services (VTS)), the ship itself and other vessels on the side of the ship being served.</p>	<p>Radar interaction noted by pilot cutter crews, is due to the proximity of the pilot vessel to the larger vessel when boarding a pilot (likely causing radar reflections) and not the existing windfarm – otherwise it would be expected that the interference would be present at all times whether alongside a “high sided” ship or not. As offshore wind turbines provide a clear and fixed reference (as opposed to a transiting vessel) interaction and distortion of radar is commonly most obvious in relation to a standard</p>

WR point	WR	Response
	<p>In effect, the pilot boat can be blindsided. The coxswain will have to be confident that little or no deviation will be necessary during an act of pilotage. The reduction in sea room and, therefore, the potential increase in congestion present a significant planning issue for the coxswain with regards to a confident 'clear path' before he engages with the ship. This is an issue that the existing sea room allows the PLA and ESL to plan for and work with. However, with a reduction in available sea room between the pilotage boarding area and TOW this would become a more significant safety concern.</p>	<p>wind turbine layout, however it is the case that the interaction seen when a pilot cutter is alongside a "high sided" ship will also occur in relation to navigation buoys, other passing vessels or even the Thanet coastline (were the pilot cutter close alongside the landward side of a "high sided" ship).</p> <p>With regards to VHF effects, the Applicant would state that the presence of the TEOWF would not increase the severity of any loss of VHF signal, to the shore including to PLA VTS, from a pilot cutter whilst it is engaged in boarding a pilot on the seaward side of a "high-sided" ship. If the VHF issue were to continue presenting a problem to pilot boarding operations, and whilst it is not associated with the TEOWF, the Applicant would be willing to make available a suitably positioned wind turbine for the PLA / ESL to place a VHF repeater on to seaward of the pilot boarding station which could help alleviate this issue and reduce baseline risk.</p>
5.9	<p>These risk factors mean that the coxswains need a significant amount of sea room because there can be a period of no communication when everything needs to stay the same. If a captain suddenly changes route, the safe lee can be lost, personnel can be exposed to possible injury or a pilot launch can easily be damaged. It is ESL's case that there will not be sufficient</p>	<p>The Applicant notes that the London Pilot Council, a body representing serving PLA pilots who board and landing vessels at NE Spit pilot boarding station advise the need from "1 mile to 1.7mile" plus a safety buffer of 0.5 miles.</p>

WR point	WR	Response
	<p>safe sea room at North East Spit if the western expansion of the wind farm is permitted.</p>	
<p>5.10</p>	<p>The PLA and ESL argue that the impact of this is for pilotage operations to be pushed out to either NE Goodwin or the Tongue. In addition, the location of the Tongue will need to be pushed further north, out into less sheltered waters. The NE Spit boarding area has been strategically placed to afford the service maximum shelter, particularly with MetOcean conditions WNW through to SE. This can allow ESL to continue operations when alternative boarding areas are unable to operate. If launch crew and pilots are forced to operate with an increase in passage times and a potential for greater exposure to adverse weather conditions, this increases the likelihood of personnel fatigue.</p>	<p>The applicant firstly notes that there is sufficient sea room in vicinity of NE Spit for ongoing pilot transfers and therefore this station retains the same availability.</p> <p>The presence of the Tongue (formerly called the NE Spit Deep Water Pilot Boarding Station), also remains operational with the extension in place and could, where necessary, provide additional pilot boarding capacity for large vessels as it is currently not frequently used. With reference to the off station data provided at Deadline 1 for SUNK and NE Spit Pilot Transfer stations further information on this is requested to understand the relationship between these stations, NE Goodwin and Tongue.</p>
<p>5.11 & 5.12</p>	<p>The movement of pilotage operations away from North East Spit will have economic impacts on the PLA, ESL and the users of its pilotage services.</p> <p>At a basic level, if the pilotage boarding station is moved further out to sea, each individual pilotage act will take longer. This has a knock-on effect in terms of the number of pilots and number of launches which will be required to enable the PLA to continue its pilotage services.</p>	<p>Whilst the Applicant maintains that NE Spit remains usable as a pilot boarding station it notes that analysis was undertaken in the Pilotage Study as submitted in the PEIR¹ to identify impacts of relocating pilot boarding stations</p>

WR point	WR	Response
5.13	The PLA and ESL pilotage services currently operate at a service level of 95% so would not be able to serve more vessels with the existing complement of pilots and launches without incurring delays.	Whilst this is noted the Applicant requests that PLA and ESL provide further information on how they plan to adapt with the increasing numbers of predicted vessel movements as provided by POTLL and DPWLGW and, specifically, what thresholds of vessel numbers/movements necessitate a change in existing pilots and or launches.
5.14	The average additional time in a pilot boat if using the re-located Tongue instead of the NE Spit is 17 minutes. This gives an additional 1680 hrs of pilotage time per year spent in the pilot boat. This equates to more than 1.5 full time equivalent pilots, therefore an additional 2 full time pilots would be required to cover this, and the cost of the additional resource would need to be passed on to the customers through increased pilotage charges.	This is queried and with reference to Table 3 of the Pilotage Study where the difference in distance between NE Spit and Tongue is 2.9nm which, at 20kts equates to circa 9 minutes which is approximately half of the time stated by PLA and ESL. It should also be noted that this should be offset against the time saved by the Pilot being boarded at a more straightforward area of the ships passage (i.e. spending less time on board ship) and also the cost incurred to the vessel having to navigate an additional circa 4-6nm into the area of NE Spit and the associated time this incurs (with reference to the steaming time costs stated by POTLL and DPWLGW).
5.15	If NE Goodwin was used instead of the NE Spit, the average additional time in the pilot boat would be only a few minutes, equating to between 300 and 400 additional pilot hours per year.	North East Spit transfer station and North east Goodwin pilot station are both 6.5nm from Ramsgate Breakwater and thus there is no discernible difference in transit time for the pilot launch (Table 3 of the Pilotage Study). It is recognised that transferring a pilot at NE Goodwin results in the Pilot being onboard the ship

WR point	WR	Response
		for longer than if the transfer were undertaken at NE Spit and Tongue and this is unaffected by the windfarm on the basis that NE Spit continues to have adequate sea room.
5.16	It has not been possible in the time frame to establish the relative use of the Tongue and NE Goodwin if the NE Spit diamond was no longer available.	This response is noted by the Applicant. The Applicant will respond further when the analysis has been undertaken by ESL
5.17	Further economic impacts will be felt when, inevitably, there are an increased number of days where there are no pilotage services available in the PLA area. This consequence is inevitable when the protected North East Spit station is not useable.	<p>The Applicant maintains that the NE Spit station remains unaffected in terms of downtime/off station and that adequate sea room exists for transfers.</p> <p>It should also be noted, with regards to SUNK being off station that NE Goodwin and Tongue form one of three alternatives (the third being NE Spit).</p>
5.18 & 5.19	<p>Based on the information inputted by London Vessel Traffic Services (which manages and oversees the safety of navigation in the area) into the POLARIS database, the following table shows the relative number of days that the NE Spit and Sunk were off station during a 12 month period from 01/01/2017 – 30/11/2018:</p> <p>SUNK OFF 19.6 days RESTRICTED 8.1 days</p> <p>NE SPIT OFF 7.3 days RESTRICTED 9.6 days</p> <p>The NE Spit being restricted usually means that it is restricted to the inshore diamond only (because that is more sheltered). If the</p>	As this is first evidence present to the Applicant on pilot boarding station down time (although it is noted that this was requested at meetings with PLA in 2017), it wishes to interrogate the underlying data in more detail, to provide more nuanced analysis of when and how the pilot stations are “Offline” or “Restricted” – and the interrelationship between the two (i.e. it is not clear from the information provided whether ships were diverted from the SUNK station to the NE Spit station or indeed the Tongue Pilot boarding station, when the SUNK. If this is the case, it is also not clear how the risk is assessed of bringing

WR point	WR	Response
	<p>NE Spit diamond became redundant there would almost certainly be an increase in the number of days off station, which would be more similar to the Sunk. This would mean that there would be approximately 12 to 20 additional days per year where it would not be possible to board a pilot at Tongue.</p>	<p>larger ships to a pilot boarding station that is closer to the land and existing depth and anchorage limitations of the NE Spit during periods of adverse weather – or whether commercial pressure preside over those of navigation safety.</p> <p>It is also not clear from the data presented whether the “Off Station” or “Restricted” were met because of, adverse wind, wave or visibility restrictions, or whether they were for a full day or part of a day. Typically, adverse wind and visibility restrictions on pilot boarding only apply for relatively short duration of several hours.</p> <p>Finally as ESL and the PLA state that they would expect to use the Tongue Pilot Boarding Station more often if the TEOWF were constructed then, as there are no details of the Tongue Pilot Boarding Station downtime, and whilst the Applicant agrees that it may be impacted more that the NE Spit Boarding Station in certain conditions, there is no evidence base for it being more prone to going off station that the NE Spit, or the significance of the magnitude of any difference.</p>
<p>5.20</p>	<p>Although there are alternative pilotage options, including pilots being transferred to continental ports and sailing from there, each will have inevitable economic consequences for the continuation of pilotage operations.</p>	<p>This is acknowledged although the Applicant does not consider that the proposed wind farm changes this.</p>

WR point	WR	Response
5.21	<p>The PLA and ESL do not agree with the conclusion of the NRA (at paragraph 7.2.4) that “pilotage would still be feasible with the extension in place” nor that the reduction in the Red Line Boundary that the Applicant has proposed sufficiently mitigates the risks involved.</p>	<p>The Applicant does not agree with this representation and draws attention to Appendix 25, Annex M, N and O (PINS Refs REP1-051, REP1-054 and REP1-055) which provide further detail and evidence behind the continued feasibility of pilotage</p>
6.1	<p>Navigation Risk Assessment</p> <p>ESL does not consider the identification, assessment and management of shipping and navigation risks in the NRA to be sound. There are four main reasons for this assertion: lack of stakeholder involvement in the drafting of the NRA; insufficient data sets being used for analysis; too much reliance being placed upon the inadequate Pilot Transfer Bridge Simulation Report and non-compliance with MGN543.</p>	<p>The Applicant would note that the NRA follows appropriate guidance requirements as laid out in Maritime and Coastguard Agency Marine Guidance Note 543 (M+F) and associated supplementary guidance documents, and compliance with these requirements is confirmed by the Maritime and Coastguard Agency.</p>
6.2	<p>Lack of stakeholder involvement: ESL is disappointed at the lack of engagement it has received from the Applicant about the NRA. The Applicant did hold meetings with ESL which are set out in Table 8 in the NRA, and ESL made requests and gave recommendations at these meetings and expressed its concerns about the reduction in sea room. However, the Applicant has not made adjustments to its Scheme as a result of these requests, save for excluding a corner of the westernmost extent of its proposals to extend the Wind Farm from the application for the Scheme; this adjustment does not address ESL’s concerns about the risk to navigation, in particular because it does not deal with the issue of the narrowing of the inner channel.</p>	<p>The Applicant would note that significant stakeholder consultation was undertaken with ESL throughout the project including meetings and involvement in simulation. ESL representations therefore appear to be not that Stakeholder engagement was not undertaken but that the Applicant has not reduced the RLB to the satisfaction of ESL.</p> <p>As has been evidenced by the Applicant at Deadline 1 it is the Applicant’s position that throughout the evolution of the project the Applicant has always been open to ESL “qualitative” concerns, but despite requests on pilot station down time, navigation incidents, risk assessments and navigation</p>

WR point	WR	Response
		<p>management systems limited evidence has been provided to aid in the Applicant coming to an informed judgement on how best to incorporate the qualitative concerns.</p>
<p>6.3</p>	<p>Lack of stakeholder involvement: At a meeting in December 2017, the Applicant presented the methodology they intended to use to produce the NRA. Representatives from ESL raised a number of concerns about this but these were not taken into account in the final version of the NRA. In addition, no draft version of the NRA was provided to ESL prior to the Applicant putting in its application.</p>	<p>The Applicant has reviewed the minuting minutes where ESL Written Representation raised concerns over reduction in sea room post construction of the TEOWF which was subsequently fully addressed by the Pilotage Bridge Simulation Study.</p> <p>ESL also commented on increased costs of relocation of the pilot service which is an economic consideration of a Possible Risk Control Measures - which was subsequently not recommended as Risk levels were shown to be ALARP and the Pilotage Bridge Simulation Study confirmed the continued feasibility of pilot boarding at NE Spit with the original RLB, that was subsequently reduced to take onboard “qualitative” stakeholder concern.</p> <p>ESL also specified in the meeting that the location of the NE Spit Pilot Boarding station was because it was 2nm from all hazards – however this was subsequently shown not to be the case as the Margate Roads Anchorage is located less than 0.5nm from the pilot boarding diamond.</p> <p>No concerns were raised at the meeting with the NRA methodology.</p>

WR point	WR	Response
		The Applicant shared the draft NRA with the Maritime Coastguard Agency as the organisation responsible for navigation safety within the study area.
6.4	Non-Compliance with MGN 543: ESL is concerned with the collection of data which has been used as the basis of the NRA. It also has concerns about the extent of the Applicant’s compliance with Marine Guidance Note 543 (MGN543).	The collection of vessel traffic data was conducted in compliance with the requirements of appropriate guidance - MCA MGN 543 (M+F), and was supplemented with additional 3 months AIS data for commercial shipping.
6.5	ESL does not agree that the NRA was undertaken fully in line with the requirements of MGN 543. MGN543 requires that the environmental impact assessment and resulting ES (and therefore the NRA), “should evaluate all navigational possibilities, which could reasonably be foreseeable, by which the [...] extension [...] of an Offshore Renewable Energy Installation could cause or contribute to an obstruction of, or danger to navigation”. Most of the data used for the NRA was from all or part of a three month period over the winter (see paragraph 5.1 of the NRA), which tends to be the quietest period of the year, for both shipping and recreational activity. Where there was seasonal variation it was still based on a month that was below the monthly average for vessels using the NE Spit pilot stations and outside of the busiest months for recreational activity.	<p>The assessment was undertaken based on a compliant vessel traffic survey for Radar, AIS and Visual observation data, that took into account seasonality through surveys carried out during winter (7th -25th February 2017) and summer (15th – 29th June 2017).</p> <p>Additional AIS data for a longer period than required by guidance, was utilised for additional analysis and advanced modelling, on winter months where MetOcean conditions are at their worst.</p>
6.6	The Applicant has provided a Pilot Transfer Bridge Simulation Report (“the Simulation Report”) as Annex 10.2 to its ES (document reference 6.4.10.2). This is used to support the	The Applicant confirms this conclusion.

WR point	WR	Response
	<p>Applicant’s conclusion in the NRA that “pilotage transfer would be feasible” (p.v).</p>	
<p>6.7</p>	<p>Although ESL was involved in the Simulation, they raised concerns with Marico Marine about the simulator use prior to, during and after the simulation. In particular, these concerns related to the complex nature of shipping and landing pilots. While ESL accepts that bridge simulations are an accepted process when investigating the possible impact of a development such as the extension to the Wind Farm, it has concerns over the ability of a simulation to account for all of the complexities involved. ESL sets out below the ways in which the technical restraints of the simulator have heavily diluted the possible outcomes in this situation.</p>	<p>The Applicant refers to the response provided within Section 3 of Annex N (PINS Ref REP1-054) noting specifically that PLA and ESL were integrated into the planning process and indeed Simulation was proposed during a meeting with PLA (refer minutes 05-Apr-17 in Appendix 25 Annex J of Deadline 1 (PINS Ref REP1-007)) with the PLA simulator proposed by the PLA as a means of understanding the complex nature of pilot transfers. Extensive opportunity was provided to comment and rectify planning and technical restraints (of the methodological process and or the simulator itself) through the process.</p> <p>Meetings with PLA and ESL, including a tour of the simulator by PLA (refer minutes (03-Jul-17 and 14-Aug-17 in Appendix 25 Annex J of Deadline 1 (PINS Ref REP1-007))), were used as forums to openly elicit and address issues and do not contain these concerns as unresolved. The issuing of an inception report (refer Appendix 25 Annex K of Deadline 1 (PINS Ref REP1-046)) provided further opportunity for ESL to comment prior to the setup day which was held and the fact that the ESL simulation would necessarily focus specifically on the sea room question.</p>

WR point	WR	Response
		<p>The Applicant queries why the residual concerns raised during ISH2 and Deadline 1 have not been raised prior to this date given the extensive meeting and document trail of minutes and reports provided prior to Application and Examination.</p>
6.8	<p>Firstly, the simulator was unable to accurately recreate the relevant MetOcean conditions. ESL acknowledges that it was agreed that 25 knots could represent challenging operation conditions (as stated at paragraph 3.2.1 of the Simulation Report). However, once in the simulator, the coxswains in attendance did not consider this wind speed to be realistically represented.</p>	<p>This was not reported during the simulation or in response to the report.</p> <p>The capability of the PLA simulator is considered, by the PLA, to be “<i>highly advanced</i>” and “<i>Pilots can test out and perfect manoeuvres against a background of the highest wind speeds and worst weather</i>” (Source PLA Handbook 2018). The Applicant therefore questions why the simulator would be unrealistic with regards to wind/vessel effects and any calibration or supporting data held.</p>
6.9	<p>The height of tide during the Simulation was represented by two states of tide (being high water or low water +3) which is not an exhaustive representation of the scope of tidal heights, and in particular does not represent low water conditions. Vessels of a deeper draft (approximately 10m) can be served closer to low water, this would be factored into the launch programme typically after consultation with the coxswain/ DPC and pilot. A larger (10m draft) vessel being served closer to low water would have to remain to the east of the boarding ground, at least 1nm depending on other traffic.</p>	<p>The Applicant notes that boundaries of tidal levels were not explored within the simulation although does not consider this critical other than the threshold of depth required for vessels to transit over North-East Spit Bank (and the Princes Chanel and Fishermans Gat).</p> <p>Definition and location (west/east extent) of the bathymetry contour and associated tidal height that requires larger draft vessels to remain to the east in the area of the pilot diamond is requested as this is</p>

WR point	WR	Response
		not considered to be a critical criterion in relation to other factors which influence the area of sea room available for pilotage – principally the Margate Roads anchoring limit extending between E Margate and Elbow buoy which means that pilot transfers should conservatively be undertaken to the east of this line.
6.10	The ability to vary visibility conditions in the simulator was also considered to be inadequate. In particular, the night-time conditions were thought to be closer to a representation of summertime dusk conditions by the ESL coxswains present.	<p>This was not reported at the simulations or the report.</p> <p>The PLA are requested to provide detail of settings used in the simulator on the basis of this representation and provide comment on whether night-time condition settings are thought to be representative and why this may not be the case.</p>
6.11	<p>The simulator was also unable to capture the reality of launch-ship interaction in various weather conditions. The ESL coxswains present considered that both the launch and the ship being boarded were quite static even during what were meant to be more challenging weather conditions. Further, pilot launches are heavily reliant on radar in reduced visibility but the tug simulator was not fitted with radar (see comments below).</p> <p>This makes five of the runs completed unrealistic because in true conditions, radar would have been required by the launch,</p>	<p>It was noted that the specific inter ship interactions will differ between tug and pilot launch although these motions are not fundamental to the issue of sea room as being tested. In order to allow for this, the simulations incorporated a time allowance (and therefore the corresponding sea room used in this time) for pilot transfer once the vessels were alongside and proceeding at a constant speed and heading. Whether sufficient time and space was available for this formed a grading criterion as agreed at the setup and applied during the whole assessment and at each run de-brief.</p>

WR point	WR	Response
		<p>Radar was supplemented by use of ECDIS – providing a suitable indication of vessel location for the purposes required within simulation.</p>
6.12	<p>Secondly, ESL is concerned that the Simulation used a tug simulator throughout. This is because the simulator used did not offer a pilot boat or small fast craft. ESL acknowledge that the use of the tug was deemed necessary in the circumstances but wish to raise that this provides obvious issues in terms of being a ‘true representation’ of a launch. As mentioned above, the tug’s handling alongside a ship and interaction with MetOcean conditions were not consider by the representatives of ESL present to be reflective of reality. In addition, the lack of radar was entirely unrealistic given that ESL standing orders required that they do not proceed to sea without a fully operational radar.</p>	<p>A review of the tug and equipment fit (radar/ECDIS) was undertaken at commencement and it was ‘agreed the tug provided a close enough facsimilie representation’.</p>
6.13	<p>Additionally, the representatives from ESL did not consider that the representations of other craft, in particular leisure craft, were realistic. All of the other vessels were being operated by experience pilots and “each introduced vessel was compliant with the rules of the road” (paragraph 3.3.3 of the Simulation Report). From the experiences of ESL coxswains, this is frequently not the case. ESL agree with the comment in the Simulation Report that “a more detail examination of the increased vessel congestion and the consequent increase in collision risk” (paragraph 3.3.3) is required. However, it does not consider that the NRA fulfils this.</p>	<p>Collision risk in relation to other craft / third party vessels was quantitatively assessed in collision risk modelling as reported in the NRA and not explored in detail in simulations in order to focus the simulation objectives on understanding sea room for transfers. This was clarified at the outset of the study within meetings and the inception report. However, it should be noted that some third party traffic was introduced to some of the runs (e.g. run 11 – 14 inclusive) to provide further precautionary element to the simulations.</p> <p>The use of experienced Pilots (as nominated and provided by the PLA) is noted and the Applicant</p>

WR point	WR	Response
		<p>further notes that the Pilots are inherently involved in acts of pilot transfer and pilotage in the area so this is not artificial.</p>
6.14	<p>ESL has concerns about the simulation run sequence set out at paragraph 4.1 of the Simulation Report. Point 1 does not acknowledge that a pilot launch will typically have engaged with the vessel(s) being served before they are 1nm from the ship. Leaving communication until 1nm away is considered by ESL to be bad practice. Point 5 allows only 1-2 minutes for the physical transfer of the pilot. ESL consider this to reflect optimal conditions and in the experience of their coxswains, it can take longer than this for the launch to be stable and allow transfer. This is significant as a longer transfer would require a greater amount of sea room. This was not considered in the Simulation.</p>	<p>The first point is that this sequence was proposed in the inception report and further developed together at the set-up day – and all suggested changes were implemented to the sequence to ensure it was representative.</p> <p>Point 1: It is agreed that communication is often undertaken earlier and a high level pre-run brief (serial 0 in the run sequence) made reference to means of early communication. A later exchange can be considered precautionary and conservative in simulation terms. It should be noted that, examination of the run debriefs (e.g. the more complex multiple transfer runs 11-14 inclusive) notes the time taken by the pilot launch coxswain to develop and transmit (over VHF) their situational plan to all vessels.</p> <p>The applicant notes that the simulation exercise identified opportunities to further improve pre-transfer communication.</p> <p>Point 2: It should be noted, with reference to the Grading Criteria of Section 4.2, that the ‘successful’ criteria required the time available for a pilot transfer to be in excess of 5 minutes (and the sea-room</p>

WR point	WR	Response
		required to do so) and that this was achieved in all runs.
6.15	ESL consider that the six failure criteria set out at paragraph 4.2 were unlikely to occur in the types of scenario being tested. The ESL representatives present consider that the limitations of the Simulator (in particular, the limited number of vessels being simulated at any one time and the fact that all participants were highly experienced) mean that each of the failure criteria would be very difficult to meet. ESL would argue that there was an element of imbedded mitigation in the Simulation in that all non-pilotage vessels were being operated by a pilot and were fully adhering to the rules of the road, combined with good communication and all participants being aware of the structure of each run	The Applicant firstly notes that the criteria were carefully proposed and agreed at the set-up day and are structured around the principles of risk assessment. This included, for example, definition of a suitable clearance buffer/proximity criteria of 5 cables (0.5nm) in relation to Criteria No. 2 and consistent with the Applicants approach in the assessment to passing distances and buffers.

		<p>The Applicant secondly notes, in relation to the suggestion of “embedded mitigation” that the use of practitioners and the number of simulated vessels did not involve unrealistic or artificial scenarios. It should be noted, as per the Applicant’s submission in Appendix 25, Annex N, Paragraph 19 (PINS Ref REP1-054), that all mariners, regardless of local area knowledge and familiarity, are professionally qualified and experienced, under the ships flag state, to navigate and communicate in the area. The experience levels of the participants was not considered to be unrepresentative of the qualifications and experience of mariners who are integral to the pilotage practices of the area. The short briefing prior to runs was focussed as explained in Section 4.1 of the Simulation Report: <i>‘limited to the meteorological conditions, the number of vessels requiring transfer and their destination (inbound or outbound) – this was felt to be faithful to present practice’</i>. Non-conforming behaviours were more broadly taken into account through the NRA, including incident data, and stakeholder consultation.</p> <p>The Applicant notes the comment regarding limited number of simulated vessels and notwithstanding that multiple transfer vessels were tested in the simulator; other vessel numbers and interactions were quantitatively assessed within the collision risk modelling (using baseline traffic profiles). No</p>
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WR point	WR	Response
		evidence has been submitted by Interested Parties to date why this cannot be relied upon.
6.16	<p>Finally, ESL does not consider that 14 simulated runs are sufficient to draw the conclusion that continuing pilotage operations with an extended Wind Farm in place would be feasible. Two further runs (in addition to the original 12) were only completed at the insistence of one of the ESL coxswains in attendance. ESL is particularly concerned that most of the simulated runs are what the representatives from ESL in attendance at the simulation would consider ‘basic’.</p>	<p>The 14 runs (and 30 pilot transfers) are considered sufficient by the Applicant. Additional runs may enable further exploration and development/training of practices but are not required in order to support the conclusions relating to the specific requirements of the simulation objectives which were to demonstrate whether pilot operations were feasible given the sea room available.</p> <p>It is agreed that simulation runs No 13 and 14 were undertaken at the request of ESL following agreement amongst participants that the objectives of the simulation had been met. It is specifically noted that discussion was held at that time between ESL and the participating Pilots (representing PLA) who felt that objectives of the simulation had been reached with regards to the sea room required although were nevertheless prepared to undertake additional runs. It should be noted that the scenario of run No. 14, as proposed by ESL, explored the ‘requirement to service a deep draught vessel And examine the nature of the reduced are of sea room between the wind farm and the north east spit shoal water’ [subsequently increased due to the RLB change]. This was assessed as a successful run and can be considered a particularly onerous scenario – not least</p>

WR point	WR	Response
		because the narrowest area of sea-room was explored.
7	<p>Desired mitigation</p> <p>The mitigation desired by ESL is a further reduction in the Red Line Boundary of the application at the Western boundary of the site. Although the Applicant has already proposed a reduction in the Red Line Boundary, it is the position of ESL that this is insufficient to address its concerns about navigational safety. ESL’s desired revised Red Line Boundary is illustrated on the Sea Zones plan included with these Written Representations as Appendix 1. This plan illustrates the area of the proposed extension which ESL requests be removed from the DCO edged in green. Reducing the area of the proposed red line boundary to this extent would address the ESL’s concerns with the Scheme.</p>	<p>The Applicant is cognisant of ESL’s request to undertake further reduction in the Red Line Boundary of the application at the Western boundary of the site.</p> <p>It is the Applicants position however, that without an evidential basis for further reduction and reliance on “qualitative” judgement, it is not justified for the Applicant to reduce the RLB further.</p>

5 Port of Tilbury London Limited / Dubai Ports World London Gateway Ltd (REP1-148)

WR point	WR	Response
<p>Section 4</p>	<p>Navigation Risk Assessment – Section 4 of Written Representations</p> <p>At the outset it is to be clarified that the IPs were not contacted by the Applicant or its agents with regard to the preparation of any of the application supporting assessment or evidence – this is contrary to EN-3. Additionally, the IPs were not included in the statutory pre-application consultation. The IPs first became aware of the proposals following the application for development consent, having been alerted by the Port of London Authority (PLA).</p>	<p>POTLL and DPWLG have small embedded Statutory Harbour Authority areas that are surrounded entirely by the PLA Statutory Harbour Authority - their statutory responsibilities for navigation safety are therefore around 45 nautical miles and 40 nautical miles from the proposed TEOWF, with vessels having to transit through PLA Statutory Harbour Authority waters, before entering MCA statutory waters in the vicinity of the TEOW to the west of the NE Spit.</p> <p>POTLL or DPWLG do not hold Competent Harbour Authority status for the provision of pilotage, which is entirely provided by the PLA for vessels inbound or outbound from both harbours, and indeed all terminals, quays, jetties and facilities within the PLA Competent Harbour Authority limits.</p> <p>It is the view of the Applicant that through consultation on the NRA with the PLA, primarily on pilotage related issues, it is the responsibly of the PLA as Competent Pilotage Authority and Statuary Harbour Authority through which vessel pass, to provide the conduit for consultation.</p> <p>However, as the risk assessment showed that there would be little if any displacement effect on vessels, it is the view of the Applicant that further consultation on economic effects was not necessary.</p>

WR point	WR	Response
	<p>Given the above, the IPs were afforded no opportunity to contribute to the development of application evidence or supporting assessment and have had a limited opportunity to scrutinise the information now submitted with the application for development consent. Notwithstanding this the IPs are concerned that the 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:</p> <ul style="list-style-type: none"> • Increased journey distance and duration for certain types of vessels, and during certain sea conditions, resulting from a reduction in navigable width of the ‘inshore channel’ • 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) • 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 	<p>The Applicant notes that POTLL or DPWLG Written Representations focus on perceived commercial impact to shipping.</p> <p>The Applicant would note in the response to the bullets:</p> <ul style="list-style-type: none"> • Increased journey times have been assessed as part of the NRA Section 7.1 Page 66 on Impact on Vessel Traffic Routing, where increased distances travelled by vessels as a result of the TEOW development were analysed and assessed to not be significant. • The NRA does not recommend the relocation of the NE Pilot Boarding Station.
	<p>Without further evidence to the contrary, it is considered that such impacts could damage competitiveness to the extent that it materially and negatively affects the decision of shipping companies to ship goods to ports located within the Thames estuary</p>	<p>The Applicant has demonstrated that there will be little if any impact on shipping routing.</p>

WR point	WR	Response
	<p>Quantifying the types of vessels that the above matters would impact upon requires detailed assessment, taking account of a number of influencing factors. Such is considered to be the purpose of the Applicant’s Navigational Risk Assessment (NRA) (Document Reference: APP-089), associated Pilot Transfer Bridge Simulation Report (PTBSR) (Document Reference: APP-090) and relevant sections of the Environmental Statement submitted in support of the application including Volume 2, Chapter 1: Project Description (Offshore) (Document Reference: APP-042), Volume 2, Chapter 10: Shipping and Navigation (Document Reference: APP-051), Annex 11-1: Radar Line of Sight Analysis (Document Reference: APP-123) and Safety Zone Statement (Document Reference: APP-132).</p>	<p>The Applicant has no comment.</p>
	<p>The review of relevant policy and guidance in section 3 of this representation highlights the essential contribution UK ports, and in particular London ports, make to the national economy. It highlights that ‘London ports’ handled 18% of the total UK imports/exports in 2016, and accounted for 34% of the total contribution of ports to GVA in England in 2015. Indeed, the IPs’ response to the EXA’s ISH2 Hearing Action Point number 3(a) (see Appendix A) highlights that, if the 2016 figures for total UK imports/exports are taken as indicative of 2018 levels, POTL and DPWLG alone provided approximately 7% of total UK port capacity (12.84 million tonnes (POTL) plus 11 million tonnes (DPWLG) as a percentage of 337 million tonnes (see Section 3.2)).</p>	<p>The Applicant recognises the sections of the Ports NPS identified however the Applicant does not accept that there is a significant adverse effect on ports as a result of the proposed project.</p>
	<p>Given the above, the IPs contend that it is of critical importance that the NRA and PTBSR provide a robust assessment of the</p>	<p>The NRA and has been judged as compliant with Maritime and Coastguard guidance and the Applicant</p>

WR point	WR	Response
	<p>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' view that such an economic assessment should be submitted by the Applicant as additional information to inform the application.</p>	<p>considers both the NRA and the PTSBR to provide robust assessment safety ad justifies feasibility of continued use of the NE Pilot Boarding Station.</p> <p>The Applicants assessments demonstrate that impacts to shipping are not significant and as such there is minimal economic impact to shipping, which is aligned to Renewables NPS for shipping.</p>
	<p>The IPs are continuing to scrutinise the NRA and PTBSR. Initial review, however, gives the IPs reason to believe that these documents have failed to consider a number of relevant factors. In particular, the NRA:</p> <ul style="list-style-type: none"> • Recommends the implementation of a Vessel Management System (VMS) and highlights that this could be provided by the PLA but (a) fails to acknowledge that the management of shipping in the vicinity of the proposed TEOWF is currently outside of the jurisdiction of the PLA; and (b) fails to set out viable proposals for the implementation and management of such a system • Proposes that the NE Spit pilot boarding station be relocated into more open water, thus reducing the resilience of pilot boarding operations in adverse weather conditions or sea states • Acknowledges that the Pilot Transfer Bridge Simulation Report identified a reduced margin for error for shipping and pilotage activities, resulting in an increase in potential unsafe incidents of approximately 54%, but fails to set out viable proposals for the implementation of appropriate mitigation. 	<p>The Applicant believes that the following factors have been addressed:</p> <ul style="list-style-type: none"> • The Applicant has not proposed the implementation of a Vessel Management System, as it was demonstrated through the ALARP level hazards in the NRA that navigation risk levels acceptable. • The Applicant has not proposed that the NE Spit pilot boarding station be relocated into more open water, as it was demonstrated through the Pilotage Bridge Simulation and the ALARP level hazards in the NRA, that pilotage remained feasible (on the original RLB) and navigation risk levels acceptable. • The Applicant considers that the results of the Pilotage Bridge Simulation and the Collision risk modelling have been conflated. The Collision modelling indicates that a there is a 54% increase in domain encounters not in potential unsafe incidents.

WR point	WR	Response
	<p>With regard to the PTBSR, the IPs highlight a number of shortcomings in the approach to simulations within their response to the EXA’s ISH2 Hearing Action Point number 17 (see Appendix A).</p>	<p>The Applicant has noted these responses and provided comments on them at Appendix 11 of this Deadline 2 submission.</p>
	<p>To support consideration of economic impacts on shipping and port activities, in response to the EXA’s ISH2 Hearing Action Points (Appendix A), the IPs have provided the following information:</p> <ul style="list-style-type: none"> • Current port throughput (See Item 3(a)) • Forecast year on year growth (See Item 3(a)) • Intended and potential changes in the vessel traffic mix (see Item 3(c)) • Current and future anticipated maximum draft of vessels (see Items 3 (d) and (e)) • Evidence to inform assessment of additional journey duration/distance for ships unable to utilise the inshore channel during the construction and/or operation of the TEOWF (see Annex 3 to Appendix A of this document). <p>Information to inform a viable assessment of the number and type (i.e. size) of ships that:</p> <p style="padding-left: 40px;">(a) currently utilise the inshore channel;</p>	<p>This has been addressed in the Applicants Shipping Routes Written Representations (Appendix 3) and the Applicants response to IP Actions.</p>

WR point	WR	Response
	<p>(b) currently utilise the NE Spit pilot boarding station during different weather conditions and sea states; and</p> <p>(c) would be unable to utilise the inshore channel or NE Spit pilot boarding station during various different weather conditions and sea states,</p> <p>is not held by the IPs and has not been made available to the IPs in order to inform this representation. However, the IPs understand that such information is available among the wider UK maritime and shipping community and are in discussions with other Interested Parties regarding its provision to inform the ongoing Examination process. Without such an assessment of economic impacts, the IPs contend that the EXA will be unable to consider the effect of the proposals on London and wider UK port competitiveness, which is critical to the regional and national economy in the context of the TEOWF application for development consent.</p>	
	<p>In response to Item 7 of the ISH2 Action Points (see Annex 4 to Appendix A of this document), the IPs have identified proposed amendments to the application's Order limits unless suitable assessment, including in relation to economic impact, demonstrates that the effects of the application are acceptable. Such a reduction in the Order limits is considered at this stage to be the minimum required to maintain access for shipping via the inner channel and to maintain the existing levels of operational</p>	<p>The Applicant is cognisant of the proposed changes to the RLB proposed by POTLL / DPWLG, but does not consider there to be an evidence base for the extent of change of the RLB.</p> <p>POTLL / DPWLG state that the removal of all RLB to the west of the existing TOWF is the “<i>minimum required to maintain access for shipping via the inner</i></p>

WR point	WR	Response
	<p>use and efficiency of the NE Spit pilot boarding station. The IPs understand that such amendments are endorsed by the Port of London Authority, Estuary Services Limited and the UK Chamber of Shipping.</p>	<p><i>channel and to maintain the existing levels of operational use and efficiency of the NE Spit pilot boarding station”</i> – however this proposal will mean there is no impact to sea room for the inshore route and pilot boarding at NE Spit – so there would be no change to the status quo.</p> <p>It is the Applicants position that without an evidential basis for further reduction and a reliance on “qualitative” judgement, it is not justified for the Applicant to reduce the RLB further.</p>
<p>Page 11 (bullet point 3)</p>	<p>Acknowledges that the Pilot Transfer Bridge Simulation Report identified a reduced margin for error for shipping and pilotage activities, resulting in an increase in potential unsafe incidents of approximately 54%, but fails to set out viable proposals for the implementation of appropriate mitigation.</p>	<p>This noted previously, but identified more specifically here, the Applicant notes that the pilot transfer bridge simulation did not quantify a 54% increase in risk – this was a scenario of the collision risk modelling undertaken within the NRA.</p>
<p>Action 17 – bullet point 1</p>	<p>POTLL and LGPL are of the view that the Pilot Transfer Bridge Simulation report is of limited reliability due to the following factors:</p> <ul style="list-style-type: none"> • The simulations undertaken did not reflect the range of potential weather and sea state conditions that may reasonably be assumed to occur. For example, pilot boarding operations can take place in winds up to 75 knots. The simulations did not consider winds above 25 knots. This is 	<p>The Applicant notes these comments and, with regards to Section No. 4 and 5 of Appendix 25, Annex N and Section No. 18 of Appendix 28 (PINS Refs REP1-054 and REP1-012), confirms that weather and sea state conditions were representative with upper bounds of conditions selected and tested in consultation with the participants.</p>

WR point	WR	Response
	<p>particularly relevant as vessel leeway would be greater in higher winds, particularly at typical boarding speeds. Further commentary on the appropriate number of simulations and range of conditions to be considered is provided in response to the EXA’s first written questions (Question 1.12.3(b)).</p>	
<p>Action 17 – bullet point 2</p>	<p>The simulations allowed 1 to 2 minutes for the pilot to board the ship. However, LGPL and PoTLL contend that the boarding process, which involves positioning of the pilot vessel, boarding, transfer of the pilot to the bridge, orientation and master/pilot briefing, would take a minimum of 15 minutes in practice</p>	<p>The Applicant can confirm that this is not correct. The simulations allowed in excess of 5 minutes for a pilot transfer being required for a ‘successful’ grade as listed in Section 4.2 of the simulation report (PINS Ref APP-090/ Application Ref 6.4.10.2).</p> <p>The Applicant recognises that the wider transfer operation as described by POTLL and DPWLG can take 15 minutes or more and this is evidenced in the simulations by the start and end times of each run as recorded in the run summary sheets of Annex B to the simulation report (PINS Ref APP-090/ Application Ref 6.4.10.2).</p>
<p>Action 17 – bullet point 3</p>	<p>The simulations did not consider the 500m safety zone (construction phase) which is material and needs to be taken into account in respect of available sea room (see our response to point 11 above in respect of the Order limits and safety zones)</p>	<p>This is noted and analysis of the simulation track plots (Appendix 25, Annex L (PINS Refs REP1-045)) show that no vessel transits came within this proximity to the red line boundary (post RLB change).</p>
<p>Action 17 – bullet point 4</p>	<p>The simulation report concludes that measures would need to be developed however it does not define viable proposals for the implementation and management of such measures</p>	<p>Recommendations (and measures) were identified for consideration in the NRA which was subsequently undertaken (refer Section 8.5 of the NRA (PINS ref APP-089)/ Application Ref 6.4.10.1).</p>

WR point	WR	Response
Action 17 – bullet point 5	Simulations did not consider the presence of other craft (including fishing and leisure craft making way or at anchor)	Whilst some third party traffic was included this was not an intended focus of the simulation. The NRA interrogates the presence of other vessels using longer term datasets and collision risk modelling which is a more quantitative approach.
Action 17 – bullet point 6	The simulations did not consider vessels in excess of 300m; the maximum length of vessel currently utilising the NE Spit is 400m.	The Applicant does not agree with the measurement of a 400m LOA and 14m draught vessel, which is significantly in excess (by >100m) of that evidenced by the vessel traffic survey data (as per Section 5 Para 34 – 36 and accompanying schematics); and also conflicts with the response by PLA and ESL at Deadline 1.

6 London Pilots Council (REP1-104)

WR point	WR	Response
17.1	<p>The Pilot Transfer Bridge Simulation Report is of very limited value. The LPC can clearly demonstrate that the trial runs were made at the most opportune states of tide and without regard for professional best practice or regard for SOLAS V passage planning requirements. The quality of the PLA simulator as the sole provider of data for such a critical decision on the safety of navigation during Pilot operations is distinctly questionable.</p>	<p>This WR is addressed in Appendix 25, Annex N (PINS Ref REP1-054).</p> <p>The simulations undertaken are considered reliable. Tidal states were identified as representative with participating Pilots and with regards to any tidal restrictions which were embedded into the scenarios as tested.</p>

WR point	WR	Response
		<p>With respect to the comments on the simulator as a sole provider of data it is emphasised that the simulations are a component of the overall assessment (which included collision risk modelling, significant data analysis, consultation and adoption of a formal risk assessment). Furthermore, the quality and capability of the PLA simulator is not considered questionable. The simulator was proposed by the PLA for use on the project and is considered, by the PLA, to be “highly advanced” and “Pilots can test out and perfect manoeuvres against a background of the highest wind speeds and worst weather” (Source PLA Handbook 2018) and whilst it is noted that LPC make reference (Paragraph 17.6 of PINS Ref Rep1-104) to potential use of a Marin simulator (noting that the Applicant believes the PLA simulator was developed by Marin) this recommendation is made for reasons of weather and vessel interactions – which the PLA state their simulator is capable of representing.</p>
17.2	<p>The report suggests unsafe practices such as routing large vessels which are constrained by their draft to transit over the NESP bank. As this manoeuvre would only be possible at certain states of tide close to high water, then in practice vessels would incur lengthy and costly delays whilst awaiting such tidal conditions.</p>	<p>Unsafe practices are not proposed within the navigation simulation and its conclusions. The navigation simulation participants, including the participating Pilots, contributed to the design of the workshop and the outcomes (recommendations) and there was no statement at that time or subsequently with regard to unsafe practices.</p>

WR point	WR	Response
	<p>It is wholly unrealistic to expect a Grande type vessel of the type shown in the Report to delay for up to 6 hours. (See Fig.5)</p>	<p>It is emphasised, and demonstrated specifically within the plots of Appendix 25, Annex G and the interpretation of Appendix 25, Annex M (PINS Refs REP1-077 and REP1-051), that significant number of vessels currently navigate over NE Spit Bank and that there are comparable depth restrictions in that location to those of Princes Chanel and Fisherman Gat, in which the vessels also navigate. Notwithstanding this and noting that the Master of the vessel will make the determination of the whether safe transit over the NE Spit Bank is feasible (i.e. the Applicant does not suggest unsafe practice), the Applicant maintains that sufficient sea room exists at all states of tide for vessels to enter and depart the inshore route using the option between NE Spit Buoy and the wind farm and thus any depth limitation imposed by the NE Spit Bank (and/or Fishermans Gat and Princes Chanel) are existing and outwith the projects influence.</p>
<p>17.3</p>	<p>The report ignores the IALA Buoyage system and other Navigation aids which are in place at the NESP to ensure safe navigation within the sea area. In particular these are the NESP Racon East Cardinal Mark and the North Foreland Sector Light. Instead the Report calls for special traffic management measure to assist vessels and “organise traffic”</p>	<p>The report does not ignore existing buoyage and navigation aids and practices which are in place (these are considered embedded) although it is noted that a range of recommendations were explored, during the debrief, with participants and reported in the report to provide a basis for the navigation risk assessment to subsequently pick up from.</p>

WR point	WR	Response
	<p>between the Northwesterly extent of the proposed Windfarm and the “Shoal water of the North East Spit”</p>	
<p>17.4</p>	<p>The vessel is required by SOLAS V to prepare a Port to Port passage plan. Within that plan there are depth safety contours highlighted on the vessels ECDIS. The vessels Bridge Team expects the Pilot’s passage plan to roughly concur. The Prudent Master would certainly be questioning the safety of the passage when the Pilot suggests taking a large vessel, deep drafted in relation to the available depth of water, to the West of an East Cardinal Mark (denoting clear water to the East) and into the ‘Danger / Red Sector’ of the North Foreland light.</p>	<p>The Applicant draws the ExA attention specifically within the plots of Appendix 25, Annex G (Plot ‘Inshore Traffic – Ship Draught’ and ‘Dipping Traffic – Ship Draught’) and the interpretation of Appendix 25, Annex M (PINS Refs REP1-077 and REP1-051) showing the footprint of usage of existing vessel transits in relation to this buoyage by draught.</p> <p>The Applicant does not ‘ignore’ the IALA buoyage system and other navigation aids and supplements this with the information from the vessel traffic survey which demonstrates factually the transits of vessels and is thus embedded within the study.</p> <p>With reference to the above plots, and notwithstanding the large numbers of vessels that do transit to the west of the East Cardinal Mark NE Spit (as it is safe to do so with respect to the vessel draught, bathymetry and height of tide), it is noted that the larger draught vessels transiting the inshore route and dipping of which there is only 1 vessel per route in the survey duration (of 10.2m and 10.1m draught respectively) stay to the east of the East Cardinal Mark in accordance with the IALA buoyage system.</p>

WR point	WR	Response
		<p>However it is noted that the traffic management measure, as stated by LPC in this question was one of a range of recommendations that were explored, during the debrief with participants, and these were reported to provide a basis for future consideration in the NRA.</p>
17.5	<p>The Report advocates reducing the size of the Margate Roads Anchorage in order to increase available sea room. This is a very busy Anchorage and a Safe Haven. Typically vessels would be waiting for orders or berth availability. It is particularly busy during periods of strong winds, offering excellent shelter from the predominately South Westerly winds. The sea room in the navigable channel will reduce by 50% if the proposed extension goes ahead. It is of no surprise that the Applicants advocate a reduction in size of the Margate Roads anchorage, allowing more sea room for safety, contingency planning and traffic density. Several of the vessel trial runs in the simulation Report show vessel tracks manoeuvring at the very Eastern extent of the anchorage or very dangerously, just into the anchorage.</p>	<p>The use of Margate Roads Anchorage was discussed at ISH and its advantage as a safe refuge in specific conditions is recognised.</p> <p>The Applicant notes, with respect to the plots of Appendix 25, Annex G (PINS Refs REP1-077) that a small number of vessels not transiting to/from the anchorage area do currently transit into this area.</p> <p>During the simulations, as shown in the track plots of Appendix 25, Annex L (PINS Ref REP1-045), some incursions were made into this area (and incidentally this was not commented on at the time by the Pilots or Coxswains).</p> <p>The Applicant concludes that, on the occasions this sea room is used, it is because the sea room is available and not because it is required in order to have adequate space for the manoeuvre. The Applicant maintains, with reference to the navigation simulation plots and the sea room requirements as stated by LPC in Deadline 1, that sufficient sea room exists to the west of the red line boundary.</p> <p>The sea room in the navigable channel is not reduced by 50% at any point and the Applicant notes this with</p>

WR point	WR	Response
		reference to the plot 'NE Spit Sea Room Distances' in Appendix 28, Annex B (PINS Ref REP1-044).
17.6	<ul style="list-style-type: none"> • The capability of the PLA simulator is severely restricted and can only at best be indicative and should not be relied upon to give conclusive results sufficient for the Applicants purposes. • The simulator was unable to reproduce the existing Windfarm • The simulator was unable to reproduce the proposed extension. • Junior Pilots of Class 4 and Class 3, less experienced Pilots were not included in the simulation trials • The Pilot boat was substituted by a Tug model. • Whilst speed may have been replicated, the tug simulator does not have radar • It is disputed how simulations in restricted visibility were conducted without radar • Without an operational radar then AIS targets such as Leisure craft and some fishing vessels etc. could not be plotted by ARPA. This is a non compliance with the COLREGS. • No reductions in UKC for squat and swell were used or recorded 	<p>The following numbered bullets align the responses to London Pilots Council's bullets:</p> <ol style="list-style-type: none"> 1 The PLA simulator, as put forward by the PLA for use on this study, is considered fit for purpose and the results are a major and valid tool within the overall assessment. The capability of the PLA simulator is considered, by the PLA, to be <i>“highly advanced”</i> and <i>“Pilots can test out and perfect manoeuvres against a background of the highest wind speeds and worst weather”</i> (Source PLA Handbook 2018) 2 The existing wind farm was not visually present in the simulator (despite expectation to the contrary) and thus oil and gas platforms were placed along the RLB boundary to provide an adequate and comparable visual reference which was agreed, by the attendees to be fit for purpose. 3 The PLA nominated Pilots to attend the simulation – with those attending being qualified to make expert judgement on limitations of the range of mariners transiting the area and issues associated with experience of other Pilots. 4 The Tug model substitution provided sufficient facsimile representation for the purposes of the study. 5 The lack of radar on the tug simulator was substituted through provision of ECDIS screen to provide necessary information on relative vessel locations.

WR point	WR	Response
	<ul style="list-style-type: none"> • Simulators such as Marin in the Netherlands can replicate weather conditions, in particular swell and vessel leeway due to strong wind 	<p>6 The ECDIS was used to inform simulations in restricted visibility</p> <p>7 This is noted albeit these vessel types did not form a focus of the assessment in line with the objectives and for simulation these AIS targets were visible on ECDIS.</p> <p>8 Squat parameters</p> <p>The Applicant believes that the PLA simulator is developed by Marin and there was never any suggestion from the PLA or others at the time that key vessel/wind and weather affects (and interactions such as leeway) were not sufficiently resolved in the simulator at the time of the simulation.</p>

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