

Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Annex A to Appendix 26 to Deadline 6 Submission:
Summary response to Deadline 5 S&N submissions

Relevant Examination Deadline: 6

Submitted by Vattenfall Wind Power Ltd

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Contents

1	Summary response to Deadline 5 submissions on the topic of shipping and navigation	4
1.1	Introduction	4
1.2	Dominant themes	4
1.3	Approach	4
2	Overarching summary responses	5
2.2	Sea room	5
	Summary of representations	5
	Summary of Applicant response	6
2.3	RADAR	8
	Summary of representations	8
	Summary of Applicant response	9
2.4	Commercial concerns	11
	Summary of representations and Applicant response – pilotage	11
	Summary of representations and Applicant response – delays and deviations	16
2.5	Independent navigation simulation	17
	Summary of representations	17
	Summary of Applicant response	17
3	Conclusions	19

1 Summary response to Deadline 5 submissions on the topic of shipping and navigation

1.1 Introduction

- 1 This document has been drafted to provide a summary of the responses received from Interested Parties (IPs) in relation to Shipping and Navigation (S&N) matters. The document is intended to provide an initial summary of the dominant themes emerging from the combined S&N IP submissions, and provide the Applicant's overall response to the S&N IP representations. This document accompanies a point by point response to each of the IP representations which is presented at Appendix 7 of this Deadline 6 submission.

1.2 Dominant themes

- 2 The dominant themes that emerge from the D5 IP submissions are as follows:
 - Sea room
 - RADAR
 - Commercial concerns (pilotage)
 - Independent navigation simulation

1.3 Approach

- 3 This document seeks to address particular themes before then drawing them together as a final summary.

2 Overarching summary responses

4 The core themes identified in Section 1.2 above are described in the following sections

2.2 Sea room

Summary of representations

5 Appendix 12 to the Applicants Deadline 5 submission confirmed through reference to the oral submissions made at ISH8 the following with regards searoom:

- London Pilot Council have confirmed that-
 - the 2nm shown at the Elbow buoy is acceptable;
 - the 3.4 mile sea room, shown in Figure 1 to Appendix 14 to the D4 submissions (sea room available just north of the NE Spit pilot diamond, where the greatest density of pilotage operations occur), agrees with the request made by LPC at this location
 - the 3nm sought further to the north, in the area of the NE Spit Racon buoy, should be met;
- PLA/ESL confirmed that –
 - Retention of existing searoom is necessary to avoid any impact on ESL operations.
- London Gateway/Port of Tilbury confirmed that –
 - The ports' case is not based on issues with sea room relating to the passage of vessels, searoom for passage vessels being acceptable.
- MCA and Trinity House confirmed that
 - searoom calculations require consideration of qualitative and quantitative factors. Within the Trinity House SoCG that accompanies this Deadline 6 submission Trinity House have confirmed that the work undertaken to understand qualitative factors is beyond that undertaken for any previous project, and that this meets requirements in a proportionate manner.

Summary of Applicant response

- 6 The Applicant recognises the good level of progress that the introduction of the SEZ has facilitated with regards searoom. The Applicant considers therefore that the remaining areas of consideration are searoom for pilotage generally to ensure no impediment to pilotage operations for ESL/PLA, and the NE Spit Racon for other parties. It is important to note that LPC's suggestion as submitted at Deadline 4C (REP4C-012) and submitted directly to the Applicant aligns with the SEZ submitted by the Applicant. It is unclear to the Applicant on what basis a further revision has been submitted by the LPC (REP5-061) at Deadline 5 is made. The various submissions made by LPC are illustrated Annex E to Appendix 26 of this Deadline 6 submission.
- 7 The Applicant considers that the searoom at Elbow was accepted as adequate at ISH8 by LPC (and recorded in the Applicant's response to LPC's Deadline 4c submission at page 7 of Appendix 16 of the Applicant's D5 submission), LG/PoT, and as recognised as an area of reduced complexity by ESL with the searoom broadly acceptable. The Applicant does note that there have been some deviations from these positions in the representations made subsequent to ISH8 but considers that the broad themes of agreement remain the same.
- 8 With regards the NE Spit RACON the Applicant has demonstrated through both qualitative and quantitative means that the searoom reflects the current vessel usage including vessel passage, turning and pilotage, and future vessel usage by providing for multiple large vessels to pass concurrently; a phenomenon that is yet to be practically identified in any of the extensive datasets that have been analysed by the Applicant or IPs.
- 9 The Applicant has demonstrated through quantitative collision risk modelling that accompanies this Deadline 6 submission (Appendix 42), that the searoom is adequate at all locations with an acceptable and tolerable increase in risk that reflects the hazard likelihood scoring and conclusion of ALARP, as defined by both the Applicant's NRAA and in the Applicant's understanding PLA's draft D4C hazard log.

- 10 On this latter submission (PLA D4C hazard log for Thanet Extension (PINS ref: REP4C-015), the methodology endorsed and mandated by PLA during the period in which the D4C submission and ISH8 occurred¹ is provided at Annex B to Appendix 22(ExQ3). Whilst this differs in the definition of ‘moderate’ hazard scores from that presented in PLA’s D4C submission, the latter definition which excludes the important qualifying text that the ‘*activity may be undertaken*’, is assumed to be an error as the PLA’s NRA guidance for operators² identifies that “*It is logical, and not unreasonable, that the approach to and method of risk assessment undertaken by owners/operators in such circumstances is the same or similar to that employed by the PLA*”.
- 11 The re-scoring of the Applicant’s hazard log in the PLA’s D4C submission identifies the highest inherent risk as ‘moderate’ in the risk matrix. As stated above, the Applicant considers the PLA’s standard guidance risk assessment matrix to be the most appropriate reference for the PLA’s approach to hazard scoring, having previously been utilised on both Tilbury 2 and Silvertown Tunnel DCOs. The net result of which is that the PLA’s hazard log provides an inherent (pre-risk control) score for Thanet Extension to be ‘Moderate’, and therefore defined as – “*Efforts should be made to reduce risk to ‘As low as reasonably practicable’ (ALARP), but activity may be undertaken*” as provided in Annex B.
- 12 Further the Applicant has illustrated through provision of multiple real time animations of existing activities under a range of vessel density and metocean limit states (Appendix 41) that on the busiest days there are a limited number of simultaneous operations and the searoom is adequate for this to be continued, and that on marginal days at the limit state of pilotage operations very limited numbers of operations would need to alter, with the remaining searoom adequate to accommodate this. The Applicant has demonstrated through reference to the IALA MSP guidance that the searoom remaining allows for simultaneous vessel manoeuvres that are beyond the current baseline conditions, and inherently therefore provides for increases in future traffic density and size.

¹ It is noted by the Applicant that the webpage providing a link to the methodology has been amended since the 19th May 2019 to remove reference to the PLA risk assessment template, the template remains publicly available at <https://www.pla.co.uk/assets/fm197plariskassessmenttemplate.xlsx>

² <https://www.pla.co.uk/Safety/SMS/Navigational-Risk-Assessment-Guidance-to-Operators-and-Owners>

- 13 As such, the Applicant concludes that the residual concerns relating to sea room and pilotage are specifically focused on the limited times and conditions where either LPC or PLA/ESL consider that certain operations would need to be conducted away from where they currently operate. Whilst the Applicant does not accept that this is necessary, it is clear from Deadline 5 submissions that these concerns relate to the potential commercial impacts that this displacement may have on the pilot operations. These commercial impacts are considered in detail at Annex C to this Deadline 6 submission.

2.3 RADAR

Summary of representations

- 14 A single IP (LPC) provided information regarding RADAR. The Applicant notes that LPC appear to have misinterpreted elements of the oral representation made by Capt Simon Moore, at points appearing to seek to personally discredit a fellow mariner. The Applicant has clarified Capt Moore's relevant experience below, and in responses to ExQ3 3.12.1.
- 15 LPC indicated that Captain Moore criticised the radar range scale in use, the pulse setting and the sensitivity settings of the radar picture in the LPC Submission 4, Fig.7. Captain Moore claimed that the range scale was in his opinion unsafe and should be set at 1.5 miles for anti collision.
- 16 LPC considered what was taken to be Captain Moore's Radar scale of 1.5 miles to mean that if a vessel speed is 15 knots then the time available to determine if risk of collision exists is 6 minutes, but only if the target is stationary ($1.5 \text{ ml} / 15 \text{ kn} = 0.1 \times 60 \text{ min} = 6 \text{ mins}$). In elaborating on this point LPC identify that if the target is a vessel moving at 15 knots then the closing speed on a reciprocal course is 30 knots there is only 3 minutes to determine if risk of collision exists.
- 17 Contrary to this LPC consider their own Radar scale of 3 miles offset = 4.5 miles. This means a target appears on screen with 18 minutes to determine if a risk of collision exists and for a target on a reciprocal course and speed, a full 9 minutes to appraise the situation and take avoiding action.

Summary of Applicant response

- 18 The Applicant first notes that through reference to the audio recordings of ISH8 that Capt. Simon Moore at no stage suggested a Radar scale of 1.5nm should be used. The observation made by Capt. Moore, who it is noted is a qualified instructor in Radar skills for (amongst others) the RYA, was that the pulse length in use was higher than the minimum setting for the range in use. Additionally, the gain control was set at almost full which was distorting the picture. This observation was given to highlight that in using the described radar settings this had the adverse effect of distorting the windfarm and creating additional interference on the radar. This in turn made using the radar to determine risk of collision more difficult.
- 19 Whilst the Applicant notes and respects the wider submission made by LPC with regards Radar set up, given the premise is unfortunately an erroneous interpretation of Capt. Moore's submission the Applicant does not feel it appropriate or necessary to provide further response to the specific points raised.
- 20 The Applicant does note however that LPC refer to Kentish Flats OWF. The Kentish Flats OWF was subject to a number of research studies, including one specifically focussing on Radar (Investigation of Technical and Operational Effects on Marine Radar Close to Kentish Flats Offshore Wind Farm, 2007³).
- 21 The data collected during these trials and the preliminary analysis of the effects observed proved to be of great value when considering the navigation of vessels within and near to wind farms. The important aspect of the research was the real environment in which it took place. The trials not only involved a sizeable and varied sample of commercial shipping, Navigators, VTS and Pilots but it also involved leisure and small commercial craft. The scenarios of passing shipping and other contacts in and close by the wind farm were all covered to varying extents.
- 22 From the trials and discussions with mariners it was seen that (Applicant's emphasis added):
- 23 **Mariners passing the Kentish Flats through a pilotage area were aware of the types of effect that was evident but stated that, in the circumstances of these trials; they were of little direct concern to them;**

³ This research was conducted independently by MARICO Marine on behalf of the British Wind Energy Association (BWEA). The project steering group was made up of BWEA, the Department of Trade and Industry (DTI), the Maritime and Coastguard Agency (MCA) and the Port of London Authority (PLA).

- 24 The phenomena detected on marine radar displays in the vicinity of a wind farm can be produced by other strong echoes close to the observing ship, although not necessarily to the same extent. Trained mariners will recognise and understand the causes of these effects;
- 25 Reflections and distortions by ship structures and fittings created many of the effects observed leading us to conclude that the strong returns from the wind farm was highlighting some vulnerabilities in ships' radar scanner installations;
- 26 **The effects observed were transitory in relation to the speed of the vessels passing the wind farm site;**
- 27 The spurious echoes were frequently generated by ship's structures and fittings combined with the reflecting qualities of the turbines;
- 28 Other effects were produced by the inherent limitations of marine radar systems combined with the reflecting qualities of the turbines;
- 29 **In the circumstances in which these trials were conducted, navigators were able to effectively track other vessels from both within and behind the area of the wind farm;**
- 30 **Selected small craft operating in and near the wind farm were detectable by radar on ships operating near the array. The return signals appeared to be relatively unaffected by passing through the array although normal or automatic gain levels could eclipse very small targets;**
- 31 **Echoes of small craft within the wind farm can merge with strong echoes generated by the turbines when the craft pass close to the towers making them invisible to radar observers or automatic plotting facilities. While navigating, this effect will only be temporary until the craft moves away from the turbine;**
- 32 Small craft operating within the wind farm array were less detectable by type approved, or non-approved, radars on other vessels when the latter were operating within the array. This appeared to be due to enhanced effects from the close approach to the turbine towers and the reflective effects caused by them. Careful adjustment of Gain could improve detection, but skill was required on the part of the operator;
- 33 **The Spaniard Buoy was used as a reference target by observers and it was also notable that when on the opposite side of the wind farm array the quality of its returned echo did not appear to be adversely affected;**

- 34 **Pilots were aware of possible interference but most have not to date found cause to analyse it more closely. Like the other mariners who were familiar with the area and the effects of the wind farm they were relatively unconcerned with them in their present form and position. However, some expressed concern at the possibilities if wind farms were sited closer to regular routes and particularly in way of channel junctions or routes through multiple wind farms**
- 35 Modern commercial cargo vessels in particular are regularly fitted with radar scanners that may not be optimally sited in relation to obstructions onboard the vessel and other considerations;
- 36 VTS static radars can be subject to similar phenomena as above, (even when the scanner is sectored) if passing vessels provide a suitable reflecting surface; and
- 37 AIS equipped vessels did not suffer loss of signal at any point outside or within the wind farm ("MORVEN" is AIS equipped).
- 38 It is therefore the Applicant's evidenced position that irrespective of the apparent erroneous reference in LPC's D5 submission, the proposed project will not have a material effect on the ability to utilise radar, and therefore will not have a material effect on safety in limit or marginal states where greater reliance is placed on radar.

2.4 Commercial concerns

- 39 With regards commercial considerations there are two themes - those associated with the operation cost for pilotage, and those associated with the operational cost for deviations or delays for cargo. Reference should also be made to Annex C of this submission which addresses commercial concerns more specifically, through reference to IP submissions throughout the examination process.

Summary of representations and Applicant response – pilotage

- 40 The following text seeks to address key themes in the round, and for ease of narrative summaries of representations are presented alongside the summary of Applicant responses. Whilst this deviates somewhat from the approach in this wider submission it is considered to allow the reader to get a better picture of the overall position.
- 41 Key representations received from ESL include reference to:
- 238 vessels [being] served by ESL in the area of the Elbow in 2018.*

One third of the boardings and landings took place during or adjacent to periods when ESL was operating a restricted service and the Sunk pilot station was either off station or restricted. The remaining two thirds of vessels using the area of the Elbow would have done so as a result either of the sea conditions, or due to traffic considerations.

*Operations which took place when the **Sunk pilot station was off station or restricted almost certainly took place in the vicinity of the Elbow as a direct result of adverse sea conditions which restricted or prohibited ESL's service and the use of the Sunk pilot station.** If the Elbow had not been available as the reserve option for pilotage services, **it is likely that ESL would not have been able to offer pilotage services at these times.** This would have caused significant disruption to these vessels, which included container ships for London Gateway and Port of Tilbury and tankers for Grays, Shell, Navigator, West Thurrock and Oikos oil terminals. It would also have had a knock-on impact to subsequent vessels due at these berths.*

- 42 Whilst there is no data provided as to what the underlying metocean conditions were, ESL have previously provided estimates of what causes downtime/off station, but yet do not seem to record what the weather records/locations were during these periods. PLA/ESL seemingly therefore have no records of precise locations where they undertook pilotage, under what circumstances, and what the prevailing conditions were. In the absence of data the position of the PLA/ESL would appear to the reader to be based on supposition.
- 43 What the representation does not recognise is that the vast majority of vessels taking a pilot at Elbow do so whilst on passage, i.e. there is limited need to turn/dip. There is simply a need for a pilot to get a lee. There is, therefore, irrespective of the lack of evidence provided by PLA/ESL on when Elbow becomes more important for their operations, no impediment to the use of Elbow and this has been accepted by LPC at ISH8, with acknowledgement made by ESL regarding the reduced complexity.
- 44 The following text within ESL/PLA's representation then states:
- If the proposed development goes ahead, the use of the Elbow will be [more commonly] restricted or inhibited, which will increase the times that pilotage services are unavailable and, in turn, decrease the commercial attractiveness of these ports and terminals. The effect of that would be to reduce the employment and economic opportunities offered by the pilotage services, ports and terminals.*

- 45 The available evidence provided by IPs, including ESL, does not support the assertion that the Elbow would become more commonly restricted, neither does it reflect that Elbow pilotage ops are of a fundamentally different nature. The searoom provided at this location has been identified by LPC as being adequate for operations. Whilst limited if any evidence is provided to support the assertion, ESL's representation critically identifies that it will reduce employment and economic opportunities for the pilotage services. This appears to confirm that the primary concern is commercial competitiveness. As has been evidenced both at ISH and in written submissions it is the Applicants position that there is no reason for the vast majority (>95% as identified in response to the ExA's ExQ3 (Appendix 22) of pilotage operations at the Elbow to suffer any impediment. Through a review of 12 months of data, wherein a recognised poor weather 'day of downtime' was identified through reference to ESL submissions, it is possible to see that during the day of restricted downtime a single vessel undertook a pilot transfer within the proposed array boundary (Animations at Appendix 41 to this Deadline 6 submission, and accompanying annexes). The Applicant acknowledges that this specific location for this specific transfer would not be possible with the proposed Thanet Extension in place. An impediment to a single transfer however is not a barrier to consent, the policy tests having clearly been met by minimising the potential commercial effect associated with the project.
- 46 In the oral summary of ISH8 Cathryn Spain (PLA harbour master, and director of ESL) then draws on Richard Jackson's (ESL coxswain) weather references to state:

Ms Spain reinforced Mr Jackson's concerns about the weather. She said that it can be seen from pilot logs that weather is a significant factor in the location of pilotage operations. Increased numbers of operations take place to the South in heavy weather because the Elbow buoy provides more shelter.

- 47 There has been limited evidence put forward to this effect but the Applicant does note the ESL logs as submitted to the Applicant and included at Annex D to Appendix 22 of this Deadline 6 submission. The Applicant notes that the weather downtime at all stations in 2017 was 10 restricted/off service days across the 9 pilotage areas identified in the ESL/PLA's Deadline 4C submission (ESL working area), or across the 3 pilotage diamonds (Tongue, NESpit and Goodwin). This translates as 10 days from 3285 'pilot area days' (i.e. each area multiplied by 365 days) or 10 days from 1095 'pilot diamond days' (i.e. each diamond multiplied by 365 days). As a proportion of time this equates to 0.3% and 0.9% of total pilotage days in 2017 that were affected by weather downtime depending on whether reference is made to ESL's pilotage areas or the pilot diamonds more specifically⁴. This indicates that whilst certain stations may be more liable to downtime than others, the total weather downtime of all days for all areas/diamonds is between <1% in 2017 and <3.11% in 2018, a small fraction of the overall time during which pilotage resilience could be considered to be affected.
- 48 The Applicant proposes that unlike the commercial fishermen that provide log book, landings, spatial use of the area, and substantive constructive liaison to put forward the very best available evidence for the EIA, ESL seem to have a comparatively limited record keeping to demonstrate the weather conditions, the circumstances, the limitations to their operations. For a commercial organisation charging clients for time on board, and rationale for why pilots cannot be boarded (i.e. when there is a delay to cargo entering the ports), it is reasonable to expect that detailed records would be available. The Applicant has demonstrated that there is a full and adequate characterisation of the receiving environment with which to underpin the EIA. This includes a comprehensive understanding of the seabed, bathymetry, metocean conditions, and utilisation of the searoom by commercial fishermen, recreational users, shipping and navigation users (Appendix 27 of the Applicant's D4C submission), and other infrastructure such as cables, disposal sites, and aggregate extraction. It is not therefore the Applicant's position that further evidence is needed to underpin the assessment, but the Applicant's position is that where there is a disagreement regarding a commercial impact, evidence would be required in order to reach agreement on the potential losses that may be suffered.

⁴ 2018 provides a range (34 days total downtime) between 1.04% and 3.11% respectively for total pilot area days and total pilot diamond days.

- 49 Whilst the Applicant has provided substantive evidence of why it considers there to be no significant impact on operations, inclusive of the qualitative experiential factors at play, PLA and ESL have been unable to provide any quantitative evidence of their business operations. PLA as a 50% shareholder in ESL presumably have business growth targets and an understanding of the constraints, costs faced by ESL, and require justification for weather downtime and locations where these occur. In the absence of those detailed records it is not possible to contextualise the residual effect further than the Applicant has sought to do (Annex C of Appendix 26), which whilst unlikely to be significant (i.e. <1% of any annual pilotage acts or pilotage days) is recognised by the Applicant as being above zero.
- 50 Whilst ESL have provided a broad grid of operational locations, what has not been provided are the Polaris point specific data of these transfers. Various parties have identified these exist, indeed the London Gateway have utilised them and identified that the data do not allow an analysis of size/ draught which have been discussed throughout the examination phase as critical factors, the analysis is by their own admissions therefore porous at best. Instead the Applicant has provided a breakdown of 'speed over sea' to illustrate the spatial range of operations. The illustration of these operations by the Applicant has demonstrated that >90% of pilotage operational use of the area (i.e. including transit/holding to in bad weather/on standby, and not just transfers themselves) will continue unimpeded. When refined to actual locations of pilotage transfers there is every likelihood that this will in fact be >95% of transfers can continue unimpeded and able to carried out in the same location, inclusive of safety buffers. In this context the Applicant has sought not only to minimise effects and avoid impinging on pilotage transfer locations, but has effectively sought to avoid impingement of areas that pilot vessels might use, at some point, during a year.
- 51 In the case of PLA/ESL for what is now evidenced to be a concern over residual operational costs, there has been no evidence provided as to what the scale of effect might be. The persistent proposal for ESL seems to be predicated on there being no interaction with their operations at all. This was made clear at the ISH8. This is in no way supported by policy, by NSIP precedent, or under any associated regulations, and no operational cost implication has been put forward, even in response to the ExA's Action Points.

- 52 The Applicant has noted that LPC's proposal to dredge the Fisherman's Gat and/or the Edinburgh Channel would require substantive consideration with regards the implications for the Margate and Long Sands SAC. By way of context Thanet Extension considered the potential for an adverse effect on integrity that may arise from farfield (>10km) deposition of sediment (<0.01m). PLA and LPC are proposing an aspiration to undertake significant (i.e. >1,000,000m³) of dredging in the same site. A wish or aspiration is clearly different to a considered proposal, and LPC's recent submission would suggest a less than considered proposal which should not influence determination of this application either as a future aspiration for an IP, or an in-combination effect on a European designated site.
- 53 Paragraphs 2.3 to 2.8 of LPC's representation are therefore predicated on an assumption that a future suggestion to undertake significant levels of dredging of a designated area may be consented and that the Applicant provide searoom to allow for it. Whilst the Applicant has demonstrated provision of adequate searoom for a number of present and future scenarios it is not considered reasonable or proportionate to provide for an aspirational project that is not on any public registers, and that is predicated on the need to undertake works that will result in a likely adverse effect on the integrity of an internationally designated site.

Summary of representations and Applicant response – delays and deviations

- 54 A detailed consideration of the potential commercial impacts that may arise from deviations is presented at Annex C to this Deadline 6 submission. Duplication is not therefore made here but the Applicant considers it valuable to note that PLA and ESL in particular have made reference to existing regional studies undertaken by Anatec in 2016 in their Deadline 4 submission. The report considers the impact of the existing Thanet OWF and concluded that Thames bound vessels were subject to multiple but minor route alterations and route formalisation. There has been no discernible influence or impact raised by IPs on the deviation (and therefore commercial impacts), arising from TOWF.

2.5 Independent navigation simulation

Summary of representations

- 55 The IPs, have identified the preference for a bridge simulation exercise to be undertaken. HR Wallingford, in acting on behalf of London Gateway and Port of Tilbury have referred in ISH's to the potential for a conflict of interest as HR Wallingford are a provider of such bridge simulation services. The Applicant therefore considers any such suggestion should be carried out in an independent facility.
- 56 HR Wallingford also identify that further to the searoom calculations that have been presented using quantitative guidance suggested by HR Wallingford, combined with qualitative and experiential guidance provided during workshops held with expert maritime practitioners a navigation simulation exercises could be undertaken to validate the searoom calculations.
- 57 Whilst MCA have accepted that there is no policy requirement to undertake a navigation simulation the MCA did confirm at ISH8 that it could be considered a useful indication of the acceptability of the project, which would inform an NRA.

Summary of Applicant response

- 58 The Applicant has provided multiple representations and responses to representations with regards the pilot bridge simulation exercise that accompanied the application. It is the Applicant's view that given the simulation exercise was undertaken using experienced professional mariners, in a simulator that was subject to £250,000 investment shortly before being utilised for the project, in consultation with PLA as both providers and stakeholders, weight can be placed on it. Further the Applicant notes that the existing navigation simulation exercise confirmed pilotage operations to be feasible under a range of limit states. ESL and PLA at ISH8 (identified in Appendix 12 of Applicant's D5 submission) confirmed that the pilotage operations across the NE Spit pilot boarding area go 'off station' at 30 knots of wind, whilst the pilotage simulation was undertaken at 25 knots (in agreement with the participants). It is the Applicant's position that the pilotage simulation therefore inherently provided for an agreed account of limit states for pilotage operations (i.e. at 25 knots, with stations likely to go off at 30 knots). In addition to this the Applicant has utilised baseline data that covers a range of limit and exceedance of limit states within the NRAA; 2017 having been subject to a number of storm events and pilotage stations being 'off station'. Appendix 41 (AIS animation) provides a real time illustration of the use of the area in such limit states, identifying infrequent incursions within the proposed SEZ, and rare incursions within the proposed array area.

- 59 The Applicant accepts that, based on the submissions made by PLA, ESL and LPC, there may be rare occasions during which alternative arrangements may need to be made but would note that these represent a very small proportion of activities in an area where there remains adequate searoom to undertake those activities at a slightly (i.e. within 0.5nm)- different location. Further consideration of the commercial impacts associated with altered pilot boarding activities is contained in Annex C to this Deadline 6 submission (Appendix 26).
- 60 The Applicant has also noted that the navigation simulation formed one facet of the overall NRA, with other studies including the collision risk modelling, and liaison with stakeholders also forming important facets.
- 61 It is the Applicant's position, as detailed further in Appendix 38 (navigation simulation scope report) of this Deadline 6 submission, that a navigation simulation exercise is not necessary to underpin the NRA, and such an inclusion is not a requirement of policy, nor indeed the NRA for the existing Thanet OWF or any other North Sea OWF. With regards the calculation of searoom requirements it is the Applicant's position that the combination of quantitative evidence and data based analysis, combined with the qualitative evidence provided by all IPs during oral representation and at workshops specifically focussed on the qualitative components of searoom is in and of itself in excess of any previous NRA for an OWF or other marine development, or indeed any spatial planning of the marine environment, and can therefore be considered a robust and beyond best practice example of stakeholder engagement in defining searoom. During liaison with Trinity House the level of qualitative evidence provided was discussed and agreed as being of a significantly higher level than for other projects, with both parties agreeing that, whilst proportionate to the concerns under consideration, the level of qualitative engagement has been notably high. An additional semi-quantitative computer simulation exercise would therefore be, to a large extent, duplicative and does not recognise the many layers of precaution that have been applied to the original simulation, both through its qualified use in the NRA and the substantially increased sea room provided by the boundary change prior to submission and the introduction of the SEZ.
- 62 Notwithstanding this the Applicant has provided a scope for any such study, should the ExA consider it necessary to make a recommendation to the Secretary of State that a navigation simulation would be useful in informing whether a positive determination could be made. The scope is provided at Appendix 38 of this Deadline 6 submission.

3 Conclusions

- 63 From a review of the representations made at Deadline 5 it is apparent that there remain areas of disagreement between IPs and the Applicant. The areas have become focussed during examination to the NE Spit RACON, and operational costs. Residual concerns with regards RADAR and other geographical areas of the inshore route are recognised as being lesser areas of focus.
- 64 The Applicant has presented in this summary what it considers to be a transparent and robust account of the scale of effect predicted and can confirm that these are likely to be minimal.