

ISH 2 Hearing Action Points

London Pilots Council (LPC) Submission

15th January 2019

Sections relevant to the LPC are as follows;

- Section 4.3 Tilbury 2 NSIP Shipping Traffic. Projections or forecasts
- Section 7.0. Red Line Boundary Requests
- Section 10. MGN 543 Compliance
- Section 13. Effects on Pilot service Efficiency and Cost
- Section 16. Masters and Pilots opinion on vessel proximity to WTGs
- Section 17. Pilot Transfer Bridge Simulation Report assessment
- Section 18. PLA / Port / Services regulatory risk data

Section 4.3. & Section 4.4.

Tilbury 2 NSIP Shipping Traffic, Projections or forecasts

The London Pilot Council does not possess any relevant data or reference material for consideration in this section.

Section 7. Red line boundary reduction request

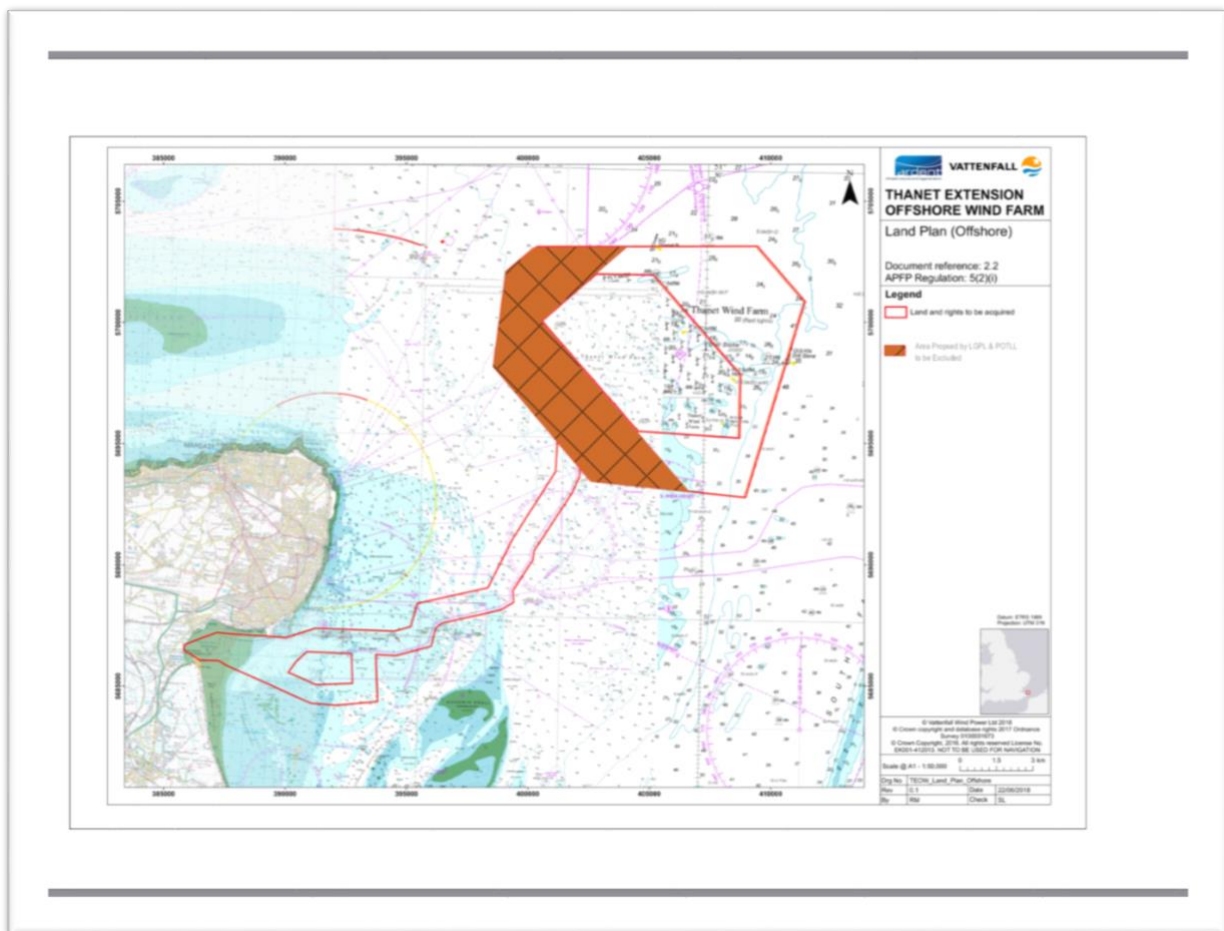
- i The LPC considers the proposed extension to the Thanet Windfarm to have considerable impact on the Safety of Navigation of vessels transiting the NESP sea area due to greatly reduced sea room caused by the proposed Windfarm extension and in particular having a significant Pilot safety and Pilot logistics impact on Pilot boarding and landing operations at the NESP Pilot station.
- ii The LPC considers that in its collective professional opinion the risk of collision, grounding and near miss for Large and Medium sized vessels is greatly increased due to the restricted vessel manoeuvring areas and narrow corridors for transiting the area that the extension together with the 0.5Nm exclusion zone, will create.
- iii The LPC considers that because of reduced sea room causing increased traffic density, increased risk of collision and reduced manoeuvring room for vessels then Pilots will be placed under additional and unnecessary duress whilst conducting Pilotage acts in and around the NESpit area, especially during periods of high winds, heavy seas and periods of reduced visibility
- iv Whilst it can be demonstrated that smaller, Class 4 vessels will continue to cross the NE Spit bank, some 77.4% of all Pilotage acts will be at increased risk and may be rerouted for safety of navigation.

Section 7. Red line boundary reduction request....contd.

v Vessels which are rerouted will create significant additional cost to their Owners, Pilot launch and Berth operators and to the Port of London. There will also be an additional environmental impact to the NESP area due to the considerable amount of additional 'steaming hours' as a consequence of rerouting vessels.

vi Fig. 1. The LPC requests that the Western boundary of the planned extension is removed as shown by the hatched/ shaded area shown in Fig.1

Fig.1. Requested reduction of the Red Line Boundary



Section 10. MGN 543 Compliance

10.1. The planning guidelines in MGN543 have been applied in this instance to provide a safe navigable area around the NESP sea area so that Masters of vessels and Pilots alike may employ best practices as Marine Professionals to avoid close quarters situations, risk of collision and grounding and avoid increased traffic density due to compressed sea room, at all states of tide and in all conditions of weather and visibility.

10.2. The planning application for the proposed Thanet Windfarm Extension has failed in principal to provide a safe navigable area for mariners. Sections of MGN543 where guidelines are not met are shown, as follows;

i MGN 543 / 2.3 “regard to the extent and nature of any obstruction of or danger to navigation (without amounting to interference with the use of such sea lanes) is likely to be caused by the carrying on of the activities”.

ii MGN 543 / 2.4 “ have regard to the need to prevent interference with users of the sea”.

iii. MGN 543 / 3.2 Recommendations should be used to “evaluate all navigational possibilities by which the siting, extension and operation of an OREI could cause or contribute to an obstruction of, or danger to, navigation or marine emergency response”.

iv. MGN 543 / 3.4 “ Assessments should be made of the consequences of ships deviating from normal routes and recreational or fishing vessels entering shipping routes”.

“Special regard should be shown to evaluating situations which could lead to safety of Navigation being compromised eg. an increase in end on or crossing encounters, reduction in sea room or water depth for manoeuvring, leading to choke points etc etc”.

v. MGN 543 Annex 2. Traffic Survey

2.a ..”take account of seasonal variations in traffic patterns and fishing operations.” AIS data alone will not constitute an appropriate traffic survey”.

2.d. The LPC considers that Factors taken into account have been misrepresented in the Applicants appreciation of the principals of MGN 543

2.d.viii. “Proximity of the site to areas used for anchorage, safe haven, port approaches and Pilot boarding and landing area”.

2.d.xv. “Proximity of the site to any types of aids to Navigation....and any impact thereon”.

2.d.xvi. “Researched opinion using appropriate computer simulation techniques with respect to the displacement of traffic and in particular the creation of Choke Points in areas of high traffic density”.

Section 10. MGN 543 Compliance.....contd.

10.3. MGN 543 Annex 3

MCA Template for assessing distances between OREI boundaries and shipping routes

10.3.i. Annex 3.5

“Additionally, marine traffic surveys would identify vessel type which may consequently require larger domains to ensure that the following factors can be taken into consideration in determining corridor widths”

- Compliance with the best practices of seamanship
- The manoeuvrability of vessels with special reference to stopping distance and turning ability in the prevailing conditions
- Provisions that may be required with mechanical failure of vessels
- The state of visibility, wind, sea, and tidal stream and the proximity of navigational hazards
- The traffic density including concentrations of fishing vessels or any other vessel
- The draft in relation to available depth of water

10.3.ii. The LPC suggest that the developers may have submitted their application based upon the finest of margins or minimal compliance for the safety of Navigation for commercial vessels as proposed in MGN 543 and have not accepted the principals of safe navigation as observed by marine professionals and in particular in relation to

a The location of navigation hazards such as the NESP bank

b Pilot boarding requirements for vessel speed and position in relation to length and draft of vessel with the available sea room, depth of water and traffic density.

c The proximity of the Margate Roads Anchorage and the numbers of vessels transiting the anchorage, vessels that frequently anchor at the Eastern extremity of the anchorage and the use of Margate Roads Anchorage as a safe haven.

d Frequent weather and visibility conditions which affects all vessels in close proximity to one another. The Prudent Mariners adjusts speed in reduced visibility and increases sea room accordingly. Heavy swell conditions determine vessel position in relation to navigation hazards with an increase in desired UKC (under keel clearances). High winds affect vessels such as car carriers and container ships which have large windage areas. Vessels of this type carry large degrees of leeway and require greater turning circles.

e Observing the COLREGS. Vessels are frequently involved in end on and crossing situations which require ample sea room to resolve. Class 2 and above type vessels are frequently constrained by their draft and require additional sea room and traffic

management when in proximity to the Spit bank. Vessels must use all possible means including radar to determine if risk of collision exists, however the proximity of WTGs restrict the use of X band radar for ARPA and traffic identification.

f Traffic density in the NESP area with vessels transiting the area, going to anchor or involved in Pilot operations. There are frequent close quarters situations develop which are managed by Pilots, VTS and vessel Masters. The reduction of sea room creates a greater risk and frequency of such incidents and increases traffic density.

g The loss of sea room and the involvement of vessels whose Masters are infrequent visitors or have have no experience of the area increases risk of close quarter situations, miscommunication and misunderstanding of vessel movements around the area

g The affect on traffic density and collision risk of non commercial traffic present in the navigable channel between the NESP Racon and the NE Goodwin such as sport fishing and sailing boats and other pleasure craft at peak seasonal times, July to September.

10.3.iii. Further non compliance of MGN543 is demonstrated in applying the criteria for Vessel manoeuvring detailed in Annex 3. a. i – v and Annex 3 b i, bii and c, d and f.

Fig. 2 ,Table for turning circle of vessels at the NESP Pilot boarding diamond with a boarding speed of 6 – 7.5 knots based upon standard turning circles of 6 times vessel length. (MGN 543 Annex 3 10.a.i)

Vessel class	Length (meters)	Turning Circle (cables)	Add 6 mins at 6 knots	R'qd Safe Sea Room
Class 4	120	4 cables	6 cables	1 mile
Class 3	145	5 cables	6 cables	1.1 mile
Class 2	175	6 cables	6 cables	1.2 miles
Class 1	320	1.04 miles	6 cables	1.6 miles
Havens "Cap San" Class	333	1.1 miles	6 cables	1.7 miles
NRA Grande Vessel	236	0.8 miles	6 cables	1.4 miles

From Fig.2 it can be concluded that a safe navigable sea area for Pilot boarding and landing operations has not been created in accordance MGN 543 Guidelines.

- The 'choke points' at the NESP boarding diamond are 1.2 miles and at the NESP Racon Buoy 1.4 miles.
- A margin of 6 mins Pilot boarding time at 6 knots, 6 cables, must be added to all distances to achieve a safe sea room requirement under normal operating conditions

- From the above table it can be seen that following the Guidelines in MGN 543 then; All Class 4 vessels can be boarded during normal operational conditions in the reduced sea room of 1.2 miles at the NESP Boarding diamond
- Class 2 and Class 1 vessels can not be boarded safely in the available sea room under any condition at either the Pilot Boarding Diamond or further North at the NESP boarding diamond. Class 3 vessels may be boarded to the North at the NESP Racon Buoy .
- Havens Category vessels arriving and departing at drafts of 9m and less for the London Gateway Port have recently been risk assessed for Pilot operations at the NESP. This operation would not be possible under any condition
- The vessel used in the Applicants NRA can not be safely served either boarding or landing a Pilot at the NESP boarding diamond as they suggest.

Section 10. MGN 543 Compliance.....contd.

Annex 3 10.a ii.

The Netherlands assessment of sea room requirements based upon PIANC assessment for channel design suggests a buffer free zone of 2 nautical miles between wind farms and shipping lanes. Fig. 3 Shows the available sea room available following the proposed Windfarm extension .

10.3.iii. The Thanet Windfarm Extension clearly falls below that recommendation as the sea lane to the North of the extension and the Tongue anchorage, a main seaway or thoroughfare used to serve the Princes Channel, has available sea room of 1.7 miles, reduced from 3.0 miles. This is a loss of 43% of available sea room and well below the guidelines of 2 miles found in MGN 453.

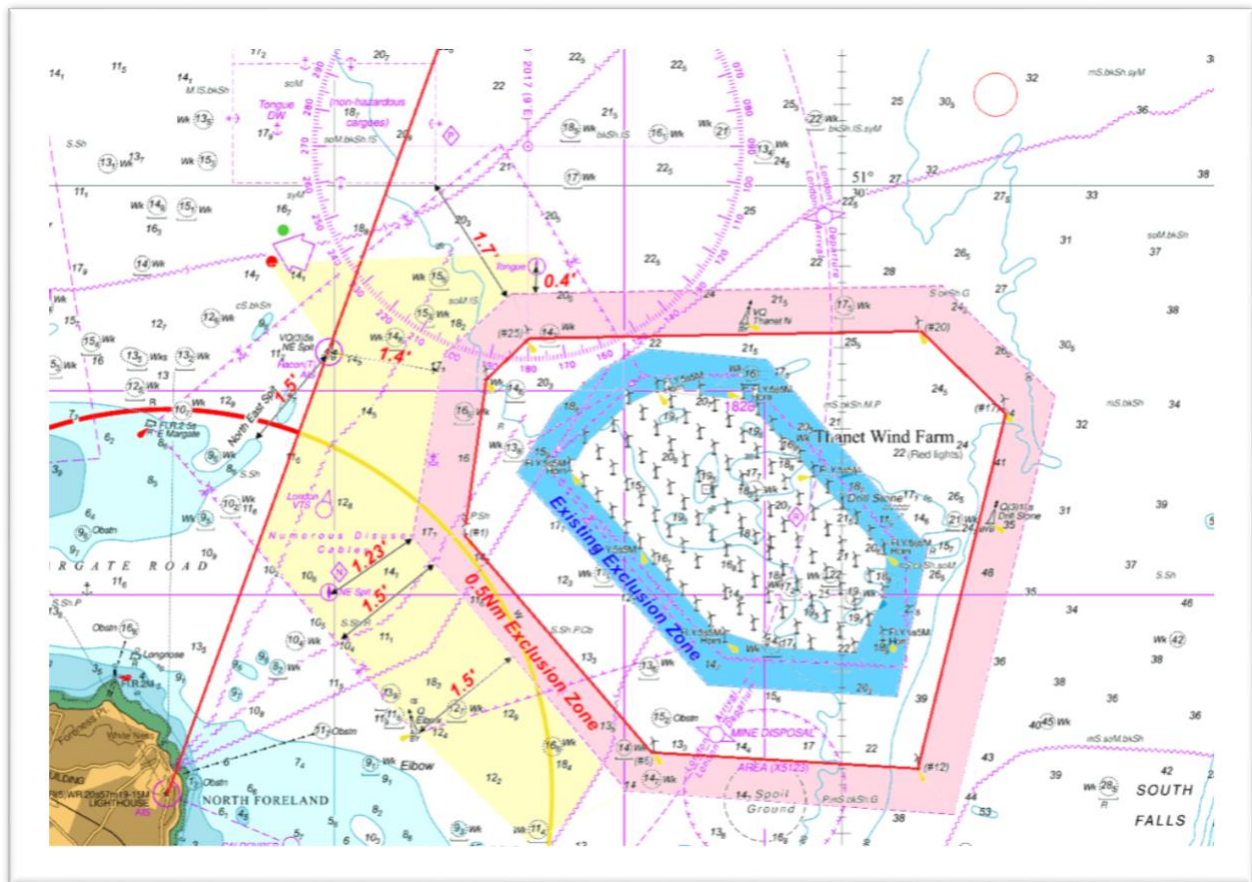
10.3.iv. Annex 10.a.iv and v passing vessels

“Between overtaking and meeting vessels a distance of two ships length is normally maintained. (Based upon 400m vessels meeting)”. “The assumption that four ships should safely be able to pass each other”.

10.3.v. If 4 x 400m vessels pass, maintaining 2 x 400m distance apart, each vessel having a beam of 50m and passing one ships length from the extremities of the channel then the MGN 543 guidelines are again not met for the main seaway to the North of the extension.

$(3 \times 800) + (4 \times 50 \text{ beam}) + (2 \times 400 \text{ extremities}) = 3,400\text{m} / 1852. = 1.83\text{miles}$
The available sea room to the North of the Windfarm between the exclusion zone and the Tongue anchorage is only 1.7 miles, clearly less than that advised in MGN 543 Annex 3 10.a.iv and v.

Fig.3. Available sea room following the proposed Thanet Windfarm Extension



Section 13 Effects on Pilot Service Efficiency and Cost

13.1. The Port of London conducted 4,498 Pilotage acts of all class of vessel from 1st January 2018 to 12th December 2018 which were either boarding or landing Pilots at the North East Spit Pilot Boarding area.

13.2. Of these, 1014 were Class 4 vessels, small vessels that could safely navigate outside the main sea area and safely cross the NE Spit Bank.

13.3. The remainder of vessels, 3,484 vessels, 77.4% of all Pilotage acts at the North East Spit will potentially be rerouted

13.4. Large and medium sized vessels may be routed to the East and North of the proposed Windfarm. This would necessitate boarding Pilots at the NE Goodwin and transiting around the extended Windfarm maintaining a 0.5mile exclusion zone. The total distance from the NE Goodwin to the Princes Outer Buoy at the start of the

13.5. Princes Channel is 25.4 N miles. This is an increase of 7.8 miles or 45 to 50 minutes per vessel transit.

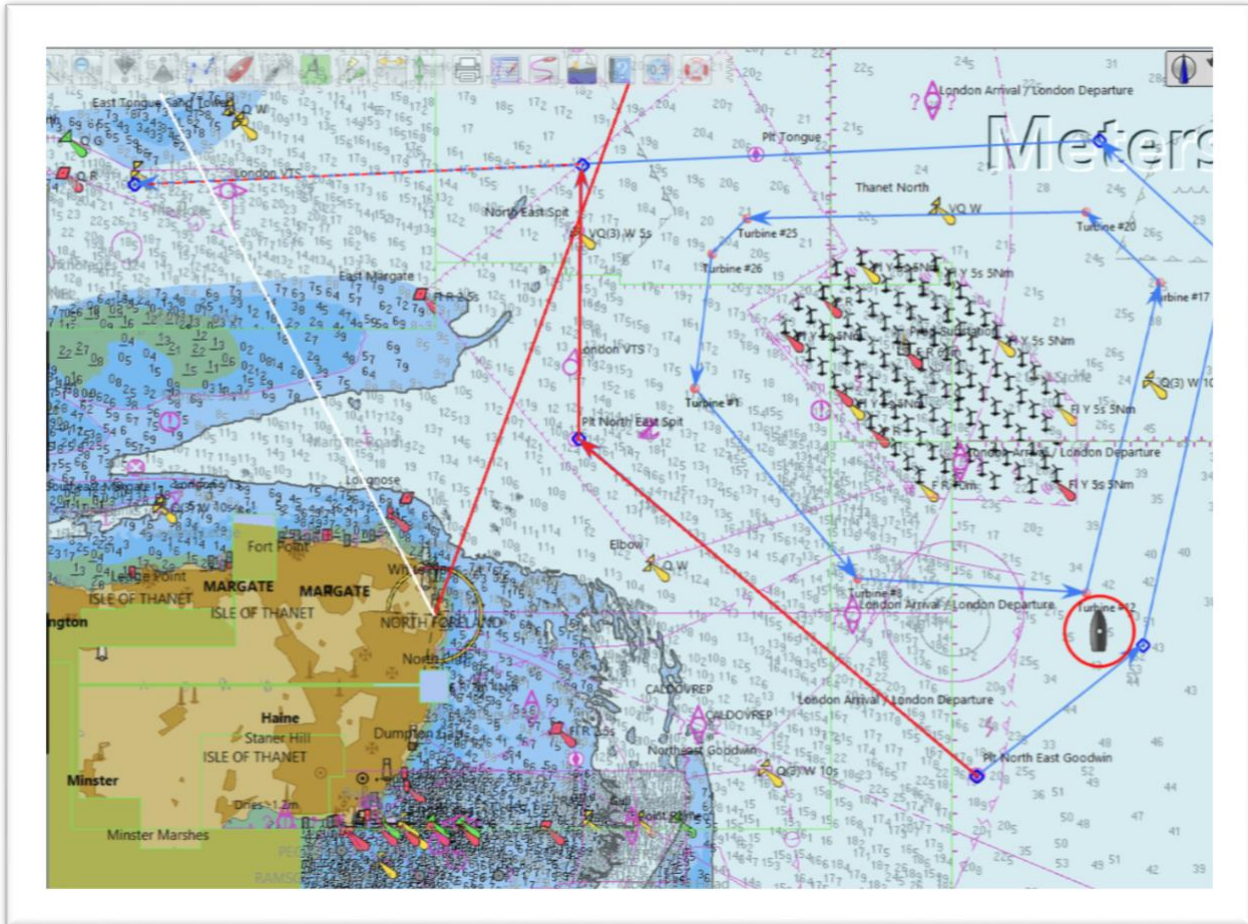
13.6. However, 50 minutes extra per Pilotage act for 3,484 acts costs the Port of London an additional 2,903 Pilotage hours or approximately 3 additional Class 3 to Class 1 Pilots per year. Based upon 140 Pilotage acts per Pilot per year at an average of one 8 hour act alone. Travel, base times and time spent on the Pilot cutter are not included in this calculation.

13.7. Typical feeder vessels to Tilbury operating on a coastal voyage, coming from the continent then a normal 8 hour voyage from Rotterdam has increased in time and fuel cost to the ship owner by 12.5%

13.8. Tankers going to Vopak or Jurgen in Long Reach at Purfleet are typically a 6 or 7 hour on board Pilotage from boarding to leaving the vessel. The Pilot has been called one hour before taxi, travelled to Ramsgate for the Pilot launch one hour before boarding then had a taxi back from the Berth to the base, an additional 3 or 4 hours may be added to the onboard time. A total of 10 hours per Pilotage act. This length of time is at the personal limit of safe fatigue management for most Pilots.

13.9. It is therefore not unreasonable to suggest that as an anti fatigue measure then an extra Pilot per act boarding at Gravesend for every Tanker berthing at Vopak, especially large hazardous vessels, will be introduced as a matter of course because of additional time added due to rerouting. This fatigue management measure is in practice in part, typically if a vessel has been delayed or is slow on passage.

Fig. 4. Rerouting large and medium sized vessels



NESP distances inbound from arrival arc to the Princes Channel

- **NE Goodwin inbound via NESP Pilot boarding diamond 17.6 mls**
- **NE Goodwin inbound passing around Windfarm extension 25.4 mls**
- **Additional passage distance 7.8 miles / 50 mins**

Section 16

Masters and Pilots Opinion on Vessel Proximity to Operational WTGs

16.1. It is the professional opinion of the London Pilot body that all vessels, from small Class 4 vessels upwards should not approach any Windfarm at a distance of not less than 0.5 miles whilst on normal passage, whilst transiting the area.

16.2. Vessels which are manoeuvring for Pilot operations should be at a minimum safe distance as shown in the table, Fig.2. This is 1 mile for small vessels and in excess of 1.5 miles for large vessels and almost 2 miles for Ultra Large Container vessels. This is because the vessel is not a stationary object and needs to make a speed of a minimum of 6 to 7.5 knots for safe boarding and landing a Pilot and may well be on a heading that would put the Windfarm or other navigational hazard right ahead.

16.3. It is worth bearing in mind that the vessel may be more than a cable in length from the bridge, at the reference point where the radar scanner range data is recorded, to the bow. This effectively adds another cable to the above distance when swinging a vessel.

16.4. During periods of heavy weather and reduced visibility then additional searoom may be required due to excessive leeway, typically experienced by car carriers and loaded container vessels in strong winds.

16.5. UKCs (Under keel clearances) are increased due to heavy swell. It is not prudent to approach the NESP bank with the minimum UKC of around 1.5m when there is a 2m swell running. The vessel will simply ground or 'slam' on the bank.

16.6. Periods of reduced visibility, defined by the Port of London where the visibility is less than 0.5 miles, effectively concentrates the Prudent Masters attention on the proximity of traffic and navigation hazards, such as a Windfarm. At such times then the experienced Master will maintain the maximum possible distance from such hazards in order to allow more time for collision avoidance as vessels are not in sight of one another. If there is an allowable 1.5 miles sea room (See Fig. 3) and a 0.5 mile exclusion zone available sea room from the actual WTGs then it would be best practice to maintain the middle of the Channel with maximum sea room both sides possible from the WTGs, 1 mile distant from the red line boundary in this instant.

Section 17

Pilot Transfer Bridge Simulation Report

17.1. 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.

17.2. 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. 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)

17.3. 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” between the Northwesterly extent of the proposed Windfarm and the “Shoal water of the North East Spit”

17.4. 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.

17.5. 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.

17.6. 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

- Simulators such as Marin in the Netherlands can replicate weather conditions, in particular swell and vessel leeway due to strong wind

Fig. 5 Calculation for a Grande vessel crossing the NESP bank

	MLWS	MLWN	MHWN	MHWS
MARGATE	0.6	1.3	4.0	4.8

Range of Tides : Springs 4.2m. Neaps 2.7
Hourly HOT. Springs 0.7m. Neaps 0.45m (Not linear)

Grande Vessel. 236m x 9.8 m Draft
(9.8 + 1.5 UKC) – 8.6 NESP Bank. Requires HOT 2.7m to cross the Spit.

$(2.7\text{m} / 4.0\text{m}) \times 6 \text{ hours Tide} = 4.05 \text{ Hours after low water}$

The earliest time at which a Grande vessel may cross the NESP bank represents a delay to the vessel of at least 4 hours after low water. However, this does not allow for a reduction in the underkeel clearance for squat and swell.

Section 18

PLA and Other Port Services Regulatory Risk Data

18.1. The London Pilot Council does not possess any relevant data or reference material for consideration in this section.

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