

# **Vattenfall Wind Power Ltd**

## **Thanet Extension Offshore Wind Farm**

Appendix 25, Annex J to Deadline 1 Submission:  
Consultation Minutes and Correspondence

Relevant Examination Deadline: 1

Submitted by Vattenfall Wind Power Ltd

Date: January 2019

Revision A

Drafted By:	Marico Marine
Approved By:	Daniel Bates
Date of Approval:	January 2019
Revision:	A

Revision A	Original Document submitted to the Examining Authority
N/A	
N/A	
N/A	

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## Minutes of Meeting held on 15-Feb-2018

Client: GoBe Consultants  
 Project: 16UK1255 Thanet Extension Offshore Windfarm (TEOW)  
 Venue: Maritime & Coastguard Agency, Spring Place, Southampton  
 Date of Meeting: 15 Feb 2018 at 1400

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Present:	MCA	Helen Croxson (HC)
	MCA	Peter Lowson (PL)
	Trinity House	Trevor Harris (TH)
	Vattenfall	Mike Vanstone (MV)
	GoBe Consultants	Sean Leake (SL)
	Marico Marine	Jamie Holmes (JH)
	Marico Marine	Andrew Rawson (AR)

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Item	Action item / Notes for the record	Action
<b>1</b>	<b>Introduction</b>	
	<ul style="list-style-type: none"> <li>• HC led introductions, explaining MCA's current position on the proposed red line boundary, considering the increase in risk/overall impact, and whether the interference with legitimate users of the sea is outweighed by the benefits of the project. MCA wanted to see what had changed since the last meeting to address these concerns. JH thanked all for attending and the time MCA and THLS had given in their contribution and feedback to date.</li> <li>• Purpose of the meeting is to re-convene following the last meeting (10/01/2018) and ahead of a formal deliverable in order to:               <ul style="list-style-type: none"> <li>○ present summary of NRA findings</li> <li>○ discuss the NRA in relation to the nature of the stakeholder feedback (through S42 responses and consultation)</li> </ul> </li> <li>• The NRA outcomes present a risk profile which is at a discrepancy in relation to the nature of the stakeholder concerns and it is important to review the NRA in terms of its:               <ul style="list-style-type: none"> <li>○ Compliance (principally with MGN543)</li> <li>○ Accuracy</li> <li>○ Findings</li> </ul> </li> </ul>	
<b>2</b>	<b>Progress to Date</b>	
	<ul style="list-style-type: none"> <li>• SL gave overview of project status.</li> <li>• Project intends to proceed to formal DCO application in June (May preparation) and intention is to seek consent to the Red Line Boundary (RLB).</li> <li>• SL discussed the EIA evidence plan which acts as a formal means by which agreement on baseline data, methods of assessment, and early stage</li> </ul>	

	<p>documentation, all of which is actively encouraged by PINS. In this context SL asked if the project could use a similar approach to seek consultation on the NRA.</p> <ul style="list-style-type: none"> <li>• HC proposed that MCA would welcome opportunity to review draft NRA prior to submission in June, to see specifically which revised <b>mitigation measure relates to each identified hazard</b>. It was agreed that being able to comment on this and identify/resolve/narrow queries/issues prior to application. Until this is seen and understood it is difficult to respond further, and possibly change our current view/position on the extension.</li> <li>• HC encouraged sharing of layout plan and ERCOP at earliest possible stage.</li> </ul>	
<b>3</b>	<b>Presentation and Discussion of NRA</b>	
3.1	<p><b>Slide 1 – 11.</b> Describing the process to date. Drawing forward the scoping studies, early consultation and identifying the need to better understand the baseline as related to some key themes. An overview of the simulation studies and collision risk modelling was presented.</p> <p><b>Slide 8</b> - Key routes and no. of movements per 24hrs was discussed on the main traffic routes in the area. TH questioned the presence of recreational and other small boats in the dataset. AR described how the consultation had sought to inform the assessment of the frequency and routes of small boats not present in the AIS data.</p>	
3.2	<p><b>Slide 9-11</b> - AR gave an overview of the collision risk modelling, its results and how it relates and informs the risk assessment.</p>	
3.3	<p><b>Slide 12-15</b> – AR gave an overview of the NRA methodology, the scoring criteria and definitions of hazards. AR sought to demonstrate that the methodology employed was industry standard and recognizable to both MCA and THLS.</p>	
3.4	<p><b>Slide 16</b> -Incident Data</p> <ul style="list-style-type: none"> <li>• AR explained sources of data included Local, National, Sector based datasets. This approach was in order to broaden the data sources – recognising the importance of this information to the risk assessment.</li> <li>• Discussion held on data and the under/un-reporting of incidents (eg: Fishing vessel Contacts) and near misses. AR described how the consultation had sought to fill in the gaps on incidents by listening to the experiences of operators in the area and anecdotal feedback. It was, however, recognised that incident data is not a perfect representation of risk.</li> <li>• TH raised the question of using 18 years of incident data to inform the analysis when the existing Thanet windfarm was constructed only in 2010. AR explained that whilst the risk profile would have changed, 2010 to 2016 was not considered a large enough sample given the low frequency of collisions, contacts and groundings.</li> </ul>	
3.5	<p><b>Slide 17</b> – Example Hazard</p> <ul style="list-style-type: none"> <li>• AR explained the basis of Hazard ID No.6 Collision between 2x large commercial vessels – a hazard ID of concern</li> <li>• AR sought to demonstrate how the scoring was logical and informed by evidence, particularly collision risk modelling and incident data.</li> <li>• Baseline risk is within ALARP (4.59). With embedded risk controls (5.05) and remains within ALARP with additional risk controls (4.75)</li> </ul>	

	<ul style="list-style-type: none"> <li>• HC keen to review risk control/mitigations as relate to each of the hazards as per section 2 above</li> </ul>	
3.6	<p><b>Slide 19 – Tolerability of Risk</b></p> <ul style="list-style-type: none"> <li>• AR explained the primary reference of tolerability took the HSE guidelines (1999) which were endorsed by IMO and used widely across industry.</li> <li>• The objective of this was to take compare the assessed risk against the individual risk and provide a further assessment of tolerability.</li> <li>• The results suggested that across all vessel types (with the exception of fishing which is a known high risk industry) the scores were below accepted thresholds of risk.</li> </ul>	
3.7	<p><b>Slide 20 – Risk Controls</b></p> <ul style="list-style-type: none"> <li>• AR explained embedded RC’s along with possible additional RC’s, explaining which risk controls had been dropped from PEIR.</li> </ul>	
<b>4</b>	<b>Section 42 responses</b>	
4.1	<ul style="list-style-type: none"> <li>• HC question on providing details on layouts, ERCOP.... etc... SL explained that this detail will be confirmed in DCO stage. Info prior – where possible.</li> </ul>	
<b>5</b>	<b>Next Steps</b>	
5.1	<ul style="list-style-type: none"> <li>• Share draft report with MCA for an early review prior to EIA submission</li> <li>• Review compliant methodology</li> <li>• HC referred to Anatec feasibility study drawing attention to nearshore zones (AR to check – if this as the 2 routes feed into the TSS). HC would send details of this when available to Heidi Clevett (VTM) at HMCG for review.</li> <li>• Question on liaison with Dover CNIS – which MCA will do as part of their assessment.</li> <li>• Review requirement to share/re-consult with PLA.</li> </ul>	AR
<b>6</b>	<b>AOB</b>	
6.1	MV reiterated thanks to attendees on behalf of Vattenfall.	

**THANET EXTENSION MEETING MINUTES - MMO**

<b>MEETING ORGANISER:</b>	VATTENFALL WIND POWER LTD
<b>MEETING DATE</b>	23RD AUGUST 2018
<b>ATTENDEES:</b>	DAN BATES (VWPL) (DB) MIKE VANSTONE (VWPL) (MV) JAMIE HOLMES (MARICO MARINE) (JH) ANDREW RAWSON (MARINE MARINE) (AR) SEAN LEAKE (GOBE CONSULTANTS) (SL) – ON PHONE HELEN CROXSON (MCA) (HC) MUHAMMAD KHAN (MCA) (MK) ROGER BARKER (THLS) (RB) TREVOR HARRIS (THLS) (TH) STEPHEN VANSTONE (THLS) (SV) TONY EVANS (DOVER COASTGUARD) (TE) – ON PHONE
<b>APOLOGIES/MEMBER NOT REQUIRED FOR PARTICULAR MEETING:</b>	N/A

<b>Agenda item</b>	<b>Topic for discussion</b>	
<b>1</b>	Welcome and Introduction	
<b>2</b>	Project Summary	
<b>3</b>	Design Changes	
<b>4</b>	Summary of the shipping and navigation assessment	
<b>5</b>	Outcomes of the NRA results and impacts	
<b>6</b>	Statements of Common Ground	
<b>7</b>	AOB	
<b>Notes &amp; Actions</b>	<b>Notes</b>	<b>Action</b>
<b>1</b>	<b>Welcome and Introduction</b>	<b>N/A</b>
<b>2</b>	<p><b>Project Summary</b>            Project was submitted to PINS on 27<sup>th</sup> June 2018 and accepted on 23<sup>rd</sup> July 2018. In the interim before examination the project will be organising meetings with stakeholders to aim to resolve areas of disagreement and agree areas of agreement.</p> <p>Examination is expected to begin in late October/ early November 2018. The project milestones are presented in slide 6.</p> <p>The consultation period for Relevant Representations (Relevant Reps) will end on 12<sup>th</sup> September.</p>	

3	<p><b>Design Changes</b></p> <p>The array boundary has been reduced since PEIR (see slide 9) sea room for shipping and navigation. RB stated that the northwest &amp; western boundaries of the project would be the main area of concern. JH noted that this would covered on slides going the NRA and recognised this would be a key point for the Statement of Common Ground.</p> <p>The OECC has been reduced since PEIR so that it tapers down to the landfall and is also reduced around Ramsgate harbour entrance. A cable exclusion area (CEA) has been included, where cables will not be installed but anchor handling may occur within this zone.</p>	
4	<p><b>Summary of the navigation risk assessment (NRA)</b></p> <p>JH went through the work undertaken leading to the NRA including stakeholder meetings held, baseline information collected and additional supporting studies including the pilotage study, real time bridge navigation simulation and collision risk modelling.</p> <p>TH stated that, in the bridge navigation simulation, no allowance had been made for masters who do not know the area or who are inexperienced and therefore the results of the simulation could not be used to support the NRA.</p> <p>RB commented that he had received concerns from the PLA, and others, on the validity of conclusions drawn from the outcomes of simulation (that the simulation used experienced pilots who were familiar with the area) were not reflected and that this was a serious concern for THLS.</p> <p>JH noted the comments of RB and TH and emphasised that the bridge navigation simulation had been proposed and setup with the agreement of the PLA and ESL and was focussed on understanding the specific requirements of pilot transfer operations (ie: involving embedded experienced and locally familiar pilots and pilot boat coxswains). JH confirmed that the report had been circulated for comment to all participants but no responses were received on the conclusions agreed at the simulation wash-up.</p> <p>MV stated that this (the situation of not necessarily being experienced with a particular area) is no different to many other ports that are busier or narrower and that this point had been made in previous meetings. RB confirmed that the comments (on the simulation report) were coming from THLS licenced deep-sea pilots and looking at an area with huge levels of traffic and shipping</p> <p>RB stated that key issue is that THLS do not consider the project to have reduced risk to As Low As Reasonably Practicable (ALARP) and also questioned on how ALARP is determined on this project.</p> <p>RB quoted the NRA Executive summary statement “....increase in collision rate from once in six years to once in four years.” And said this is unacceptable. A slide in the presentation had shown mitigation reducing this to one in 4.5 years.</p> <p>RB questioned the validity of the approach of using the red line boundary for the purposes of assessment and not exact turbine</p>	

<p>positions. MV confirmed that turbine positions are not available for a number of reasons including the need to undertake full geotechnical assessment. DB stated that this is the way that all offshore wind farms approach assessment, by providing a ‘worst case’ based on a boundary.</p> <p>RB pointed out that any safety zones extending outside of the RLB could restrict the sea room between the windfarm and the coast by up to an additional 500m and this was not shown within the NRA. It was confirmed later in the meeting that the 500m safety zone is for construction and major maintenance activities only and that during operation a 50m safety zone would exist. [Post meeting note from MCA - The point here is that any turbines placed on or near the redline boundary, the 500m safety zone (during construction and major maintenance) would constrict vessels even more, which is not reflected in the NRA]</p> <p>MV referred to Rotterdam as a port with greater constraints and traffic that the area effected by Thanet Extension and that this was acceptable. RB commented that there is a higher level of risk mitigation in place at Rotterdam port, such as greater control of small craft (including fishing and recreation), so not directly comparable.</p> <p>RB asked how wind farm vessels were taken into account in the NRA. AR confirmed that both construction vessels and an increase in maintenance vessels were included in the collision risk modelling and the NRA.</p> <p>RB stated that it is very difficult to quantify of the increase in risk from situations with inexperienced masters, background small boat traffic and poor metocean conditions. AR described how the baseline risk assessment inherently takes this into account as these situations and factors are already present in the historical analysis of data and are quantitatively and qualitatively included in the assessment. The impact of the extension is the reduction in sea room and the impact on risk upon these already present risk factors.</p> <p>RB pointed out concern regarding the point in the NRA that refers to removal of buoys. TH stated that the Drill Stone buoy is not there to keep people away from the wind farm but away from the Drill Stone Bank. TH discussed the need for moving a THLS asset and that consideration was needed for moving it back post decommissioning.</p> <p>HC set out the MCA’s position on these issues. The MCA remains concerned whether the risk is ALARP, with the collective impact , and the resultant change required in an already complex area for navigation. HC expressed concern as to whether the safety of navigation will be preserved in the area going forward with the proposed mitigation, and that the change made to the boundary was not considered sufficient to conclude the risks were reduced to ALARP with the risk controls identified in the NRA.</p> <p><i>At this point Tony Evans gave an update (via voice conference call) from recent Sunk VTS meeting held on 25<sup>th</sup> July. JH requested that minutes of this be provided to the project team.</i></p> <p>The summary of points from the meeting were:</p>	<p>MCA/THLS to provide minutes of Sunk VTS Meeting 25/07</p>
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	<ul style="list-style-type: none"> <li>• Significant concerns about the project remain in relation to the effect on the pilot area and the impact of safety zone.</li> <li>• NRA was not detailed enough and not reflective of the true conditions in the vicinity of the wind farm.</li> <li>• The bridge navigation simulation and assessment did not take into account the most adverse metocean conditions and used experienced pilots rather than unfamiliar mariners.</li> <li>• Concerns about the requirements on other users to change operations to fit in with the wind farm</li> <li>• Extra pressure on coordination</li> <li>• Summary – risk would not be reduced to ALARP</li> </ul> <p>TE questioned the level of coordination that would be undertaken by Vattenfall. MV confirmed that coordination of construction vessels would be undertaken by Vattenfall, during the operation and maintenance (O&amp;M) period vessels would be coordinated in the normal way.</p> <p>TE questioned whether increased coordination was required. RB had concerns on the adequacy of this coordination.</p> <p>MV suggested that additional coverage of the area (e.g. radar on turbines) could be included to enhance monitoring and coordination of the area. HC stated that as it stands any additional risk would have to be managed by the PLA and sunk VTS. [Post meeting clarification] - The acceptability of the additional risk being managed by the PLA / sunk VTS has not been confirmed.</p> <p>HC/MK discussed the possible increase in workload of PLA VTS operators as a result of the project.</p>	
<p>5</p>	<p><b>Overview of NRA results and impacts</b></p> <p>RB stated that overarching risks have not been reduced to ALARP. TH confirmed that main issue is the northwest &amp; western boundaries and that from THLS perspective there is not an issue with the east or north boundaries.</p> <p>RB and SV said that in general the NRA was thorough, had covered and understood the breadth and complexity of this area and contained more detail than might be expected from other NRAs however consider that some of the risk control measures proposed may not be as effective as the NRA states – leading to a conclusion of ALARP in the NRA.</p> <p>DB questioned RB’s statement on ALARP – is possible risk control mitigation available but not implemented or is the RLB itself inherently not acceptable. RB stated that THLS are not inherently against OREIs and have supported other extensions where the impact to shipping has been managed successfully e.g. Burbo Bank.</p> <p>HC confirmed that the NRA had followed MGN 543 and the methodology guidance, which is a useful tool to ensure all relevant aspects are considered. How the risk is then addressed and mitigated will inform the view as to whether the extension would be to the detriment of safe navigation. There were some comments on the MGN543 checklist that would be sent through to Marico Marine. Mitigation needed to be further discussed. Comments on the dML and DCO would follow in the relevant representation.</p>	<p>HC to send comments on the NRA to Marico for further discussion</p>

	<p>HC questioned whether any further reductions on the RLB could be made. MV stated that the project has applied for the current RLB and that this is what the post-submission work will be undertaken against and the project was unable to commit to RLB change. HC endorsed the earlier comments on understanding the WTG locations relative to RLB.</p>	
6	<p><b>Statement of Common Ground</b></p> <p>JH outlined the 12 NRA defined Impacts as assessed and outline thoughts on themes for the SoCG ahead of the Relevant Representations. Documents will be prepared on behalf of VWPL based on these meetings and the relevant representations. Bilateral meetings will be held with stakeholders to focus on organisation concerns.</p> <p>JH recapped on the 12 defined impacts as assessed in the NRA and tabled the selected impacts and themes where it was envisaged discussion around SoCG might be focussed. The proposed areas for seeking agreement were set out. DB confirmed that other area / points could be included based on stakeholder feedback. VWPL would be seeking individual statements of common ground with each stakeholder.</p> <p>DB went through the process over the next few months and it was agreed that further face to face meetings were going to be needed to progress the discussion on the SoCG.</p> <p>HC asked about when they would be submitted to the examining authority (ExA) and how that would work. DB stated that the aim was to have an initial draft ready for the start of examination as the ExA will likely request the initial draft at the first deadline (approx. 3 weeks following the start of examination, although the timetable is up to the ExA). Further revisions to the SoCG can be expected throughout examination and submitted to the ExA at various deadlines but this will be led by the programme.</p>	<p>Dates for a follow up meeting at the beginning of October to be sent around (DB) – [Post meeting note – meeting arranged 4 October, Spring Place]</p>
7	<b>AOB</b>	

## Minutes of Meeting held on 05-Apr-17

Client: GoBe Consultants  
 Project: 16UK1255 Thanet Extension Offshore Wind Farm (TEOW)  
 Venue: Port of London Authority (PLA), London River House, Gravesend  
 Date of Meeting: 05-Apr-17 1500 – 1630

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Present:	PLA	Cathryn Spain (CS)
	Vattenfall	Capt Mike Vanstone (MV)
	GoBE	Sean Leake (SL)
	Marico Marine	Ed Rogers (ER)
	Marico Marine	Jamie Holmes (JJH)

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Item	Action item / Notes for the record	Action
<b>1</b>	<b>Introduction</b>	
1.1	Introductions of those present and outline meeting agenda	
1.2	JH explained that Marico Marine have been instructed, by GoBe Consultants, to undertake a navigation risk assessment in support of the shipping and navigation work of the EIA being prepared for TEOW.	
1.3	The purpose of this meeting was to undertake early consultation with PLA to confirm themes of concern that have been identified within the following documents along with consultation to date between VF and PLA: <ul style="list-style-type: none"> <li>• Report to Inform Scoping – 18-Nov-16 – Royal Haskoning DHV</li> <li>• Winter 2016 Maritime Traffic Survey – 29-Mar-17</li> <li>• Scoping Opinion – Planning Inspectorate - Feb-17</li> <li>• TOW – Proposed Extension Feasibility Study – 10-Mar-15</li> </ul>	
<b>2</b>	<b>Project Context</b>	
2.1	MV explained progress made by Vattenfall since last meetings with PLA and provided the layout being tabled – which reflects previous discussions.	
<b>3</b>	<b>EIA outline</b>	
3.1	SL explained that project is progressing towards design freeze by end of Apr-17 at which point the EIA will be undertaken against this layout.	

	<p>A Preliminary Environmental Information Report (PEIR) is due to be submitted end of Jul-17.</p> <p>Summer surveys are scheduled to complete by end of Sep-17 and the EIA will be submitted in Dec-17</p>	
<b>4</b>	<b>Shipping and Navigation</b>	
	<p>Marico Marine are undertaking the shipping and navigation studies and will be providing submissions in support of the PEIR and EIA reporting submissions.</p> <p>Data collection (vessel based vessel traffic survey) is being collected for a winter period (completed Mar-17) and summer period (due Jul-17).</p> <p>The concerns raised in the scoping stages by PLA are recognized by VF and therefore, in advance of the full EIA work it has been proposed to undertake an early focused piece of work to better understand these issues, consult fully with the stakeholder and undertake full analysis of the baseline against the proposed scheme layout.</p> <p>The early piece of work primarily addresses the pilotage aspects of the TEOW layout.</p> <p>AIS data has been made available to Marico and will be utilized to analyze existing traffic using the area (traffic and pilot vessel activity).</p>	Marico
<b>5</b>	<b>Consultation</b>	
5.1	<p>CS explained PLA's project area is inside VTS limits of which PLA has VTS responsibility.</p> <p>Main areas of concern, based on layout understanding to date, is on</p> <ul style="list-style-type: none"> <li>• Pilotage &amp; boarding</li> <li>• Through traffic</li> <li>• Anchorages</li> </ul> <p>Concerns are technical although have commercial implications in nature.</p>	
5.2	<p><u>Through traffic</u></p> <p>Circa 70% of inbound traffic enters the estuary to the west of TOW</p> <p>Vessels of &gt; 90m take a pilot (as per general directions).</p> <p>Existing traffic gives an adequate buffer due to the presence of TOW – which will be further</p> <p>CS explained that the two western rows of wind turbines will reduce the available channel width (aligned with Cardinals elbow and NE Goodwin) by circa 50%. CS noted that existing traffic gives an adequate buffer to existing TOW farm and so, when continuing to respect this buffer, there's a risk of 'congestion' and increased density of through traffic. Increased grounding, contact and collision risk.</p> <p>Marico will review existing AIS traffic data to understand usage of the area.</p>	Marico

5.3	<p><u>Pilotage and boarding</u></p> <p>Affected pilot boarding stations likely to be NE Spit. Tongue is also affected although envisaged to a lesser degree and it was also noted that usage of this pilot boarding station is less. Noted that NE Spit was previously relocated with TOW.</p> <p>Concerns relate to reduced searoom for maneuvering vessels during pilot transfer with constrained area between shallow water and T(E)OW noting also the buffer.</p> <p>It is not clear whether pilot boarding stations will require relocation – Marico will investigate this requirement.</p> <p>CS noted concern on moving pilot boarding stations with regards to extra transit distance and time for boardings (noting pilot hours include transit).</p> <p>Marico will review existing AIS traffic data, and PLA data, to understand tracks associated with acts of pilotage.</p> <p>Consultation with Estuary Services Ltd and pilots was also recommended.</p> <p>PLA will provide information, via Polaris, to provide further information on usage of the pilot boarding stations.</p> <p>Simulation could be considered to investigate implications of relocation and potential options (using PLA simulator). There may be wider project benefits to this. Marico to enquire via Richard Flynn.</p>	<p>Marico PLA (via Marico)</p> <p>Marico</p>
5.4	<p><u>Anchorage</u></p> <p>CS noted adjacent anchorages to be considered.</p>	<p>Marico</p>
5.5	<p><u>Other Consultation themes</u></p> <p>CS noted residual concerns to be addressed in due course:</p> <ul style="list-style-type: none"> <li>• VTS services - demonstrating that VTS services can be maintained - noting radar interference potential.</li> <li>• Lighting and buoyage (Aids to Navigation)</li> <li>• SAR considerations</li> <li>• Wider planning and legislative feedback</li> </ul>	
6	<p><b>Actions / Further Work</b></p>	
	<p>Marico Marine will continue with the proposed pilotage study to investigate through traffic, pilot boarding stations and anchorages.</p> <p>Marico marine will liaise with PLA to source Polaris data on pilotage movements and option of undertaking navigation simulation, if required, using the PLA facilities.</p>	

## Minutes of Meeting held on 03-Jul-17

Client: GoBe Consultants  
 Project: 16UK1255 Thanet Extension Offshore Wind Farm (TEOW)  
 Venue: Port of London Authority (PLA), London River House, Gravesend  
 Date of Meeting: 03-Jul-17 1400 – 1530

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Present:	PLA	Cathryn Spain (CS)
	PLA	Tim Corthorn (TC)
	ESL	Ian Lord (IL)
	Vattenfall	Capt Mike Vanstone (MV)
	Marico Marine	Andrew Rawson (AR)
	Marico Marine	Jamie Holmes (JH)

Item	Action item / Notes for the record	Action
<b>1</b>	<b>Introduction</b>	
1.1	Introductions of those present and outline meeting agenda	
1.2	JH outlined scope of Marico Marine providing navigation and shipping studies. JJH introduced context of pilotage study as initially tabled at earlier meeting of 05-Apr-2017.	
1.3	MV provided project overview project and planned submission dates – emphasising the requirement to by Dec-2017	
<b>2</b>	<b>Presentation of Pilotage Study</b>	
2.1	AR gave an overview of the pilotage study, methodology, main findings and conclusions.	
<b>3</b>	<b>ESL Operations</b>	
3.1	IL provided clarification and overview insight of ESL operations including: <ul style="list-style-type: none"> <li>• Working speed of pilot launches is assumed to be 20 knots for planning purposes and provides some contingency. 2x pilot launches are capable of faster service speeds and are generally prioritized to deeper water boarding station taskings;</li> <li>• Number and types of pilot launches currently operated were clarified;</li> <li>• IL noted that the pilot roster is relatively pressured at present.</li> </ul>	
<b>4</b>	<b>Compression of Traffic Flow in area to West of Thanet Windfarm</b>	
4.1	CS and TC raised concerns on potential impact of compression of traffic flow resulting from the reduced available sea room to the west of the windfarm extension (shown at 3.8nm to 1.8nm). Reduced sea room would result in	

	more encounters between transiting vessels which, coupled with pilot boarding activities, requires further understanding.	
4.2	AR described how compression could be modelled and quantified using encounter modelling, providing a before and after comparison of the likelihood of collision.  It was noted that this method has been utilized by PLA HM(U) in the Thames Traffic Model.	
<b>5</b>	<b>Activities at Pilot Boarding Stations</b>	
5.1	JH noted that the 3 months AIS data in the pilotage study identified very minimal usage of Tongue Pilot Station relative to NE Spit. JH asked for clarification from PLA and ESL on the usage of this boarding station and context in relation to the other boarding stations.  IL explained Tongue originated from the formalization of practices that developed following the introduction of Thanet Wind Farm to provide a boarding station for larger vessels typically >300m LOA which were not willing to transit inshore of the wind farm.  Tongue is also used as an alternative to Sunk when Sunk comes offline in adverse weather conditions. Noting that Tongue is, in turn, less sheltered than NE Spit.  ESL vessels using Tongue would have a longer run and the pilotage trip is longer having an impacts on hours of rest, vessel maintenance. It is not typically used.  Discussion was made on the future traffic profile at Tongue and whether this may change although difficult to speculate.	
5.2	NE Goodwin was discussed as a possible deep-water alternative pilot station, albeit is not considered an alternative to NE Spit.  NE Goodwin has more shelter than the Sunk so is infrequently used when boarding conditions in the Sunk are not suitable.	
<b>6</b>	<b>Reduction in sea room for pilot boarding</b>	
6.1	Discussion was held on how the reduction of sea room to the west of the wind farm extension would impact on pilot boarding (and also concurrently with the compression of through vessel traffic – see item 4 of these minutes).  TC explained the reduction was considered significant. AR explained that the remaining width of 1.8nm wasn't unprecedented although clearly each location has its specific characteristics.  IL proposed that discussion with an ESL pilot boat coxswain would help understand this issue further. They would be able to outline how much room is required to board/land pilots safely given the range of conditions experienced in the Thames Estuary. CS also agreed that pilots should also be consulted at an early stage.	
<b>7</b>	<b>Actions / Further Work</b>	
7.1	Discussion was held on how to progress the themes of the pilotage study. The recommendations from the study were summarized as:	

	<ol style="list-style-type: none"> <li>1. Take the proposed existing layout to further assessment (to establish whether the reduction in sea room impacts traffic flow and pilot transfers to acceptable/unacceptable levels.</li> <li>2. Investigate relocation of NE Spit pilot boarding station.</li> <li>3. Investigate design layout options, informed by traffic flow modelling and navigation simulation, in order to mitigate impacts .</li> </ol>	
7.2	<p>JH outlined potential methods to explore recommendation 1.</p> <ul style="list-style-type: none"> <li>• Traffic flow modelling: Undertake computational modelling to quantify encounters in reduced sea room</li> <li>• Pilot boarding assessment through simulation: undertake consultation with ESL pilot coxswain to understand present activities and constraints. Undertake navigation simulation to test the layout against defined scenarios (eg: critical metocean conditions, vessel types)</li> </ul>	
7.3	<p>Pilot boarding assessment through simulation:</p> <p>The use of the PLA bridge navigation simulator was discussed as a means to test different scenarios and arrangements. CS gave an overview of the PLA MARLIN simulator and proposed liaison with the PLA pilot training/resource manager to discuss its use for this project. CS also raised issues with pilot and/or simulator availability during the summer holidays that should be considered.</p> <p>Marico Marine to draft a simulation study outline using pilots and coxswains to test the feasibility of extension scenarios. Pilots and coxswains to be consulted beforehand to develop scenarios.</p>	JH
7.4	<p>CS asked what potential layout modifications were being considered under recommendation 3. MV explained that the layout was not fixed and would be informed by the further assessment work to ensure that any revised layouts, if required, were developed in consultation with PLA.</p>	

#### **Appendix 1: Project programme**

<i>Project design defined for Preliminary Environmental Information (PEI)</i>	End June 2017
<i>Submission of the PEI Report</i>	October 2017
<i>Statutory consultation under Section 42 of the Planning Act 2008</i>	November 2017
<i>Project design review for Development Consent Order (DCO) application</i>	December 2017
<i>DCO application and supporting Environmental Statement submitted</i>	March 2018
<i>Examination phase</i>	July-December 2018
<i>DCO award</i>	June 2019
<i>Final Investment Decision</i>	Q1 2020
<i>Onshore construction starts earliest</i>	Q4 2020
<i>Offshore construction starts earliest</i>	Q1 2021
<i>Fully commissioned earliest</i>	End 2022



## Minutes of Meeting held on 14-Aug-17

Client: GoBe Consultants  
 Project: 16UK1255 Thanet Extension Offshore Wind Farm (TEOW)  
 Venue: Port of London Authority (PLA), London River House, Gravesend  
 Date of Meeting: 14-Aug-17 1000 – 1400

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Present:	PLA	Cerwyn Phillips (CP)
	PLA	Richard Flynn (RF)
	ESL	Ian Lord (IL)
	ESL	Richard Jackson (RJ)
	ESL	Dave Ninnim (DNM)
	Marico Marine	Jamie Holmes (JH)

Item	Action item / Notes for the record	
<b>1</b>	<b>Introduction</b>	
	Introductions of those present, project roles and outline of meeting agenda	
<b>2</b>	<b>Project overview: Thanet extension Offshore Windfarm (TEOW)</b>	
	<p>JJH provided overview of Marico Marine role delivering Shipping &amp; Navigation Chapter of EIA. Key dates were outlined as understood.</p> <p>ESL noted that this was the first contact since the consultation undertaken with them by Vattenfall in early 2017 during the scoping study early discussions.</p> <p>ESL explained they are unclear on the regulatory and approval process and the opportunities for them to provide input as stakeholders at the relevant design development opportunities.</p> <p>Action: GoBe/Vattenfall to provide ESL &amp; PLA with project overview</p>	
<b>3</b>	<b>Pilotage Study - Presentation of work to date / confirmation of conclusions</b>	
	<p>JJH outlined that Pilotage Study was commissioned separate to the main Navigation Risk Assessment that will be undertaken in Q3/Q4 2017 and input to the Shipping &amp; Navigation Chapter of the EIA. The objective of the Pilotage Study was defined in the meeting between PLA and Marico Marine on 05-Apr-17 (see separate minutes) to 'more comprehensively understand the use of the pilot stations, including the frequency and types of vessel using it'.</p> <p>3 Months of AIS data was provided to Marico Marine by Vattenfall (Nov-16 – Feb-17) on which the pilotage study was undertaken.</p>	

	<p>The outline Pilotage Study report was issued to PLA in May for review/distribution and presented to PLA and ESL on 03-Jul-17 (see separate minutes) at which minor comments on report itself were received and the themes of concern were discussed. Agreed actions to be progressed were:</p> <ol style="list-style-type: none"> <li>1. Further assessment to establish whether reduction in sea room impacts vessel traffic flow and pilot transfers to acceptable/unacceptable levels</li> <li>2. Investigate relocation of NE Spit pilot boarding station</li> <li>3. Investigate design layout options in order to mitigate impacts</li> </ol> <p>Two methods were identified to investigate Action 1:</p> <ul style="list-style-type: none"> <li>• Traffic flow modelling: Undertake computational modelling to quantify encounters in reduced sea room and collision risk</li> <li>• Pilot boarding assessment through bridge simulation to test layout against defined scenarios.</li> </ul> <p>JJH explained the objective of this meeting was to map out the bridge simulation requirements, noting that traffic flow modelling was being considered under the NRA.</p>	
<b>4</b>	<b>Pilotage – ESL/PLA input/discussion</b>	
<b>4.1</b>	<p>ESL outlined they have concerns with the proposed layout as it relates to navigation safety, operations and commercial implications.</p> <p>ESL provided feedback on the report at this point. Comments include:</p> <ul style="list-style-type: none"> <li>• The report presents a complex overall operation.</li> <li>• Dredgers – RJ explained that significant numbers of dredgers do not have PEC's. Around 59 acts of pilotage involving dredgers were undertaken during the period.</li> <li>• Vessel traffic gates (as per p8 of report) were clarified. Typographical errors inc. p10 Fig 9/para 2 east/west, p18 Fig 18 MV Astrid Shulte</li> <li>• ESL confirmed their 6 vessels have different speed characteristics (2 have maximum speeds of 25kts and 4 have maximum speeds of 22 kts). Planning operational speeds are 20kts as confirmed in pilotage report.</li> <li>• Time taken for pilot transfer is variable (as noted in report) for various reasons including weather, tripping pilots etc... ESL agreed to provide annotative log based evidence for the transfer acts reported to further understand transfer time.</li> <li>• NE Spit affords excellent weather protection with low numbers of restrictions and is rarely off- station. ESL agreed to provide annotative log based evidence of instances of these periods.</li> <li>• Weather (wind, waves and visibility) and associated considerations should be considered in the assessment – noting also that operations are impacted (seek to service multiple trips in adverse weather).</li> <li>• Concerns on the data utilized as the period of data used was relatively benign winter. JJH noted the EIA will be supplemented by a vessel traffic survey (winter and summer) including radar and visual (i.e.: non AIS vessels).</li> </ul>	

	<ul style="list-style-type: none"> <li>Noted the inter-dependency of all traffic (AIS and otherwise) on the pilotage. JJH noted this observation and explained that will be reviewed in the traffic modelling in combination with the pilot simulation. Non AIS traffic (and varying seasonality) will be analysed in the NRA and on receipt of the vessel traffic survey.</li> <li>ESL do not accept the relevance and basis of comparison with other pilot boarding areas in other ports.</li> </ul> <p>IL emphasized importance of operational contingency across all the pilot boarding station and noted that NE Spit provides this (for vessels able to navigate west of the existing wind farm) when the other pilot stations are restricted or off station.</p> <p>ESL utilize a 'planning diamond' tool to inform the ship direction to create lee appropriate to ship for strength and direction of waves and wind. Noted that this is always subject to change based on the individual nature of any act and the judgement of the pilot boat coxswain.</p> <p>Comments on adverse weather:</p> <ul style="list-style-type: none"> <li>Wind: NE wind for prolonged period</li> <li>Current/Waves: Spring tide and current run direction will increase sea state</li> <li>ESL also undertake considerable attendance work as part of their wider operations – JJH noted this as an operational consideration and beyond scope of navigation risk assessment.</li> </ul>	
<b>5</b>	<b>Simulator overview &amp; capability</b>	
	RF introduced simulator and all attendees visited the bridge simulator and witnessed a vessel transiting to the north of the study area.	
<b>6</b>	<b>Simulation Session Design</b>	
	<p>Discussion was held about structuring the session to ensure that an objective assessment can be undertaken to inform the understanding of sea room required for pilot transfer. Given the available resource and time available - there will necessarily be some assumptions and focus on specific cases/scenarios.</p> <p>JJH to prepare an inception note for circulation and include a 'run sheet' to include the below items.</p> <p>A setup day will be required involving all parties.</p>	
6.1	<p>Attendees:</p> <ul style="list-style-type: none"> <li>ESL wish to provide 1x or 2x coxswains</li> <li>PLA to provide 2x pilots</li> <li>Marico to provide session lead</li> </ul>	
6.2	<p>Study Area:</p> <ul style="list-style-type: none"> <li>Study area to be utilized will be existing area as represented in PLA simulator. No extension to the simulator area coverage required given the study area focus (note PLA/Marico had reviewed this prior to meeting).</li> </ul>	

	<ul style="list-style-type: none"> <li>• PLA to confirm visual representation of existing wind farm as this was not observed when visiting the bridge simulator.</li> <li>• TEOW (extension) to be represented by placement of buoys or ships and 'turned on/off' as required – noting it may be possible to utilize turbines in the visual scene.</li> </ul>	
6.3	<p>Priority Vessel Types</p> <ul style="list-style-type: none"> <li>• JJH noted the requirement to select and focus on representative ships and then identify similar types from PLA simulator library. This will be a balance of regular vessels against those which are less maneuverable (likely to be driven by wind area/draft and maneuverability). These were reviewed together and likely to be selected from below - tbc:</li> <li>• 140m LOA container ship</li> <li>• 200m LOA 10m draft container ship</li> <li>• 130m LOA x 7.5m draft dredger</li> <li>• 240m LOA 10m draft ro-ro / car carrier</li> <li>• Tug and tows are noted</li> </ul> <p>PLA to review above list against availability of vessels in simulator database.</p>	
6.4	<p>Vessel routing should consider:</p> <ul style="list-style-type: none"> <li>• Whether trip is inbound/outbound</li> <li>• Note starting/finish location of vessel (and therefore general approach and departure direction) should consider to/from below 4 areas:</li> </ul> <ol style="list-style-type: none"> <li>1. Margate road anchorage</li> <li>2. Princes Channel</li> <li>3. South</li> <li>4. North-East</li> </ol>	
6.5	<p>Priority Metocean condition (wind, wave, current, visibility) to be selected from the following based on threshold of acceptability:</p> <ul style="list-style-type: none"> <li>• Wind directions – consider from 8 compass points</li> <li>• Wind strength – consider in 10kt increments</li> <li>• Swell / Wave – consider in 8 compass points</li> <li>• Visibility – fog and day/night</li> </ul>	
6.6	<p>Representation of pilot transfer act</p> <ul style="list-style-type: none"> <li>• Ladder side should be determined</li> <li>• Heading of ship during transfer (as mandated by ESL) should be determined</li> <li>• Space required for vessel to swing onto transfer heading should be noted</li> </ul>	

	<ul style="list-style-type: none"> <li>Duration of typical transfer should be assumed (ranging from 2 – 6 mins and occasionally 8 mins) and at constant speed</li> </ul>	
6.7	<p>Contingency / Dealing with Change</p> <p>ESL queried how ‘background traffic’ and interaction with act of pilotage will be represented. ESL noted that runs will often be paused or re-started for issues such as:</p> <ul style="list-style-type: none"> <li>Ladder wrong side or rigged incorrectly</li> <li>Ship has not manoeuvred correctly and/or lee not adequate</li> <li>Other vessel traffic affects run</li> </ul> <p>JJH explained that focus on background traffic as relates to general capacity and collision will be assessed separately although recognized that representative/occasional passing traffic may be included.</p>	
6.7	<p>Agreed assessment criteria</p> <p>Runs will be judged on whether successful transfer (or time available for transfer on heading) can be undertaken without breaching agreed limits to West and East:</p> <ul style="list-style-type: none"> <li>Proximity on East to wind farm (note buffer)</li> <li>Proximity to West – identify depth contour</li> </ul>	
<b>7</b>	<b>Schedule – Simulator availability</b>	
	<p>RF explained significant demands on pilot resource and simulator availability and dates may be subject to change:</p> <p>Post meeting dates for setup and workshop were proposed as below:</p> <ul style="list-style-type: none"> <li>Setup day: Fri-15-Sep</li> <li>Simulation workshop: 20-21-Sep</li> </ul>	
<b>8</b>	<p><b>Actions / Further Work/ AOB</b></p> <p>Actions as per above minutes</p>	

## Jamie Holmes

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**From:** Helen Croxson <Helen.Croxson@mcga.gov.uk>  
**Sent:** 31 January 2018 12:17  
**To:** Andrew Rawson  
**Cc:** David Turner; Jamie Holmes; Paul Fuller  
**Subject:** RE: Update on progress with PEIR response

Andrew,

Thank you for your reply.

Whilst we are happy to meet with developers and their contractors as part of the consenting process as the projects progress, we don't have the resources to send multiple attendees to meetings. If you wish for David's input specifically on a risk assessment, I'll leave it for you to contact him direct to discuss further.

I would be happy to meet with you, along with Trinity House on this occasion, to discuss the progress made with our response to the PEIR. Please let me know how you wish to proceed.

Kind regards

Helen



**Helen Croxson, Offshore Renewables Advisor**  
Navigation Safety Branch, Bay 2/25  
Maritime & Coastguard Agency  
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Tel: 0203 8172426  
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Email: [Helen.Croxson@mcga.gov.uk](mailto:Helen.Croxson@mcga.gov.uk)

Please note I currently work Tuesdays, Wednesdays and Thursdays.

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**From:** Andrew Rawson [mailto:andrew.rawson@marico.co.uk]  
**Sent:** 31 January 2018 11:05  
**To:** Helen Croxson <Helen.Croxson@mcga.gov.uk>  
**Cc:** David Turner <David.Turner@mcga.gov.uk>; Jamie Holmes <jamie.holmes@marico.co.uk>; Paul Fuller <paul.fuller@marico.co.uk>  
**Subject:** RE: Update on progress with PEIR response

Hi Helen

Many thanks for sending these through. I think that it would be useful to have David in attendance as well if at all possible. I would envisage running through our draft risk assessment and discussing the scoring of the top identified hazards and the MCA's view on the tolerability of the resulting risk scores, so I would welcome his experience. Does this narrow down the dates of availability?

I agree that it would be valuable for Trinity House to either attend or dial in, and I'm happy to send out a meeting request to mark the agreed date.

Kind regards

Andrew

Andrew Rawson  
Senior Consultant

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**From:** Helen Croxson [<mailto:Helen.Croxson@mcga.gov.uk>]  
**Sent:** 30 January 2018 14:46  
**To:** Andrew Rawson <[andrew.rawson@marico.co.uk](mailto:andrew.rawson@marico.co.uk)>  
**Cc:** Stephen Vanstone <[Stephen.Vanstone@thls.org](mailto:Stephen.Vanstone@thls.org)>; Trevor Harris <[Trevor.Harris@thls.org](mailto:Trevor.Harris@thls.org)>; Peter Lowson <[Peter.Lowson@mcga.gov.uk](mailto:Peter.Lowson@mcga.gov.uk)>; David Turner <[David.Turner@mcga.gov.uk](mailto:David.Turner@mcga.gov.uk)>  
**Subject:** Re: Update on progress with PEIR response

Andrew,

Thank you for your telephone call this morning regarding a follow up meeting to bring us up to speed on progress with the Thanet Extension project in light of our PEIR response.

I'm not proposing to bring David Turner along again as David's input was made clear at the last meeting, but I would suggest Trinity House are included at the same time if they have not been consulted on the updates already. I will leave it to you to arrange, and would be happy to hold the meeting here at Spring Place and provide dial in options for Trinity House if required.

The dates I would be able to do in the next few weeks are as follows: Tues 6<sup>th</sup> Feb, Thurs 8<sup>th</sup>, Thurs 15<sup>th</sup>, Tues 20<sup>th</sup> Feb.

Kind regards

Helen



**Helen Croxson, Offshore Renewables Advisor**  
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