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MMO Reference: DCO/2016/00003
Planning Inspectorate Reference:
EN010084
Identification Number: 20012636

03 May 2019

To Whom It May Concern,

Planning Act 2008, Vattenfall Wind Power Limited, Proposed Thanet Extension Offshore Wind Farm

The MMO is an interested party for the examination of Development Consent Order (DCO) applications for Nationally Significant Infrastructure Projects (NSIPs) in the marine area. Should consent be granted for the project, the MMO will be responsible for monitoring, compliance and enforcement of Deemed Marine Licence (DML) conditions.

On 30 July 2018, the Marine Management Organisation (MMO) received notice under section 56 of the Planning Act 2008 (the "PA 2008") that the Planning Inspectorate ("PINS") had accepted an application made by Vattenfall Wind Power Limited (the "Applicant") for a development consent order (the "DCO Application") (MMO ref: DCO/2016/00003; PINS ref: EN010084), for the construction, operation and maintenance of the proposed Thanet Extension Offshore Wind Farm (TEOWF).

This document forms the MMO's deadline 5A submission, comprising:

- comments on the draft Development Consent Order
- comments regarding additional modelling on construction noise impacts

This written representation is submitted without prejudice to any future representation the MMO may make about the DCO Application throughout the examination process. This representation is also submitted without prejudice to any decision the MMO may make on any associated application for consent, permission, approval or any other type of authorisation submitted to the MMO either for the works in the marine area or for any other authorisation relevant to the proposed development.

Yours faithfully

[Redacted signature]



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1. Comments on the Applicant's Draft Development Consent Order (dDCO) Revision E (issued 29 April 2019)

Please note, where applicable the matters below should be considered in respect to both deemed marine licences (DML) presented at schedules 11 and 12.

1.1.1 **Arbitration, article 36** - the MMO maintains that the current dDCO drafting does not make it explicit that the arbitration provisions do not apply to approvals under the DMLs and has submitted extensive commentary at deadlines 3 ([REP3-078](#)), 4 ([REP4-031](#)) and 5 ([REP5-062](#)) respectively.

1.1.2 The MMO is currently reviewing the applicant's response at deadline 5 regarding their final position on the appropriateness of the provision, and will provide comment at deadline 6.

1.1.3 **Interpretation of commence** – The provisions for pre-commencement activities (i.e. seabed preparation) are at present not sufficient and therefore, as currently drafted, the MMO considers that seabed preparation activities should be included in the definition of commence. The definition of pre-commencement activities and how they are secured on the DML remains under discussion through the SoCG. The MMO has engaged directly with the applicant to highlight those conditions currently only linked to the definition of commence which also need to apply to pre-commencement activities. The MMO notes this remained unchanged in the current revision of the dDCO and awaits clarification on how this will be reflected on the DML.

1.2 Maximum parameters in the DMLs

1.2.1 The following parameters should be included on the DMLs to ensure the maximum impacts remain within those assessed and approved in the Environmental Statement (ES):

1.2.2 **Footprint for disposal activities** - The MMO welcomes the inclusion of the disposal volumes, respective activities and disposal sites on the DMLs however requests that the maximum footprint (area) is also included. The footprint is an important metric in assessing the overall impact of an activity in combination with the volume.

1.2.3 **Maximum permitted cable protection footprint**

1.2.4 **Maximum permitted scour protection footprint**

1.2.5 **Maximum number of cable crossings**

1.2.6 **Hammer Energy** – the MMO requests the maximum hammer energy be stated on the DMLs. The maximum hammer energy is an important metric in ensuring that impulsive noise is within the maximum that was assessed in the ES (and potentially the HRA). If the proposed hammer energy is to increase, the implication is that underwater noise impacts will increase, and further modelling would be required to demonstrate the scale of this impact. Such a change would most appropriately be dealt with through a variation to the DML.

1.2.7 The MMO notes the applicant has previously proposed to specify the Environmental Statement as a certified document, rather than include the maximum parameters on the face of the DMLs. However, as outlined at deadline 4, once granted, the marine licence essentially becomes a standalone document from the rest of the DCO and falls back to the MMO to regulate and amend in accordance with part 4 of the Maine and Coastal Access Act (2009). In Revision E (RevE) of the DCO, there does not currently appear to be any conditions limiting the works to the parameters defined in the certified ES (or any documents associated with the ES). The MMO would need such a condition in order to limit the maximum parameters that are permitted under the DML to those set out in the ES. However, this could be more restrictive for the applicant if they were to seek agreement from the MMO to move outside of the activities considered in the ES should they want to.

1.2.8 The MMO therefore believes it would be more appropriate to transfer the maximum parameters defined in the ES onto the DML (as limits on the authorisation imposed through the licence). These parameters can then be amended, if required through a variation request (subject to the MMO being satisfied the change in parameters does not result in any materially new or materially different effects from what was assessed in the ES).

1.2.9 **Notifications and inspections** – condition 6(10) at schedule 11 stipulates that *“Copies of all notices must be provided to the MMO within 5 days.”* The same condition in schedule 12 should be revised to also include this timeframe.

1.2.10 **Timescales for approval of pre-construction plans and documentation** – at deadline 4 the MMO commented that it was in consultation regarding a case-specific approach regarding approval periods for pre-construction plans and documentation. The MMO has considered such an approach and reflected on other offshore wind farms (OWF) currently undergoing examination. To maintain consistency across licensing the MMO suggests condition 15 is amended to allow a six month approval period, except where otherwise agreed in writing by the MMO.

1.2.11 The MMO and its advisors need an appropriate timeframe to analyse technical information, consult and make informed judgements and decisions. In most circumstances a 4 month pre-construction submission date is unrealistic and potentially counterproductive. The MMO always endeavour to remain as flexible as possible in relation to developer requirements, and a formalising of timescales could lead to MMO resources reducing this flexibility to prioritise the suggested statutory timescale obligations. It should also be noted that developers can occasionally submit discharges late due to unforeseen circumstances, and while the MMO should officially seek to introduce licence enforcement measures at this point, the MMO would prefer to maintain a flexible approach and work with the developer to reach a timely resolution. However, again the introduction of formal timescales for decisions may require the MMO to revert to enforcement measures for late or staged submissions to ensure that it, and the applicant, can avoid missing their statutory schedule milestones.

1.2.12 An approximate overview of the decision making process for discharged documents is outlined as follows:

1. 4 weeks to acknowledge and review the document within the MMO

2. External consultation of this documentation could take up to 6 weeks
3. Once consultation is closed the MMO has to review the response and possibly ask for additional information from the applicant. At this stage the MMO and the applicant would be in discussion to agree on an approach to the responses. This could be for up to 4 weeks.
4. The MMO could then request further information from the applicant, which dependent on the level of detail, could represent a further significant time period of for example 4 further weeks
5. Once this is returned by the applicant, the MMO would begin the consultation process again.

1.2.13 It is noted from the above that, even if discharge documentation were to follow the current timescales, and no further communication was required from the applicant (which is highly unlikely) the current turnaround equates to 18 weeks, which is longer than the 16 weeks suggested by the applicant. It should also be noted that the above timescale applies to only one document, when in reality, the number of in-depth discharge requirements could far exceed 30 in total

1.2.14 The request for 6 months also reflects the increasing complexity of existing OWF projects due to HRA, case law, an increasing volume of documents and a rise in in-combination issues associated with other projects. Of particular note is the anticipated growth in the UK offshore wind sector – noting an additional 8 proposed extension projects and the Crown Estate’s round 4 leasing underway.

1.2.15 **Site Integrity Plan** - current wording in the dDCO suggests the Site Integrity Plan (SIP) is to be approved prior to ‘operation’ of the scheme. The MMO queries whether this is an error and that the applicant intended the wording to schedule 11, part 4 condition 13(k) and schedule 12 part 4 condition 11(l) to require the SIP to be submitted prior to commencement of the licensed activities.

1.2.16 The condition should also be amended to recognise that the timescales on the DMLs are not currently consistent with the draft SIP which proposes two 4-month review stages.

1.2.17 **Certified documents, schedule 13** - The MMO notes the applicant intends to certify a number of documents in order that they are “*complied with as certified*”. The MMO advises that current drafting does not provide a mechanism to undertake revisions for those documents where this may be required such as in the case of the Biogenic Reef Mitigation Plan which is not finalised and the Fisheries Liaison and Co-existence Plan which is considered a ‘live’ document subject to ongoing changes throughout the project.

1.2.18 Furthermore please note the Fisheries Liaison and Co-existence Plan is listed incorrectly at the ‘Fishing Liaison and Co-existence Plan’ in schedule 13.

1.2.19 **Cessation of piling – noise levels** - The MMO submitted its response at deadline 3 providing further detail on its powers to stop works, and the limitations in regards to the current wording of the condition at schedule 12, condition 16(3) and schedule 11, condition 18(3). The MMO seeks to ensure that it is notified as soon as possible of any issues that indicate noise levels may be greater than predicted in order to agree any potential additional monitoring or mitigation measures in a timely manner.

As such, the MMO supports the amended condition wording proposed by Natural England and outlined below. Similar recommendations were made for the Norfolk Vanguard and Hornsea 3 OWF dDCO representations. Indeed, the ExA's schedule of changes to the dDCO for Hornsea 3 issued on 26 February 2019 includes the amended condition wording as follows:

1.2.20 *“(4) The results of the initial noise measurements monitored in accordance with condition 18(2)(a) must be provided to the MMO within six weeks of the installation of the first four piled foundations of each piled foundation type. The assessment of this report by the MMO will determine whether any further noise monitoring is required. **If, in the opinion of the MMO in consultation with Natural England, the assessment shows significantly different impact to those assessed in the environmental statement or failures in mitigation, all piling activity must cease until an update to the MMMP and further monitoring requirements have been agreed.**”*

1.2.1 With the amendment being justified *“In the interests of protecting the integrity of the Site of Community Interest.”*

1.2.2 This is a noted area of disagreement on the SoCG with the applicant.

1.3 Pre-construction monitoring and surveys in Goodwin Sands - The MMO notes the revision made to schedule 12, condition 15 regarding monitoring provisions for Goodwin Sands pMCZ on the DML, however suggests the following amendments:

1.3.1 At 15(2)(b)(i) – the MMO questions whether reference to “sub-paragraph (2)(c)” in this section is correct given this refers to a different set of surveys related to saltmarsh.

1.3.2 At 15(2)(b)(i) and (ii) – the current wording only provides for surveys to be undertaken post-construction – i.e. after cable protection has been installed. This wording needs to be amended to make it clear that surveys will also be undertaken pre-construction – i.e. where it is anticipated cable protection will be installed and prior to such works being carried out.

1.3.3 At 15(2)(b)(i) – the current wording should also be amended to provide for surveys taken out pre-construction and post-construction for sandwave clearance and post-construction, in order to be able to fully assess the potential impact if sandwave clearance were undertaken in the pMCZ.

2. Comments regarding additional modelling on construction noise impact

2.1.1 At deadline 4c the applicant provided additional modelling to address prior concerns raised in respect to the construction noise effects on herring and sole spawning grounds.

2.2 Herring spawning grounds

2.2.1 The modelling shows that significantly larger impact ranges are predicted, based on a stationary receptor. The modelling suggests that the predicted impact ranges for mortality, recoverable injury and Temporary Threshold Shift (TTS) (207dB, 210 dB and 186 dB SELcum) will overlap with areas of higher importance for herring spawning (East Channel (Downs) stock). The 186 dB SELcum metric has the largest overlap with the spawning grounds.

2.2.2 The MMO advises that potential effects on fish from anthropogenic noise can also include behavioural changes. There is considerable uncertainty in assessing the risk of behavioural responses, since they are highly dependent on many factors, including behavioural context. Behavioural changes can have a significant impact to a population if sound causes fish to move away from foraging or breeding grounds, cease reproductive activities, or change their migratory behaviour. Thus, there are uncertainties as to if, and how, sound may affect the behaviour of the East Channel and Thames Estuary herring. Nonetheless, behavioural responses would be expected to occur over larger ranges, at sound levels lower than the TTS threshold.

2.2.3 The MMO cannot confidently say that the additional modelling results demonstrates the likely impact on spawning stock of herring is within acceptable limits. There is no evidence to support the conclusion that behavioural impacts are unlikely to significantly impact on spawning activity. It is not known if, and how, anthropogenic noise from the piling operations may affect the behaviour of the East Channel and Thames Estuary herring during this critical life stage. The applicant was previously asked to model the received levels of single pulse Sound Exposure Level at the spawning grounds, however, this information has not been provided.

2.2.4 In relation to behavioural responses, the applicant suggests that *“herring are considered to be potentially less responsive to noise when involved in either feeding or actively spawning compared to when generally swimming, which is plausible.... Therefore, it is considered that behavioural impacts are unlikely to significantly impact on spawning activity...”* At the same time, when considering injury/TTS, the applicant is of the opinion that a fleeing receptor is nevertheless more robust and a ‘suitably precautionary’ approach, which, the MMO would highlight that in the case of spawning herring, is a concern if they ‘flee’ from spawning grounds.

2.2.5 The updated modelling demonstrates overlap of the East Channel spawning grounds with the SELcum noise contours (for injury and TTS). Whilst the MMO acknowledges that the IHLS data suggests that the primary spawning is further south, spawning grounds can vary / shift year on year. As a precautionary approach, the MMO recommend that pile driving operations are not permitted during the herring spawning period, to minimise the risk of impact to spawning herring - February to April for the Thames sub-stock, and from the end of November to January for the Downs stock (located to the south in the English Channel).

2.2.6 This recommendation further recognises that the Thanet OWF was similarly subject to a temporal piling restriction as part of the licence conditions. The evidence provided suggests there is no reason that Thanet Extension should not be subject to the same condition.

2.2.7 The use of bubble curtains to reduce noise propagation when piling could reduce the impact of underwater noise and vibration on fish (in accordance with the standards applied in German waters; Umweltbundesamt, 2011), this may lower the risk of impact sufficiently for piling to be unhindered during all or part of all of the spawning seasons for herring, or could be used in conjunction with spatial piling restrictions

Cumulative sound exposure level (SEL_{cum}). This method could reduce potential impacts to those species which have spawning and nursery grounds in the TEOWF area, and also to species which transit through the TEOWF area for their seasonal migratory movements. If the applicant were to commit to such measures the MMO would expect to see this reflected on the DML and revised accordingly.

2.3 Sole spawning grounds

2.3.1 While the applicant has considered the potential impacts of the updated modelling in relation to herring, the potential overlap of modelled noise exposure criteria for fish hearing group 1 (sole) upon sole spawning grounds is not presented, rather the potential impacted area (total calculated habitat) is considered instead. While this is useful, the potential overlap (modelled noise contours) should be overlaid onto identified sole spawning grounds as previously requested. Providing a figure with the TTS threshold (modelled based on a stationary receptor) would show the potential impact range for injury to sole.

2.3.2 As such, at this stage further information is needed to determine the likely impacts on spawning sole are within acceptable limits.