



Hornsea Project Three Offshore Wind Farm

Statement of Common Ground between Hornsea Project Three (UK) Ltd and Whale and Dolphin Conservation

Date: September 2018

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Ørsted

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2018.

Revision History

Version	Date	Author	Context
1.0	August 2018	Ørsted	1 st draft for discussion
1.1	14 th August 2018	Ørsted	2 nd draft for review
1.2	18 th September 2018	Ørsted	3 rd draft for review
FINAL	24 th September 2018	Ørsted	Final for signing

Signatories

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Table of Contents

1. Introduction	5
1.1 Overview	5
1.2 Approach to SoCG	5
1.3 The Development.....	5
2. Consultation	7
2.1 Application Elements of Relevance to WDC	7
2.2 Consultation Summary	7
3. Agreements Log	8

Acronyms

Acronym	Description
CfD	Contracts for Difference
DCO	Development Consent Order
EIA	Environmental Impact Assessment
Ex.A	Examining Authority
HVAC	High Voltage Alternating Current
HVDC	High Voltage Directional Current
MMMP	Marine Mammal Mitigation Protocol
PEIR	Preliminary Environmental Information Report
PTS	Permanent Threshold Shift
RIAA	Report to Inform Appropriate Assessment
TTS	Temporary Threshold Shift
cSAC	Candidate Special Area of Conservation
SCI	Site of Community Importance
SNCB	Statutory Nature Conservation Body
SoCG	Statement of Common Ground
WDC	Whale & Dolphin Conservation

1. Introduction

1.1 Overview

1.1.1.1 This Statement of Common Ground (SoCG) has been prepared by Ørsted Hornsea Project Three (UK) Ltd ('the Applicant') and Whale and Dolphin Conservation (WDC), together 'the parties', as a means of clearly stating the areas of agreement, and any areas of disagreement, between the two parties in relation to the proposed Development Consent Order (DCO) application for the Hornsea Project Three offshore wind farm ('the Project'). This SoCG does not deal with or extend to any development other than the Project.

1.2 Approach to SoCG

1.2.1.1 This SoCG has been developed during the pre-examination phase of the Project based on the Relevant Representation submitted by WDC. The structure of this SoCG is as follows:

- Section 1: Introduction;
- Section 2: Consultation; and
- Section 3: Agreements Log.

1.2.1.2 It is the intention that this document will help give the Examining Authority (Ex.A) an early sight of the level of common ground between both parties from the outset of the examination process.

1.3 The Development

1.3.1.1 Hornsea Three is a proposed offshore wind farm located in the southern North Sea, with a total generating capacity of up to 2,400 MW and will include all associated offshore (including up to 300 turbines) and onshore infrastructure.

1.3.1.2 The key components of Hornsea Three include:

- Turbines and associated foundations;
- Turbine foundations;
- Array cables;

- Offshore substation(s), and platform(s) and associated foundations;
- Offshore accommodation platform/s and associated foundations;
- Offshore export cable/s;
- Offshore and or Onshore HVAC booster station/s (AC transmission option only);
- Onshore cables; and
- Onshore HVDC converter/HVAC substation.

1.3.1.3 The Hornsea Three array area (i.e. the area in which the turbines are located) is approximately 696 km², and is located approximately 121 km northeast off the Norfolk coast and 160 km east of the Yorkshire coast.

1.3.1.4 The Hornsea Three offshore cable corridor extends from the Norfolk coast, offshore in a north-easterly direction to the western and southern boundary of the Hornsea Three array area. The Hornsea Three offshore cable corridor is approximately 163 km in length.

1.3.1.5 From the Norfolk coast, underground onshore cables will connect the offshore wind farm to an onshore HVDC converter/HVAC substation, which will in turn, connect to an existing National Grid substation. Hornsea Three will connect to the Norwich Main National Grid substation, located to the south of Norwich. The onshore cable corridor is 55 km in length at its fullest extent.

2. Consultation

2.1 Application Elements of Relevance to WDC

2.1.1.1 WDC is the leading charity dedicated to the protection of whales and dolphins, accordingly those elements of the Project’s application that are of relevance comprise the Marine Mammal chapter of the ES (Doc Ref; 6.2.4), the Report to Inform Appropriate Assessment (RIAA) (Doc Ref; 5.2) and the deemed Marine Licences (dMLs) of the draft Development Consent Order (DCO).

2.1.1.2 With specific regard to Marine Mammals, WDC’s interest relates solely to cetaceans (whales and dolphins) and not pinnipeds (seals), and this is reflected within this SoCG.

2.2 Consultation Summary

2.2.1.1 Table 2.1 sets out the consultation undertaken between the parties to date.

Table 2.1: Consultation with WDC

Date	Detail
October 2016	Consultation on the Scoping
April 2017	Meeting to discuss marine mammal EIA progress and approach to assessment
September 2017	Consultation on the PEIR (Section 42)
April 2018	Meeting to discuss the final Application material, explain changes since PEIR and how WDC comments had been addressed.
14 th August 2018	Meeting to discuss 1 st draft of the SoCG
18 th September 2018	Meeting to discuss 2 nd draft of the SoCG

3. Agreements Log

- 3.1.1.1 The following section of this SoCG identifies the level of agreement between the parties for each relevant point raised by WDC within their Relevant Representation.
- 3.1.1.2 Table 3.1 identifies the status of discussions relating to this topic area between the parties.

Table 3.1: Marine Mammal Agreement Log

WDC Recommendations	Hornsea Project Three Position	Further discussion notes	Final Position
<p>Pile driving is not used at all during construction</p>	<p>The Applicant notes that this is a generic position adopted by WDC and not unique to HOW03.</p> <p>The Applicant is not able to make this commitment as the Project has to retain proven installation methodologies to remain financially viable. Furthermore, based on the outcome of the EIA and HRA it is not considered that such measures are necessitated.</p>	<p>WDC understands the Applicant's position, maintains its own, and emphasises that it considers mitigation through the MMMP will be key to managing residual risk if piled solutions are retained in the envelope. Additionally WDC has concerns regarding the EIA and HRA (as detailed within the Written Representation) for therefore WDC do not agree with the conclusion that these measures are not required.</p> <p>The Applicant confirms its commitment to a robust MMMP and the conditions within the dMLs relating to the potential for mitigation with regard to the SNS SCI.</p>	<p>Not agreed - Both parties positions are final on this matter.</p>

WDC Recommendations	Hornsea Project Three Position	Further discussion notes	Final Position
<p>Strict limits be placed on noise levels during construction, including cumulative noise</p>	<p>The Applicant notes that this is a generic position adopted by WDC and not unique to HOW03.</p> <p>The Applicant does not agree that it is necessary for limits to be imposed based on the outcome of the EIA and HRA. The Applicant further notes that:</p> <ul style="list-style-type: none"> a) As the regulatory body, it is for the MMO to determine whether there needs to be noise limits applied to licenced activity within UK waters. At present no such regulatory controls exist. b) The Applicant has made a number of commitments to ensure noise levels are controlled through a soft start procedure at the onset of piling (see Schedule 11, Part 2, Condition 11 (1)(g) of the Generation Assets dML and Schedule 11, Part 2, Condition 12 (1)(g) of the Transmission Assets dML. Furthermore, the Applicant has committed to additional noise reduction measures if determined necessary (determined prior to construction based on a understanding of other projects that may be coming forward at the same time as HOW03), see Schedule 11, Part 2, Conditions 11 (4, 5 and 6) of the Generation Assets dML and Schedule 12, Part 2, Conditions 12 (4, 5 and 6) of the Transmission Assets dML. 	<p>As noted above, WDC has concerns regarding the EIA and HRA for therefore WDC do not agree with the conclusions, and recommend additional measures are used to reduce noise levels during construction.</p> <p>WDC recognise that it is the guidance / regulatory regime that is the control mechanism for this issue and it is that which they have concern with. WDC have these concerns as the guidelines do not include the latest and increasing body scientific data of the impacts of noise on marine mammals¹, and therefore are in need of updating. WDC recommend the Applicant commits to using proven mitigation methods.</p> <p>The Applicant confirms that all mitigation applied through the MMMP will be established and that the efficacy of such measures will need to be demonstrated (in the context of the PTS effects predicted by the Project) as part of the approval process of the MMMP.</p>	<p>Not agreed - Both parties positions are final on this matter.</p>

¹ Wright, A.J., Cosentino, A.M., 2015. JNCC guidelines for minimising the risk of injury and disturbance to marine mammals from seismic surveys: We can do better. Mar. Pollut. Bull. 100, 231–239. <https://doi.org/10.1016/j.marpolbul.2015.08.045>

Faulkner, R.C., Farcas, A., Merchant, N.D., 2018. Guiding principles for assessing the impact of underwater noise. J. Appl. Ecol. <https://doi.org/10.1111/1365-2664.13161>

WDC Recommendations	Hornsea Project Three Position	Further discussion notes	Final Position
<p>That proven mitigation methods are in place around the source to mitigate the impacts of radiated noise levels</p>	<p>The Applicant has made a number of commitments to ensure noise levels are controlled through a soft start procedure at the onset of piling (see Schedule 11, Part 2, Condition 11 (1)(g) of the Generation Assets dML and Schedule 11, Part 2, Condition 12 (1)(g) of the Transmission Assets dML.</p> <p>Furthermore and importantly, the Applicant has committed to additional noise reduction measures if determined necessary (to be determined prior to construction based on a understanding of other projects that may be coming forward at the same time as HOW03), see Schedule 11, Part 2, Conditions 11 (4, 5 and 6) of the Generation Assets dML and Schedule 12, Part 2, Conditions 12 (4, 5 and 6) of the Transmission Assets dML.</p> <p>For the avoidance of any doubt, those measures identified under 11/12 (5) that would be considered (in the highly unlikely scenario that sufficient projects are piling at the same time that there is genuine risk to the conservation objectives of the southern North Sea SCI)) comprise:</p> <p>(a) seasonal restrictions to piling;</p>	<p>WDC agree that the Applicant has identified a sensible list of potential mitigation options, and that it is correct not to be definitive on which is most appropriate at this stage in the development process. However, WDC reserve judgement under what circumstance they should be applied and recommend that only proven mitigation methods are relied upon. These mitigation methods (in the form of big bubble curtains) have been proven to be economically viable, add minimal time to construction, and can reduce noise disturbance area by ~90%.²</p> <p>The Applicant does not agree that the second sentence above is factually correct. Bubble curtains have not been used in the UK for piling and therefore, it cannot be assumed that they would not render a project unviable within the CfD process (if bidding against other projects that do not have such</p>	<p>Not agreed - Both parties positions are final on this matter.</p>

² Nehls, G., Rose, A., Diederichs, A., Bellmann, M., Pehlke, H., 2016. Noise Mitigation During Pile Driving Efficiently Reduces Disturbance of Marine Mammals, in: Popper, A.N., Hawkins, A. (Eds.), The Effects of Noise on Aquatic Life II. Springer New York, New York, NY, pp. 755–762. https://doi.org/10.1007/978-1-4939-2981-8_92

Dähne, M., Tougaard, J., Carstensen, J., Rose, A., Nabe-Nielsen, J., 2017. Bubble curtains attenuate noise from offshore wind farm construction and reduce temporary habitat loss for harbour porpoises. Mar. Ecol. Prog. Ser. 580, 221–237. <https://doi.org/10.3354/meps12257>

WWF, 2016. A Positive Future for Porpoises and Renewables. Assessing the Benefits of Noise Reduction to Harbour Porpoises During Offshore Wind Farm Construction.

WDC Recommendations	Hornsea Project Three Position	Further discussion notes	Final Position
	<p>(b) scheduling of piling, having regard to previous, ongoing and future piling associated with other offshore developments, based on an updated assessment of cumulative impacts;</p> <p>(c) the use of alternative foundation methodologies, such as jacket foundations or gravity base foundations;</p> <p>(d) the use of noise reduction at source technologies; and</p> <p>(e) the use of other relevant technologies or methodologies that may emerge in the future.</p>	<p>commitments).</p> <p>It is the experience of Orsted (from its Projects in certain countries where bubble curtains are required to meet statutory noise limits) that applying bubble curtains results in an approximate 20% increase to the duration of the foundation installation process and a significant consequential cost increase.</p> <p>The Applicant acknowledges that bubble curtains are proven to reduce noise levels and the associated impact area under a restricted set of operational conditions. However, the applicant maintains that more recent empirical evidence collected at a number of offshore wind farm construction sites does not indicate such a consistently large reduction in impact range with the use of bubble curtains³. On average, across the first seven offshore wind farms in Germany the maximum effect distance was 17 km without bubble curtains and 15 km with. This means that there was a reduction in both the noise levels and magnitude of porpoise response as a result of using bubble curtains but overall effects were seen out to similar distances.</p>	

³ Brandt, M., Brandt, M.J., Dragon, A.C., Diederichs, A., Bellmann, M.A., Wahl, V., Piper, W., Nabe-Nielsen, J. and Nehls, G., 2018. Disturbance of harbour porpoises during construction of the first seven offshore wind farms in Germany. Marine Ecology Progress Series, 596, pp.213-232

WDC Recommendations	Hornsea Project Three Position	Further discussion notes	Final Position
		The Applicant welcomes reference to specific empirical evidence from WDC to support the points raised on economic viability of bubble curtains in the UK, implications for construction programme, and noise reduction.	
A robust impact monitoring strategy (Marine Mammal Monitoring Plan (MMMP)) is developed for the range of species that can reasonably be expected to be impacted	Schedule 11, Part 2, Condition 11 (1)(g) of the Generation Assets dML and Schedule 11, Part 2, Condition 12 (1)(g) of the Transmission Assets dML commit the Project (where part-driven pile foundations are proposed) to ensuring that a robust MMMP is developed using best practice measures and approved (by the MMO) prior to the commencement of activity.	Agreed	Agreed
WDC is included as a consultee of the MMMP and that WDC are included in the discussions for the design of the MMMP as WDC have concerns regarding effectiveness of some mitigation methods	The Applicant does not consider it appropriate to name specific consultees for plans on the dML. The Applicant notes that the MMO will consult with those organisations it deems relevant prior to the approval of any plan within the dMLs.	<p>WDC note that other developers have agreed to consult with WDC on the MMMP</p> <p>The Applicant will continue to engage with WDC as the project moves forward towards construction for those matters of interest to WDC.</p> <p>However, the Applicant's position on this remains that it is considered appropriate to leave it to the MMO to decide who it needs to formally consult with on pre-commencement documentation.</p>	Agreed

WDC Recommendations	Hornsea Project Three Position	Further discussion notes	Final Position
A robust MMMP should include: shut-down when marine mammals approach within a specified distance of operations (mitigation zone)	As stated above the Applicant can confirm that a robust MMMP will be developed using best practice measures and following SNCB guidance. This plan will be developed prior to the commencement of activity, once the final design of the Project is known.	WDC confirm the shut down would relate to piling operations only. WDC agree that it is appropriate to discuss the specific content of the MMMP at the appropriate later date (once the final scheme design is known prior to construction).	Agreed
That the monitoring strategy should be appropriate to consider cumulative impacts of all developments in the region	<p>The Applicant has made a commitment (Schedule 11, Part 2, Condition 15(2)(a)(i) and Schedule 12, Part 2 of the Generation Asset dML) to develop:</p> <p><i>a plan for marine mammal monitoring, any monitoring required to test predictions in the environmental statement concerning key marine mammal interests of relevance to the authorised scheme;</i></p> <p>As identified within Table 3.3 of the In-Principle Monitoring Plan (PINS doc ref 8.8) the monitoring set out within this plan will have regard to behavioural disturbance from percussive piling. Within this table the benefits that strategic monitoring may bring are noted. Specifically, it is noted within this table that the objectives of the monitoring will be to help reduce the uncertainty relating to the consequence of disturbance from piled foundation installation, particularly at a cumulative level.</p>	Agreed	Agreed

WDC Recommendations	Hornsea Project Three Position	Further discussion notes	Final Position
<p>Ground-truthing of modelled noise assessment data should be undertaken</p>	<p>The Applicant has made two specific noise monitoring commitments (see Schedule 11, Part 2, Condition 15(2)(b)(i and ii) and Schedule 12, Part 2 of the Generation Asset dML):</p> <p><i>(b) in relation to the construction phase of the authorised project—</i></p> <p><i>(i) where monopile foundations are to be employed, unless others agreed by the MMO in writing, details of proposed monitoring of the noise generated by the installation of the first four monopile foundations to be constructed under this licence;</i></p> <p><i>(ii) a plan for monitoring of the duration of piling activity;</i></p>	<p>WDC agree that b(i) and (ii) represent pragmatic noise monitoring commitments.</p> <p>WDC wish to see monitoring throughout the whole piling schedule and mammal response to the piling, however, they recognise that this may fall under the monitoring cited in the row above.</p>	<p>Agreed</p>
<p>An assessment report is publicly available within a reasonable timeframe of construction completion.</p>	<p>It is not clear exactly what WDC are referring to on this point, however, the Applicant notes that it is required to demonstrate compliance to the MMO in relation to its monitoring activities.</p>	<p>WDC confirmed that this relates to assessment of noise modelling and how these compare to what actually took place along with any monitoring as cited in above rows. And that the report on this assessment is made publicly available as soon as reasonably possible.</p> <p>The Applicant can confirm that reports are made publicly available on the Crown Estate marine data exchange and projects have a requirement for this under the Agreement for Leases with the crown estate.</p>	<p>Agreed</p>

