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MMO Reference: DCO/2019/00005  
Planning Inspectorate Reference: EN010117  
Identification Number: 20045232

9 July 2024

Dear Richard Allen,

## **Planning Act 2008, E.On Climate and Renewables UK Ltd, Proposed Rampion 2 Offshore Wind Farm Order**

### **Deadline 5 submission**

On 20 September 2023 the Marine Management Organisation (the “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 E.On Climate and Renewables UK Ltd (the “Applicant”) for determination of a development consent order for the construction, maintenance and operation of the proposed Rampion 2 Offshore Wind Farm (the “DCO Application”) (MMO ref: DCO/2019/00005; PINS ref: EN00117).

The Applicant seeks authorisation for the construction, operation and maintenance of DCO Application, comprising of up to 90 wind turbine generators together with associated onshore and offshore infrastructure and all associated development (“the “Project”). The associated development includes an offshore generating station with an electrical export capacity of in excess of 100 megawatts (MW) comprising up to 90 turbines, and array cables, in an area approximately 196 square kilometres (km<sup>2</sup>), located approximately 13 kilometres (km) south of the Sussex coast located to the west of the existing Rampion Offshore Windfarm.

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



Ethan Lakeman  
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# 1. Comments on Applicant’s update to Draft DCO (Rev E) (REP4-005)

## 1.1 DCO and DML Major Comments (including Schedule 11-12)

1.2 The MMO have included an amended table from our Deadline 4 response, which details the outstanding issues relating to the DCO.

**Table 1 - MMOs outstanding comments on the draft Deemed Consent Orders and Deemed Marine Licences.**

Main DCO		
	Part 2 Principal Powers	
	5 Benefits of the Order	<p>The MMO note there have been some amendments to article 5(2)(a) and (b), which no longer include explicit reference to the DML. However, the main issues remain unresolved.</p> <p>The MMO also note that in the Applicant's Post Hearing Submission - Issue Specific Hearing 2 Rev A (REP4-072) (June 2024) the Applicant stated that a response to the MMO’s written response “<i>will be provided</i>”. The MMO understands that this has not yet been provided.</p> <p>The MMO therefore, will not enter into further substantive discussions on Article 5 here but reiterates that our objections remain outstanding and unresolved and await the Applicant’s response before engaging further on this point. The MMO position on Article 5 is provided in Section 1 of our Deadline 4 response (REP4-088).</p> <p>However, the MMO have provided a response to the ExA Written Questions regarding Article 5, in Section 6 of this response.</p> <p>This also applies to paragraph 7 of the DMLs, below.</p>
	Schedule 11 & Schedule 12 – Deemed Marine Licences	
	Part 1	
	4.(e) “plastic and synthetic material” 4. (g) “... other chemicals ....”	These broad definitions remain unchanged.

		The MMO considers 4(e) and 4(g) too broad. Please can the Applicant further define the type of 'synthetic materials', 'plastics' and 'other chemicals' that are anticipated to be deposited at sea.
	7. <i>"The provisions of section 72 (variation, suspension, revocation and transfer) of the 2009 act apply to this licence except that the provisions of section 72(7) and (8) relating to the transfer of the licence only apply to a transfer not falling within article 5 (benefit of the Order) of the Order."</i>	See comments to article 5, above.
	9. <i>"Any amendment to or variation from the approved plans, protocols or statements must be in accordance with the principles and assessments set out in the environmental statement and approval for an amendment or variation may only be given in relation to immaterial changes where it has been demonstrated to the satisfaction of the MMO that the amendment or variation is unlikely to give rise to any new or materially different environmental effects from those assessed in the environmental statement."</i>	<p>The MMO has previously requested the following change, which has not been actioned. MMO proposed changes in bold:</p> <p><i>"Any amendment to or variation from the approved plans, protocols or statements must be in accordance with the principles and assessments set out in the environmental statement and approval for an amendment or variation may only be given in relation to immaterial changes where it has been demonstrated to the satisfaction of the MMO that the amendment or variation <b>will not</b> <del>is unlikely</del> to give rise to any new or materially different environmental effects from those assessed in the environmental statement."</i></p> <p>The MMO ask the Applicant to explain why this has not been actioned, given the representations the MMO made on this point.</p>
	Part 2 Conditions	
Condition 3(2)	<i>"[...] all operations and maintenance activity shall be carried out in accordance with the submitted operations and maintenance plan"</i>	<p>The MMO has previously requested that the operations should be in accordance with the plan as approved, not simply submitted. The MMO restates our position that the wording should be amended as follows. MMO proposed changes in bold:</p> <p><i>"All operations and maintenance activities should be carried out in accordance with the <b>approved</b> <del>submitted</del> operations and maintenance plan <b>unless otherwise agreed in writing between the applicant and the MMO.</b>"</i></p>

		<p>This is significant, as without the wording ‘approved’ there is nothing to stop the Applicant proceeding once the plan has been submitted, and this could have significant consequences if the plan is not of sufficient quality, as the MMO will have no ability to prevent the operations and maintenance activities proceeding as the applicant has proposed.</p> <p>The MMO ask the Applicant to explain why this has not been actioned, given the representations the MMO made on this point.</p>
Condition 3(5)	<p>Maintenance of the authorised scheme  <i>“Where the MMO’s approval is required under paragraph (3), approval may be given only where it has been demonstrated to the satisfaction of the MMO that the works for which approval is sought are unlikely to give rise to any material new or materially different environmental effects from those assessed in the environmental statement.”</i></p>	<p>The MMO has previously requested the following change, which has not been actioned. MMO proposed changes in bold:</p> <p><i>“Where the MMO’s approval is required under paragraph (3), approval may be given only where it has been demonstrated to the satisfaction of the MMO that the works for which approval is sought <b>will not</b> <del>are unlikely to</del> give rise to any material new or materially different environmental effects from those assessed in the environmental statement.”</i></p> <p>The MMO ask the Applicant to explain why this has not been actioned, given the representations the MMO made on this point.</p>
Condition 9(8)	<p><i>“All dropped objects must be reported to the MMO using the dropped object procedure form as soon as reasonably practicable following the undertaker becoming aware of an incident. On receipt of the dropped object procedure form, the MMO may require relevant surveys to be carried out by the undertaken (such as side scan sonar) if reasonable to do so and on receipt of such surveys the MMO may require obstructions which are hazardous to other marine users to be removed from the seabed at the undertaker’s expense if reasonable to do so.”</i></p>	<p>The Applicant’s new wording represents a partial amendment integrating some of the MMO’s requests. The MMO restates our position that wording should be amended as follows. MMO proposed changes in bold:</p> <p><i>“Condition 9(8) All dropped objects must be reported to the MMO using the dropped object procedure form as soon as reasonably practicable <b>and in any event within 24 hours</b> following the undertaker becoming aware of an incident. On receipt of the dropped object procedure form, the MMO may require relevant surveys to be carried out by the undertaker (such as side scan sonar) if reasonable to do so. <del>and on</del> <b>On</b> receipt of such surveys the MMO may require <b>specific</b> obstructions <del>which are hazardous to other marine users</del> to be removed from the seabed at the undertaker’s expense if reasonable to do so.”</i></p> <p>In regards to Condition 9(1) the MMO has received confirmation from our Strategic Renewables Unit (SRU) on the final wording of this condition.</p>



		<p>The MMO requests that Condition 9(1) is removed and replaced with the following condition:</p> <p><i>“Unless otherwise agreed in writing by the MMO, all chemicals and substances, including paints and coatings, used below MHWS for the undertaking of the licensed activities must be approved in writing by the MMO prior to use. Submission for approval to the MMO must take place no later than eight weeks prior to use.”</i></p> <p>This wording is to be included on all DCOs going forward. The MMO is currently reviewing offshore wind chemical consenting. This proposed condition allows the project flexibility to adapt to any process changes that may arise. We encourage the applicant to engage early with the MMO when seeking to discharge this condition.</p>
Condition 10(1)	<p>Force Majeure <i>“If, due to stress of weather or any other cause the master of a vessel determines that it is necessary to deposit the authorised deposits within or outside of the Order limits because the safety of human life or if the vessel is threatened, within 48 hours full details of the circumstances of the deposit must be notified to the MMO. (2) The unauthorised deposits must be removed at the expense of the undertaker unless written approval is obtained from the MMO.”</i></p>	<p>The MMO has previously requested removal/clarification on this clause, since it duplicates s.86 of 2009 Act.</p> <p>The MMO ask the Applicant to explain why this has not been actioned, given the representations the MMO made on this point.</p> <p>The MMO position on this condition is provided in Section 1 of our Deadline 4 response (REP4-088).</p>
Condition 11(1)(a)(iii) & (v) and (c)(i) Condition 11(2)(h)	<p>Pre-construction plans and documentation</p> <p><del>11(a)(iii) “the proposed length location and arrangement of the array cables comprising Work No.-2 and any associated micro-siting to avoid marine heritage receptors unless alternative mitigation is agreed in writing with the MMO and the statutory historic body and sensitive features as far as is practicable 2.”</del></p>	<p>The MMO note these latest changes. Any comments the MMO have will be provided at Deadline 6.</p>

	<p>11(a)(v) “any exclusion zones/environmental micro-siting requirements, <b>due to marine heritage constraints, environmental constraints or difficult ground conditions discovered post approval under this condition 11 (pre-construction plans and documentation) and condition 16 (pre-construction surveys),</b>”</p> <p>11(c)(i) “foundation installation methodology, including a dredging protocol, piling methods, <b>including maximum proposed hammer energy,</b> drilling methods and disposal of drill arisings and material extracted to include seabed preparation for foundation where relevant”</p> <p>11(2)(h) “<del>a timetable for any further site investigations.</del> <b>a timetable for further site investigations, which must allow sufficient opportunity to establish a full understanding of the historic environment within the relevant parts of the offshore Order limits and the approval of any necessary mitigation required as a result of the further site investigations prior to commencement of licensed activities.</b>”</p>	
Condition 12(3)	“The MMO must determine an application for approval made under condition 11 within four months commencing on the date the application is received by the MMO ...”	<p>The MMO have previously stated that this Condition should be removed in its entirety. The MMO cannot be restricted to deadlines which are not under the 2009 Act. The MMO has internal KPIs which work towards a 13 week turnaround but this is not always possible. The MMO will never unduly delay but cannot be bound by arbitrary deadlines imposed by the applicant since this would potentially prejudice other licence applications by offering expediency to the applicant at the expense of other applications.</p> <p>In the absence of a removal of this Condition the following wording is recommended. MMO proposed changes in bold:</p>



		<p><i>“(3) The MMO <b>will endeavour to</b> <del>must</del> determine an application for approval made under condition 11 within a period of four months commencing on the date the application is received by the MMO, unless otherwise agreed in writing with the undertaker.”</i></p> <p>The MMO also note that in the Applicant's Comments on Deadline 3 Submissions Rev A (REP4-070) the Applicant proposes the position of pursuing Judicial Review procedures if these deadlines are not met. The MMO response to these comments is given in Section 5.1.3 of this Deadline response.</p>
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## 2. MMO Comments on Applicant's amended Application Documents submitted at Deadline 4

2.1 The MMO in consultation with the Centre for Environment, Fisheries and Aquaculture Science (Cefas) have reviewed the following amended documents submitted at Deadline 4:

- Marine Plan and Policies Statement (REP4-068)
- Statements of Commonality for Statements of Common Ground Rev C (REP4-059)
- In Principle Sensitive Features Mitigation Plan Rev D (REP4-054)
- Offshore In Principle Monitoring Plan Rev C (REP4-056)
- Environmental Statement Volume 2 - Chapter 11 Marine mammals Rev C (REP4-021)
- Draft Piling Marine Mammal Mitigation Protocol Rev B (REP4-052)
- Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062)
- Further Information for Action Point 34 - Guillemot and Razorbill Rev B (REP4-066)

### General Comment

2.2 The MMO note that when conducting our review of these documents, several inconsistencies were identified with regards to the titles and figure references of the Applicant's submissions. These include duplicates of identical documents that were submitted to the MMO with differing document references (i.e. the updated *Statements of Commonality for Statements of Common Ground Rev C* (REP4-059) was submitted to the MMO as both Document 8.21 and 8.22) and updated documents featuring the incorrect Rev lettering (i.e. the updated *Offshore In Principle Monitoring Plan Rev C* (REP4-056) was submitted to the MMO as Rev B). In order for the MMO to provide appropriate feedback to the Applicant in our Deadline responses it is important to be able to easily identify new/updated documents and ensure both ourselves and our technical advisors are reviewing the most relevant and updated versions of documents. These errors can lead to additional confusion and delays, especially when dealing with large quantities of Deadline submissions in a limited timeframe.

### **Marine Plan and Policies Statement (REP4-068)**

2.3 The MMO acknowledge the revised Marine Plan and Policies Statement and thanks the Applicant for responding to our Deadline 3 response (REP2-026). The MMO have reviewed the updated comments for S-INF-1, S-CAB-2 and S-AGG-4 and have no further comments to make at this time.



## Statements of Commonality for Statements of Common Ground Rev C (REP4-059)

2.4.1 The MMO have reviewed the updated Statement of Commonality for Statements of Common Ground (SoCG) and have the following comments to make.

2.4.2 The MMO consider our current position relating to Fish/Shellfish Ecology to be 'some matters under discussion/some matters not agreed', and therefore would consider our position as orange, rather than purple within the traffic light system. The MMO, the Applicant and the MMO's technical advisors Cefas (Centre for Environment, Fisheries and Aquaculture Science) had a meeting on 24 June 2024 to discuss the Applicant's recent Deadline 4 submissions, and the MMO's position following this call is detailed in Sections 2.6, 2.9 & 2.14 of this Deadline response. The MMO, Cefas and Natural England (NE) consider there to be several unresolved, major issues relating to black sea bream, sandeel and herring, and therefore the MMO do not agree with the current traffic light rating of purple.

2.4.3 The MMO have detailed verbally at Issue Specific Hearing 2 on the 15 May 2024, and in our written representations our current position on the draft DCO and the inclusion of Article 5. There remains significant disagreement between the MMO and the Applicant on the current draft DCO Rev E (REP4-005) as detailed in Section 1 of this Deadline response. The MMO therefore do not consider our position to be 'some matters agreed/some matters under discussion' and consider that 'some matters agreed, some matters not agreed, some matters under discussion' is a more appropriate category.

### 2.4.4 MMO SoCG page turn

2.4.5 The MMO and the Applicant attended a SoCG page turn meeting on 04 July 2024 to discuss the status of outstanding issues. During this meeting the MMO and the Applicant discussed all outstanding discussion points which have not yet been agreed (i.e. all discussion points with a Position Status of 'Ongoing point of discussion' 'Not agreed – No material impact' and 'Not agreed – material impact'. The results of this discussion determined that several discussion points would need to remain ongoing points of discussion due to the Applicant's intention to submit further supporting information at Deadline 5 which will require review by the MMO and our scientific advisors. The MMO and the Applicant deem that several matters relating to underwater noise impacts, including the determination of a suitable disturbance threshold for black sea bream the Applicant's position that the month of July should not be included in the defined mitigation period for the zoning plan will remain as 'Not agreed – material impact'.



- 2.4.6 The MMO note that the Examining Authority (ExA) have requested that a final SoCG is submitted at Deadline 5. The MMO consider that the SoCG process should capture all discussions throughout the Examination process, therefore, the MMO wish to raise its concerns regarding the ExA wanting Interested Parties to submit a finalised version of this document prior to the last deadline of this Examination. The MMO hope that the ExA recognise that this is an impractical request and one that should not be repeated in future Examinations. The MMO understand that the ExA requests the Principle Areas of Disagreement document is to be used to track any issues that have not yet resolved, but the MMO view this as duplication of work for what is included in the SoCG, and feel this negates the purpose of the SoCG as it has been used in previous examinations.
- 2.4.7 The MMO and the Applicant have both signed the final SoCG and this will be submitted at Deadline 5.

### **In Principle Sensitive Features Mitigation Plan Rev D (REP4-054)**

#### 2.5 Benthic comments

- 2.5.1 The MMO acknowledge the Applicant's development of a cable routing exercise to mitigate the impact, as far as possible, on sensitive benthic habitats. The approach taken will minimise the impact to known sensitive features by micrositing installation activities, while maximising the potential to achieve cable burial (and thus avoiding subsequent cable protection works) and undertaking the shortest installation route.
- 2.5.2 The refinement of the cable route design will be undertaken in stages, with an initial 'macro-routing' followed by refinement of a buffered cable route within this larger corridor which avoids sensitive features and considers engineering requirements.
- 2.5.3 Pre-construction geophysical surveys will be undertaken in advance of installation works to provide a robust assessment of sensitive features within the cable corridor and facilitate adequate micrositing. The MMO welcome these mitigation measures and consider them to be appropriate.

#### 2.6 Fisheries comments

- 2.6.1 The MMO welcome the change to commitment C-273 that the period for the seasonal restriction on Export Cable Corridor activities (including construction and installation, preventive or scheduled maintenance, inspections and decommissioning) has been updated to cover the entire black sea bream breeding season 1<sup>st</sup> March – 31<sup>st</sup> July, inclusive.
- 2.6.2 In reference to commitment C-265 the MMO welcome the Applicant's commitment to deploy Double Big Bubble Curtain (DBBC) as the minimum single offshore piling noise mitigation technology to deliver underwater noise attenuation for all foundation installations throughout the construction of the Proposed Development where percussive hammers are used.





- 2.6.3 The MMO acknowledge in reference to commitment C-281 that the Applicant has maintained their commitment to no piling within the western part of the Rampion 2 offshore array closest to the Kingmere Marine Conservation Zone (MCZ) during the majority of the black seabream breeding period (March-June); and sequenced piling in the western part of the Offshore Array Area during July in accordance with the zoning plan to be set out in the Final Sensitive Features Mitigation Plan.
- 2.6.4 The MMO has stated in our previous Written Responses (most recently in paragraph 4.3.8 of our Deadline 4 response (REP4-088) that the MMO does not consider it acceptable for the month of July to be treated separately from March-June within the Applicant's proposed zoning plan for piling during the spawning and nesting season for black sea bream. Black sea bream are at their most sensitive when undertaking spawning and nest guarding, and as a result, the conservation objectives of the Kingmere MCZ are of heightened importance during the spawning and nesting period. There is clear evidence that black sea bream continue to spawn and maintain their nests into and during July, and therefore July must be considered as an equally important part of the spawning and nesting period, and not less important than the March-June period.
- 2.6.5 The MMO refer the Applicant to paragraph 4.3.9 of our Deadline 4 response (REP4-088) where it is highlighted that, by the Applicant's own admission, they cannot confidently confirm that piling in July would have no significant effect on black sea bream which may be present and nesting. Pilling during this time would, therefore, contravene the conservation objectives of the Kingmere MCZ. Despite this, the Applicant has chosen to pursue a zoning plan which treats July as a less important period in the black sea bream spawning season, which directly contravenes advice provided by subject specialists.
- 2.6.6 The MMO acknowledge that in support of the Applicant's commitment to the use of noise abatement measures to mitigate the effects of underwater noise (UWN), the Applicant has presented UWN modelling for piling of monopile and multileg foundations in Figures 5.4 - 5.15 based on either the use of DBBC with a 15 dB reduction in source level, or the use of DBBC with one other form of noise abatement (PULSE hammer / MNRU hammer / Hydrosound Damper) to give a total maximum noise abatement of 20 dB (Figures 5.6, 5.7, 5.10 and 5.11).
- 2.6.7 The modelling presents the predicted range of effect for piling noise when using one or more of the proposed mitigation measures and aims to support the Applicant's proposed zoning plan (shown in Figures 5.12 - 5.13). The modelling presented in Figures 5.4 - 5.15 are based on a 141 dB Sound Exposure Level – Single Strike (SELss) threshold to determine the range of behavioural effects for black sea bream.
- 2.6.8 The MMO have consistently stated that we do not support the use of the 141 dB SELss threshold for the purpose of modelling behavioural responses in black sea bream and as such we do not support the implementation of a zoning plan that has been based on outputs of modelling that uses this 141 dB SELss threshold.



- 2.6.9 The MMO thank the applicant for providing two new figures, Figure 5.16 and Figure 5.17 which show the full / whole noise contours for piling of monopiles and multileg foundations respectively, based on the 135 dB SELss, with and without a 15 dB reduction using a DBBC (as per commitment C-265).
- 2.6.10 Figure 5.16 shows that even with a 15 dB reduction from the DBBC there would still be an overlap of noise disturbance with Kingmere MCZ when piling at the western modelled location, and a slight overlap of noise disturbance with Kingmere MCZ when piling at the eastern modelled location. A similar result is shown in Figure 5.17 for multileg foundation piling, with an overlap of noise disturbance with the Kingmere MCZ when piling at the western modelled location. For multileg foundation piling at the eastern modelled location there is no direct overlap of noise disturbance with Kingmere MCZ, however, the mapped noise contour suggests that noise disturbance effects would still be received <1 km from the Kingmere MCZ boundary.
- 2.6.11 The modelling for monopiles and multileg foundations has been based on locations at the eastern and western boundaries of the array, it is anticipated that any modelling for piling at locations situated inwards of these points (i.e. closer to Kingmere MCZ) would likely show an even greater overlap of noise contours with Kingmere MCZ. That is to say, the extent of noise will cover a larger portion of Kingmere MCZ leading to increased risk of disturbance to breeding black sea bream.
- 2.6.12 The modelling presented in Figures 5.16 and 5.17 demonstrates that the Applicant's zoning plan is not feasible and therefore it will not be possible to pile during the black sea bream spawning and nesting season.
- 2.6.13 Figures 5.16 and 5.17 also demonstrate how much of the surrounding area will also be affected by UWN caused by piling activities during the sensitive black sea bream breeding season. The MMO have consistently highlighted throughout previous advice that UWN from piling activities has the potential to not only disturb black sea bream whilst nesting, but also disrupt the migration of black sea bream. This may potentially prevent black sea bream from reaching spawning and nesting sites, as well as potentially causing physical/physiological responses in fish close to the sound source (such as temporary threshold shift (TTS) or injury) which may in turn affect their reproductive success. It should also be noted that there are black sea bream nesting sites present within the Rampion 2 export cable corridor (as recognised by the Applicant in the ES), and in the surrounding area outside of the Kingmere MCZ, which would be as affected by piling noise as black sea bream located within the MCZ. Regardless of the threshold that the modelling is based on, the Applicant's zoning plan offers little to no protection to black sea bream nesting in the areas outside of the Kingmere MCZ or those nesting within the projects export cable corridor during the spawning and nesting season.





## 2.7 Underwater noise comments

- 2.7.1 Figures 5.6 and 5.7 show noise impact modelling for monopile and multileg piling respectively based on the assumption that noise abatement systems can achieve a noise reduction of 20dB. This differs from the previous assumption of 22dB and 25dB reductions presented in the previous version of this document and is based on the available information on noise abatement systems from the Institute of Technical and Applied Physics (ITAP) as presented in document (REP4-067).
- 2.7.2 The MMO notes that the revised figures (Figures 5.4 - 5.7) representing mitigated piling impacts for both monopile and multileg piling assuming dB reductions from one or more of the proposed mitigation measures are based off a 141 dB SELss impact threshold. The MMO restates that we do not consider the use of a 141 dB threshold limit acceptable for monitoring potential behavioural impacts to sensitive features, such as black sea bream.
- 2.7.3 The MMO notes that in Figure 5.12 the piling exclusion area will be extended to encompass the western part of the offshore Array and as such no piling will therefore be undertaken in the western part of the Array during 1st March to 30th June and be subject to mitigation using the combination of DBBC and another noise abatement measure.
- 2.7.4 As per Figure 5.13 piling would commence with foundations located in the eastern area intersecting with the band A buffer, subsequently progressing to band B and so on as construction proceeds.
- 2.7.5 During July, if piling is to be undertaken in the western part of the offshore Array, foundation installation will be conducted using the combination of a DBBC and another noise abatement measure. Activities will also be subject to a sequencing plan such that piling in July will commence at locations of the western part of the Array furthest from the Kingmere MCZ. The detailed scheduling of piling locations will be determined once the layout of Wind Turbine Generators and substations has been finalised but will commence from the pile locations in the furthest south-west corner of the western part of the Array represented by the band C buffer.
- 2.7.6 From 1<sup>st</sup> August through to 28<sup>th</sup> February, no zoning plan will be implemented, however the Applicant proposes to continue to utilise DBBC noise mitigation technology during the construction period.
- 2.7.7 The MMO continue to maintain our position that we do not support the Applicant's proposed zoning strategy. As previously stated, the MMO cannot support a zoning strategy which is based on 141 dB threshold that we do not consider to be appropriate for predicting behavioural impacts to black sea bream or a zoning strategy which treats July as a less important period in the black sea bream spawning season (1<sup>st</sup> March – 31<sup>st</sup> July inclusive).



2.7.8 The new modelling provided by the Applicant and the assessments of the efficacy of proposed Noise Abatement Systems has implications for the potential UWN impacts to Seahorses as a feature of the Beachy Head West MCZ and Kingmere MCZ. The MMO defer to Natural England for their assessment of the updated impacts to Seahorses as a feature of MCZ's as the Statutory Nature Conservation Body on matters relating to protected sites. The MMO would inform the Applicant however, that as seahorses are a protected species it may be necessary to obtain a Wildlife Licence from the MMO if the Applicant deem that the proposed activities may cause disturbance to Seahorses. The MMO highlight that the onus is on the Applicant to determine if they believe a Wildlife Licence is necessary. Further information on Wildlife licencing in relation to seahorses can be found here: [Seahorses - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

## Offshore In Principle Monitoring Plan Rev C (REP4-056)

### 2.8 Benthic comments

- 2.8.1 The MMO acknowledge that the Applicant's pre-construction geophysical survey will consist of side scan sonar and multibeam echosounder to identify the presence of chalk reef, stony reef and *Sabellaria spinulosa* reef. This will be followed by a drop-down video survey to assess habitat presence and extent where these habitats are confirmed. Where no stony reef and *S. spinulosa* reef are identified at pre-construction, no post construction survey will be undertaken. The MMO consider this approach appropriate.
- 2.8.2 The MMO acknowledge the changes made to post-construction monitoring. Where a single post construction monitoring survey had been proposed previously, the Applicant has now committed to consult on post-construction monitoring with the MMO and its advisors.
- 2.8.3 The MMO welcome this commitment to consult on the post-construction monitoring survey design following the acquisition, processing, and interpretation of pre-construction monitoring data. The MMO confirms that both we and our advisors are available for to consult on post construction monitoring and believe this approach to be appropriate.

### 2.9 Fisheries comments

- 2.9.1 The MMO acknowledge that the Applicant now proposes to carry out underwater noise monitoring of four of the first twelve piles to validate the assumptions made within the ES and to validate the performance of the mitigation measures against assumptions made within the ES.



2.9.2 As raised in the MMO's Deadline 4 response (Paragraph 5.4.1 - REP4-088) the MMO continue to question whether monitoring only four mono and multileg piled foundations will be adequate to validate the numerous predictions made in the ES in relation to UWN noise, especially given the various piling scenarios proposed that include sequential piling, simultaneous piling, as well as the various noise abatement measures (DBBC, PULSE hammer (by IHC IQIP) / MNRU hammer (by MENCK) / Hydrosound Damper) and their efficacy in water depths of <40m vs >40m.

2.9.3 Based on the Applicant's proposals for piling activities and the various noise abatement options being considered, there are currently eight different piling scenarios for monopiling and multileg foundation piling that should be monitored if the performance of the mitigation measures can be effectively validated against assumptions made within the Environmental Statement (ES).

- Multileg/Mono: sequential with DBBC
- Multileg/Mono: simultaneous with DBBC
- Multileg/Mono: sequential with DBBC and PULSE hammer
- Multileg/Mono: simultaneous with DBBC and PULSE hammer
- Multileg/Mono: sequential with DBBC and MNRU hammer
- Multileg/Mono: simultaneous with DBBC and MNRU hammer
- Multileg/Mono: sequential with DBBC and Hydrosound Damper
- Multileg/Mono: simultaneous with DBBC and Hydrosound Damper

This will be doubled if piling in water depths of >40m is also factored in

2.9.10 The MMO acknowledge however, that only one of the proposed mitigation measures (PULSE hammer, MNRU hammer and Hydrosound Damper) will be used in conjunction with DBBC during construction and when conformation of the preferred measures is provided nearer the time it will reduce the number of scenarios presented above. The Applicant has also indicated in recent discussions with the MMO and Cefas that they intend to monitor piling in a deepwater location (>40m). The MMO recommend that the Applicant updates the UWN monitoring plan presented in this document to represent these discussions and provide more clarity on their monitoring plan.

2.9.11 Based on the information presented in Figures 5.16 and 5.17 the MMO consider the Applicant's zoning strategy to not be feasible and maintain our position that we do not agree with the proposal to implement a spatial zoning strategy which would allow the Applicant to carry out piling during the black sea bream spawning and nesting season. Without suitable robust modelling to demonstrate the effectiveness of a spatial zoning strategy for piling, we maintain our recommendation of a complete seasonal piling restriction in order to limit disturbance to adult spawning and nesting black sea bream during their spawning and nesting period (1st March to 31st July, inclusive).



2.9.12 The MMO suggest that it would be more precautionary to test the efficacy of noise abatement measures outside sensitive breeding periods rather than during them. As it is understood that the black sea bream spawning (nesting) season is March to July, the MMO recommends that measurements of non-abated piling are obtained outside of this window.

2.9.13 Given this, the MMO must maintain our recommendation that a seasonal piling restriction remains the only viable way to ensure there is no unacceptable disturbance to adult spawning and nesting black seabream during their spawning and nesting period (1<sup>st</sup> March to 31<sup>st</sup> July, inclusive).

## 2.10 Underwater noise comments

2.10.1 The MMO thank the Applicant for updating the timeframe for the submission of the final Offshore In Principle Monitoring Plan for approval by the MMO from four months to six months prior to the commencement of any survey works as per previous advice.

2.10.2 This final plan should include a detailed underwater construction noise monitoring plan. It is appropriate and recommended that both near-field and far-field measurements are undertaken to support this monitoring. The proposed monitoring should provide data to satisfy the following specific aims, to validate predicted noise levels, to validate the mitigation measures in terms of effectiveness and to validate compliance with the specified noise threshold proposed for black sea bream at the Kingmere Marine Conservation Zone (MCZ) site, should one be implemented.

2.10.3 It is understood from Table 4-4 and recent discussions with the Applicant that the proposed monitoring plan will consist of undertaking monitoring at four piling locations for each foundation type used (i.e. monopiles and multi-leg foundations). It is proposed that these locations will be selected from the first 12 foundations to be installed in order to provide data for sites with differing seabed conditions (particularly water depths), whilst ensuring data are collected for the earliest pile installations for verification of predicted (modelled) noise levels. The Applicant proposes to target two foundation sites of  $\leq 40\text{m}$  water depth and two sites of  $\geq 40\text{m}$  depth from the initial 12 foundation locations.

2.10.4 The MMO appreciate that the Applicant's reasoning behind this approach is to collect noise data for a range of different site conditions and to ensure that the modelling conducted is representative of the diversity of conditions present across the Rampion 2 site. The MMO would typically recommend that monitoring the first four piles is important to ensure data is collected promptly from the onset of the piling works and that data can be submitted to the MMO as soon as possible. This is necessary to ensure that recorded data can be compared to the predictions made in the ES as soon as possible, so that in the event that the monitoring reveals higher noise levels than those predicted, there is sufficient time at the start of the works for the MMO to undertake the necessary actions.





- 2.10.5 Due to the uncertainties that persist with the proposed monitoring, including, pile foundation type, the final noise mitigation method or methods to be used and the perceived efficacy of the proposed noise abatement systems, the MMO propose that an enhanced monitoring programme be put in place. This monitoring programme should include **obtaining measurements of the first eight piles (or eight of the first 12 piles), of each foundation type, to be installed.** We advise that this should include a commitment to provide initial outputs from the monitoring within 2 weeks of it concluding, highlighting any obvious deviations from what was assessed and whether the levels of noise abatement proposed have been achieved. We advise that the final reporting should be submitted to the MMO within 4 weeks.
- 2.10.6 An enhanced monitoring programme will provide valuable data on the efficacy of the proposed noise mitigation methods and help to support the predicted noise reductions presented in the Applicant's current modelling. Further comments on the uncertainties surrounding the achievability of noise reductions from the proposed noise abatement systems is provided in Section 3.3 of this Deadline response.
- 2.10.7 This monitoring programme should be designed to be as representative of site conditions as possible incorporating a mix of different seabed conditions and water depths and be conducted and submitted to the MMO as early as possible.
- 2.10.8 Table 4-4 states that the results of the underwater noise monitoring to establish the efficacy of the mitigation measures will inform the design of the piling exclusion zones to be implemented during the sensitive season for the black seabream feature of the Kingmere MCZ. The MMO remind the Applicant that we have at no point supported their proposed zoning plan and currently maintain that lack of support.

### **Environmental Statement Volume 2 Chapter 9 Benthic, subtidal and intertidal ecology Rev B (REP4-019)**

- 2.11 Due to the large volume of documents submitted at Deadline 4 requiring consultation with Cefas, the MMO have not been able to review this document. Any comments we have will be included in our Deadline 6 response.

### **Environmental Statement Volume 2 - Chapter 11 Marine mammals Rev C (REP4-021)**

#### 2.12 Underwater noise comments

- 2.12.1 The MMO thank the Applicant for updates made to Table 11-13 to provide clarity on the maximum parameters and assessment assumptions for impacts on marine mammals.
- 2.12.2 The Applicant has confirmed that the worst-case scenario for the marine mammal assessment for monopiles is simultaneous installation at West and East locations with sequential piling, so 2 monopiles in West location and 2 monopiles in East location (resulting in a total of 4 monopiles). The Applicant has confirmed that the worst-case scenario for the marine mammal assessment for multileg foundations with pin piles is simultaneous installation at West and East locations with sequential piling, so 4 pin piles in the West location and 4 pin piles in the East location (resulting in a total of 8 pin piles).



## **Draft Piling Marine Mammal Mitigation Protocol Rev B (REP4-052)**

### 2.13 Underwater noise comments

- 2.13.1 The MMO acknowledge that compliance with Condition 11 of Schedules 11 and 12 of the DCO, a Piling Marine Mammal Mitigation Protocol (MMMP) and an Unexploded Ordnance (UXO) Clearance MMMP will be produced in accordance with relevant guidance to minimise the risk of injury or mortality to marine mammals during the construction of Rampion 2. A Final Piling MMMP will be submitted at least six months prior to construction which will be in accordance with the measures in the Draft Piling Marine Mammal Mitigation Protocol (REP4-052).
- 2.13.2 The most recent version of this document does not contain any significant changes to that which has been previously reviewed and the MMO refer the Applicant to Paragraphs 4.8.1 – 4.8.9 & 4.11.4 – 4.11.8 of our Deadline 3 response (REP3-076) and our response to the Examining Authorities Written Questions, MM1.1–MM1.3 in Table 2 of our Deadline 4 response (REP4-088). These comments relate to the suitability of proposed noise monitoring and the ongoing disagreement on the sensitivity score for cetaceans and the significance of Permanent Threshold Shift (PTS).
- 2.13.3 The MMO acknowledge the addition of Table 2-2 and Table 2-4 showing a summary of the worst-case ramp up scenario for monopile and pin-pile foundations respectively. We also acknowledge the update to Table 4-1 to confirm that a DBBC will be deployed as the minimum single offshore piling noise mitigation technology to deliver underwater noise attenuation for all foundation installations throughout the construction of the Proposed Development where percussive hammers are used, as per Commitment C-265.

## **Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062)**

### 2.14 Fisheries comments

- 2.14.1 The MMO thank the Applicant for amending their sandeel and herring habitat suitability assessments in line with previous advice from the MMO. These updated assessments now include the Eastern Sea Fisheries Joint Committee (ESFJC) Fishing Grounds and Vessel Monitoring System (VMS) data layers and an amended 'heat' scale in line with the described methodologies as defined by MarineSpace (2013).





- 2.14.2 There remain outstanding issues with the sandeel habitat suitability 'heat' map provided by the Applicant, including the Applicants use of VMS data for the years 2016 – 2017 which is not a long enough time series to capture a suitable spatial extent for demersal fishing vessels. These are also not the most recent years of data available. Further to this, the methodologies described in Latta *et al.*, (2013) and MarineSpace (2013) do not incorporate Jensen *et al.*, (2011) as a data layer within the heatmapping exercise. Lastly, the heatmapping exercise does not present potential '*sandeel spawning habitat*' but rather potential *sandeel habitat* as the ecology of sandeels means that they spawn within the sediments they inhabit and therefore inhabitation in a given area includes spawning. Nonetheless, the Applicant has amended the scale attached to their sandeel habitat suitability heatmap in line with the methodology outlined in Latta *et al.*, (2013) and MarineSpace (2013).
- 2.14.3 The MMO note that Figure 3.2 shows that the Eastern Channel region has a generally low-medium potential for sandeel habitat, with an area of medium-high potential to the east of the Rampion 2 boundary. This does not entirely align with the regional baseline assessment produced by MarineSpace (2018), which shows the area to have a higher potential for sandeel. This discrepancy is likely due to the regional assessment drawing on VMS data for the years 2002-2015, which is a much longer time series than the Applicant has used, and so data coverage of the regional assessment is of a higher quality.
- 2.14.4 Based on the assessment for all impacts and effects to sandeel, the Applicant has concluded the project will result in Minor Adverse significance, which has been assessed as Not Significant against the Environmental Impact Assessment (EIA) terms. The MMO agree with the Applicant's conclusion.
- 2.14.5 The MMO note that the Applicant has updated their herring potential spawning habitat suitability assessment and provided updated Figures 3.3 and 3.4. While the Rampion 2 array itself has generally low potential as herring spawning habitat, the DCO limits are located on the edge of suitable spawning habitat.
- 2.14.6 The Applicant's updated herring spawning habitat 'heat' map (Figure 3.4) appears to show the entire Eastern Channel region as having predominantly medium potential (heat score 8-10) herring spawning habitat which is lower than would be expected if the correct data layers and scoring approach had been followed according to the methodology as defined by MarineSpace (2013). As a comparison, the regional baseline assessment produced by MarineSpace (2018), shows the 'heat' scoring for potential herring spawning habitat in the Eastern Channel region as being much higher (heat score of 12+ over the core spawning grounds to the east and south-east of the project boundary).



2.14.7 The MMO note from Table 3.5 that the Applicant has again used only 1-year of VMS data (years 2016 – 2017) in their heatmap, compared to the 13-year timeseries (2002-2015) used to produce the MarineSpace 2018 baseline. A longer timeseries will produce a data layer with a larger spatial extent representative of the spatial extent for pelagic fishing vessels. The VMS data used by the Applicant is not a long enough timeseries to be representative of fishing activity, nor is the data the most recently available, and so it is likely that this data layer is insufficient to adequately inform the updated heatmap.

2.14.8 The MMO also note from Table 3.7 that the Applicant has only applied a confidence score of 5 to International Herring Larvae Survey (IHLS) data where the larval density is >600 larvae per m<sup>2</sup>. This is a departure from the methodologies of Reach *et al.*, (2013) and MarineSpace (2013) and is not an acceptable form of filtering this data. Incorrect application of the VMS and IHLS data may have caused the down-weighting of 'heat' scores in the Applicant's updated herring spawning habitat 'heat' map.

2.14.9 The MMO request that the Applicant provides the following information for each of the three Southern North Sea IHLS surveys for the years that they have incorporated into the heatmap (i.e. 2007 – 2020):

- The start and end dates for each of the three surveys
- The survey station numbers where larvae presence was recorded

This is necessary to determine whether the correct range of data has been incorporated.

2.14.10 Given these uncertainties the MMO do not accept the conclusions of the Applicant in relation to the presence and importance of herring spawning grounds in the vicinity of the project, based on the heatmap presented. In addition, we have little confidence in the predicted mitigated impact ranges from underwater noise presented in Figures 3.7 and 3.8.

2.14.11 In Figures 3.5, 3.6, 4.3 and 4.4 the Applicant has presented UWN modelling for behavioural response impact ranges for spawning herring for simultaneous Monopile and Multileg piling scenarios. These figures present the range of behavioural impact based on modelling of the 141 dB threshold as per Kastelein *et al.* (2017). The MMO have stated numerous times that we do not consider 141dB an appropriate threshold for monitoring behavioural responses in black sea bream and that a more appropriate threshold would be 135Db SELss, as per Hawkins *et al.* 2014. Herring are a hearing specialist and have an even greater hearing sensitivity than black sea bream, as such, the MMO does not consider a 141dB threshold appropriate for modelling behavioural responses in herring and other clupeid fish. The MMO direct the Applicant to Table 2 - MMO Response to Applicants response to Examining Authority's First Written Questions, provided in our Deadline 4 response (REP4-088) for our most recent comments on appropriate behavioural threshold for herring.



- 2.14.12 Figures 4.1 and 4.2 present UWN modelling of mitigated and unmitigated piling impact ranges for simultaneous piling of multileg and monopile foundations, respectively. The noise contours show impact ranges for temporary threshold shift (TTS) 186 dB SELcum, and for 210 dB SELcum, modelled at the east and west piling locations. Modelling of the 186 dB SELcum threshold is appropriate for modelling TTS in adult herring, however it is not clear what physiological response the 210 dB SELcum threshold relates to. Popper *et al.*, (2014) states that for fish with swim bladders involved in hearing, such as herring, hearing thresholds for mortality and recoverable injury from pile driving should be 207 dB SELcum and 203 dB SELcum, respectively. Modelling of the 210 dB SELcum threshold appears to relate to the range of impact for mortality and mortal injury for eggs and larvae as per Popper *et al.*, (2014), as these figures are discussed in Section 4.2 (Potential impacts on herring eggs and larvae from underwater noise). The Applicant has not provided a clear description in the figure legend to indicate what is being presented. These figures should be amended to clarify that the 210 dB SELcum threshold relates the range of impact for mortality and potential mortal injury for eggs and larvae and this is being presented alongside the contours for TTS in adult fish with high hearing sensitivity.
- 2.14.13 Figures 4.1 and 4.2 show there is an overlap for the effects of TTS from unmitigated simultaneous piling of multileg and monopile foundations with areas of high larval densities (48,000 – 98,500 per m<sup>2</sup>) for herring. Areas where high larval densities occur are considered to be suitable herring spawning habitat where herring engaged in spawning activity are likely to be present. On this basis, it is reasonable to assume that herring engaged in spawning activity are likely to be affected by TTS if piling activities are operational during the Downs herring spawning season (1st November to 31<sup>st</sup> January, inclusive).
- 2.14.14 These figures also present the mitigated UWN contours for TTS (with 15 dB noise abatement reduction based on a DBBC). These mitigated contours are encouraging as the range of effect for TTS seems to be greatly reduced and appears to remain within the DCO boundary where herring larval densities are lower (0.1 – 2,500 per m<sup>2</sup>).
- 2.14.15 Figures 4.5 and 4.6, shows a reduced range of impact with the mitigated noise contours overlapping with areas of slightly lower larval densities (23,000 – 48,000 per m<sup>2</sup>) than the unmitigated noise contours. This does not mean that the risk of behavioural effects in adult spawning herring has been completely removed with the implementation of 15 dB noise abatement reduction based on a DBBC, as the mitigated behavioural effect contours still overlap with areas of medium larval densities (23,000 – 48,000 per metres squared (m<sup>2</sup>)). Overlap of the mitigated behavioural effect contours in Figures 4.5 and 4.6 with areas of high larval abundance (>48,000 per m<sup>2</sup>) appears sufficiently reduced with a 15 dB noise abatement reduction that the areas of highest potential spawning habitat are now outside of the range of impact.



- 2.14.16 Providing the Applicant can achieve and commit to a reduction of 15 dB using a DBBC and based on the modelling of TTS and behavioural effect ranges presented in Figures 4.1, 4.2, 4.5 and 4.6, it may be possible for the MMO's previous recommendation of a piling restriction during the herring spawning season to be amended so that some piling may be carried out during the herring spawning season.
- 2.14.17 The MMO are however cautious to accept these mitigated contours as final as the Applicant has presented a number of modelling scenarios which have included contours with differing levels of noise abatement reductions applied (ranging from -6 dB to -25 dB). There is also uncertainty as to whether a 15 dB noise reduction can be achieved in water depths greater than 40m.
- 2.14.18 In the Applicant's Deadline 4 submission ITAP - Information to support efficacy of noise mitigation abatement techniques with respect to site conditions at Rampion 2 Offshore Windfarm Rev A (REP4-067) it is stated that the achievable overall noise reduction of any noise abatement system might be slightly decreased by 1-2 dB in water depths > 40m. It is also possible that water depths greater than 40m will affect the efficacy of the other noise abatement mitigation options put forward by the Applicant. This represents a significant source of uncertainty as to whether a 15 dB noise reduction is achievable across the Rampion 2 site and the Applicant should clarify what proportion of the site (including the number of turbines) occurs in areas where water depth is greater than 40m.
- 2.14.19 A decrease in the noise reduction achievable by a DBBC in waters deeper than 40m could be up to 2 dB, however the Applicant has not presented UWN modelling to indicate how much of the herring spawning ground would be overlapped by mitigated UWN contours for TTS and behavioural effects which have a noise reduction of the 13 dB rather than the 15 dB reduction.
- 2.14.20 The Applicant should clarify that a minimum reduction of 15 dB, using a DBBC or other technology, is achievable across the site in order to demonstrate that UWN at a level likely to cause TTS and behavioural effects in adult spawning herring will not significantly overlap the herring spawning ground (i.e., that the noise abatement reduction modelled in Figures 4.1, 4.2, 4.5 and 4.6 is realistic and achievable in areas of the array where water depths exceed 40m).





2.14.21 If the Applicant is able to remove all uncertainties concerning the efficacy of Noise abatement Systems (NAS) across the Rampion project, there may be a possibility of the MMO to amend our previous recommendation of a full seasonal piling restriction. However, this will only be done once the Applicant can clarify the remaining uncertainties around the effectiveness of NAS below 40m. 2.14.22 Due to the uncertainties that persist concerning the efficacy of noise abatement systems across the Rampion project area and the lack of empirical data to corroborate the predicted noise reductions in the Applicant's modelling, the MMO is cautious to deviate from our position of full seasonal piling restriction during the sensitive breeding periods of black sea bream and herring. The MMO has proposed an enhanced monitoring programme to compensate for these uncertainties and to collect data to corroborate the predictions of the noise abatement measures. The MMO would also add that, No testing of the noise abatement measures should occur during the sensitive seasons for herring (1<sup>st</sup> November – 31<sup>st</sup> January, inclusive) and black sea bream (1<sup>st</sup> March – 31<sup>st</sup> July, inclusive)".

## 2.15 Underwater noise comments

- 2.15.1 The MMO note that some of the statements made in Section 3.2 with regards to impacts on spawning and language are unsupported and the language used is not appropriate e.g. "*Therefore, the use of DBBC throughout the piling campaign, will ensure there are no population level effects on the Downs herring stock*". As stated in previous deadline responses, the MMO recommend that the use of strong language and statements should be avoided when considerable uncertainties remain.
- 2.15.2 The Applicant has not addressed comments raised in Paragraph 4.6.2 of our Deadline 3 response (REP3-076) relating to updating figures to include dB threshold used to assess impacts to herring as per Popper *et al.*, 2014. For fish with swim bladders involved in hearing Popper *et al.*, 2014 sets hearing thresholds for mortality and potential mortal injury from pile driving as follows, mortality and potential mortal injury (210 dB SELcum), recoverable injury (203 dB SELcum) and temporary threshold shift (TTS) (186 dB SELcum). Herring as a hearing specialist qualifies under this criterion, so it would be beneficial for clarity and consistency if these thresholds could be included and used across all figures relating to UWN impacts on herring.
- 2.15.3 Figures 4.5 and 4.6 represent the predicted worst-case behavioural response impact ranges for spawning herring with and without mitigation for both monopile and multileg foundations respectively. Paragraph 4.1.11 of the document confirms that the mitigated contours are assuming a 15dB reduction from the use of a DBBC. For clarity and ease of reference, these figure legends should be updated to confirm the value of the assumed dB reduction used to generate the contours.



- 2.15.4 As previously stated in Paragraph 4.6.3 of our Deadline 3 response (REP3-076) both Figures 4-3 & 4-4 representing modelled noise contours show a significant overlap with high intensity spawning for the East piling location. Therefore, it is not appropriate for the Applicant to state that “*as evident in Figure 4-3 and Figure 4-4...there is no pathway for behavioural effects on spawning herring, as there is no significant infringement of the contour with the herring spawning ground...*” The MMO disagree with this statement.
- 2.15.5 In Paragraph 4.1.6 the Applicant states that “*there is no overlap of mitigated piling noise at a level that will disturb spawning adults (186 dB SELcum) at the recognised spawning grounds*” 186 dB SELcum refers to the value for TTS. As stated in previous deadline response TTS is not the same as disturbance and inappropriate to use the two terms interchangeably. The MMO would like to see this text changed to reflect this distinction.
- 2.15.6 Paragraph 4.2.3 states that “*Given the stationary nature of eggs and larvae, the potential for behavioural impacts is considered limited, therefore the worst-case impact ranges for effects on larvae is considered to relate to the potential for TTS*”. In relation to eggs and larvae Popper *et al.* (2014) criteria only provide thresholds for mortality and potential mortal injury. Thus, it is not possible to derive impact ranges for TTS with regards to eggs and larvae. This statement is therefore not appropriate and should be amended.

#### **Further Information for Action Point 34 - Guillemot and Razorbill Rev B (REP4-066)**

- 2.16 The MMO acknowledge the submission of Further Information for Action Point 34 - Guillemot and Razorbill Rev B (REP4-066). The MMO is aware there is ongoing discussions between Natural England and the Applicant with regards to the In Combination Assessments for impacts to Guillemot and Razorbill within Flamborough and Filey Coast SPA and Guillemot within the Farne Islands SPA. The MMO note in Natural England Deadline 4 submission (REP4-091) they have also reviewed the Applicant’s documents *Kittiwake Implementation and Monitoring Plan* (REP3-059) and *Guillemot and Razorbill Evidence and Roadmap* (REP3-060) submitted at Deadline 3 and are “*broadly supportive of the measures proposed*”. The MMO defer to Natural England on matters relating to ornithology but will maintain a watching brief on responses.





### 3. MMO Comments on Applicant's Submissions received at Deadline 4

#### ITAP - Information to support efficacy of noise mitigation abatement techniques with respect to site conditions at Rampion 2 Offshore Windfarm Rev A (REP4-067)

3.1 This document presents the results of empirical monitoring data obtained at other offshore wind farm sites during pile installation on the performance of noise mitigation measures and the comparative site consideration between those projects and Rampion 2. These have been considered to provide an assessment of the potential performance of applied noise mitigation at the Rampion 2 site.

#### 3.2 Fisheries comments

3.2.1 Comments on how the information presented in this document impact the MMO perceived risks from underwater noise to sensitive fish species are covered by fisheries comments provided for the *Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B* (REP4-062) provided above in Section 2.14 of this Deadline response.

#### 3.3 Underwater noise comments

3.3.1 The MMO thank the Applicant for providing this document but note that a final empirical evaluation regarding application of any noise abatement or mitigation techniques is only possible after all details of the proposed impact pile-driving activities are confirmed and available, for example pile-design, final pile-driving analysis and confirmation of mitigation measures and their planned implementation.

3.3.2 The information provided in this document highlights that the most reliable and commonly used noise abatement system world-wide is the Big Bubble Curtain (BBC) whether single or double. This document indicates that the application of a Double Big Bubble Curtain (DBBC) is the most favourable option for achieving an overall noise reduction of 15dB using a single noise abatement system in water depths up to 40m.

3.3.3 It is understood that as water depths increase the effectiveness of BBC noise abatement systems is reduced due to dispersion of the bubbles in the water column. It is understood that the Rampion 2 site contains areas with depths >50m in parts. This document identifies that no clear empirical evaluation of the achievable overall noise reduction by any BBC system in in water depths of >40m is currently available.

3.3.4 This report states that a decrease in the noise reduction achievable by a DBBC in waters deeper than 40m could be up to 2 dB. As commented on above in our review of the figures presented in REP4-062, no UWN modelling to indicate mitigated UWN contours for TTS and behavioural effects on sensitive features assuming a noise reduction of 13 dB rather than the 15 dB has so far been presented.



- 3.3.5 The report notes that based on past experience, the effectiveness of any BBC system will decrease by 1 dB (unlikely 2 dB) in 50m water depth compared to 40m. It also states that to compensate or minimise the effect of the increased water depth an enhanced BBC could be applied as an inner ring in combination with a normal BBC as an outer ring. The MMO consider this information confusing as it appears to describe the process by which a DBBC is implemented. The assumed 15 dB noise reduction estimate is based on the use of a DBBC so the MMO would request that the Applicant provide some clarity on what is meant by this statement or how the method referenced differs from the DBBC methodology used to assume the 15dB noise reduction.
- 3.3.6 In order to achieve a greater overall noise reduction of 20 dB this report identifies that combination of two independent systems near and far-field, or one noise abatement system in combination with a new hammer technology must be applied.
- 3.3.7 This report appropriately recognises the uncertainties that need to be considered when considering the efficacy of noise abatement systems, including, soil conditions and possible ground couplings and tunnelling effects, as well as current speed and water depth.
- 3.3.8 The MMO have previously raised that frequency is also an important factor. The efficacy of a noise abatement system depends on the frequency range at which sound energy is reduced and on the target species, as each species is sensitive to a certain frequency range. Fish are typically more sensitive to sound at low frequencies, where the noise reduction from noise abatement systems tends to be smaller.
- 3.3.9 In the absence of more specific evidence on efficacy of noise abatement systems at 50m depth, and given the available evidence for other depths, the MMO are generally content with the Applicant's estimate of 15 dB reduction for DBBC at 50m depth, acknowledging that there remain uncertainties around this.
- 3.3.10 To compensate for this uncertainty in noise reduction at 50m, the MMO propose that an enhanced monitoring programme be put in place. This monitoring programme **should include obtaining measurements of the first eight piles (or eight of the first 12 piles), of each foundation type, to be installed.**
- 3.3.11 The MMO acknowledge that this is more than the standard requirement for the first four piles of each foundation type, however given the uncertainties that persist and the requirement for empirical monitoring data at depths >40m, we believe this is justified. By measuring the first eight piles, more data will be available to determine the decrease in dB reduction experienced at 50m and the effectiveness of the proposed mitigation in achieving a minimum 15dB reduction across the whole project site.



3.3.12 The piling locations monitored should, where feasible, be representative of the variety of conditions that are present across the project site with regard to depth and seabed condition. These monitoring reports should be submitted to the MMO in a timely manner, to ensure that the measured noise levels are not exceeding the modelled predictions. The data gathered will provide valuable evidence on how effective NAS (such as DBBC) are in deeper waters, particularly for depths greater than 40-45m, providing a more extensive corroboration of the developer's noise reduction predictions and reducing uncertainty in future consents.

### **Additional Documents**

3.4 The MMO have briefly reviewed the below documents, but due to the high volume of documents received at Deadline 4, have not been able to provide comments. The MMO defer to the advice of Natural England as the Statutory Nature Conservation Body on matters relating to protected sites and for their assessment of the appropriateness of the following documents:

- Without Prejudice Measures of Equivalent Environmental Benefit Review Rev A (REP4-078)
- Schedule 18 - Measures of Equivalent Environmental Benefit (on a without prejudice basis) Rev A (REP4-081)
- Kingmere Marine Conservation Zone (MCZ) Without Prejudice Stage 2 (MCZ) Assessment Rev A (REP4-071)



## 4. MMO Comments on Applicant's post Issue Specific Hearing 2 Documents

### Applicant's Post Hearing Submission - Issue Specific Hearing 2 Rev A (REP4-072)

#### 4.1 DCO comments

- 4.1.1 In response to the comments made by the MMO on Article 5 of the DLM at ISH2 the Applicant confirmed that it would respond to the written points made by the MMO in due course. Despite their assurances to the Examining Authority on page 10 of this document, we have not received anything in writing from the Applicant. The MMO note that the Applicant chose to reserve its position until it had received our written submissions; the MMO can confirm that these were provided at Deadline 4 and we would therefore ask the Applicant to provide these comments as a priority in order that they can be considered. It is important to note that the MMO continues to object to Article 5 as drafted.
- 4.1.2 The MMO also submitted an alternative draft Article 5 to the Applicant for their consideration on 12 June 2024 on a without prejudice basis. The MMO has so far received no response or acknowledgment of this submission.
- 4.1.3 The Applicant confirmed that it would be updating their marine plans and policies assessment to take account of outstanding comments made by the MMO. The MMO has reviewed the updated Marine Plan and Policies Statement (REP4-068) and our comments on this are provided in Section 2.3 of this Deadline response.

#### 4.2 Fisheries comments

- 4.2.1 In response to Action Point 3b the Applicant states with regards to herring that they are "*confident that spawning activities are occurring in the spawning ground as defined by Coull et al. (1998), as opposed to areas where high densities of eggs and larvae are present (as identified by IHLS data), as eggs and larvae will be drifting away from the defined spawning ground*" The MMO disagree with this statement.
- 4.2.2 According to Heath & Rankine (1988) herring larvae can larvae drift up to 9km a day, and post-larval Isaacs-Kidd Midwater Trawl (MIK) net survey data carried out during International Bottom Trawl Surveys (IBTS) show that larvae generally move in an easterly direction. Virtually all stocks in western Europe drift in an easterly direction (Dickey-Collas 2005), and the transport and drift of larvae in the southern North Sea (of which the Downs spawning grounds in the eastern Channel is a part) is eastwards towards the juvenile nursery grounds from the Wadden Sea to the Skagerrak and Kattegat (Wallace, 1924; Burd, 1978). This then raises the point that, if larvae are generally drifting eastwards, they cannot be originating from the area of seabed indicated by the Coull et al., (1998) spawning ground, as this is located to the east of where the highest larval abundances are recorded (Figure 3.3).





- 4.2.3 However, Figure 3.3 shows that there are several dense clusters of particle size analysis (PSA) data points indicating preferred and marginal herring spawning sediments located to the north and northwest of the Rampion 2 array, but crucially there is a large cluster of preferred and marginal herring spawning sediments (indicated suitable spawning beds) located between the Rampion 2 array boundary and the areas of high larval density as indicated by IHLS data. Therefore, if larvae are drifting eastwards, it follows that the larval abundances shown in Figure 3.3 originated from these spawning beds where sediments have sufficient composition to support spawning. It should also be noted that the IHLS data presented in Figure 3.3 presents the abundance of larvae less than 11mm in length, which are still likely to have some affinity with their spawning beds. Sediment class data ground-truthed using PSA data, taken alongside aggregated herring larval data remains a more reliable representation of the presence of herring spawning grounds.
- 4.2.4 The Coull *et al.*, (1998) spawning ground shapefiles provide a broad indication of where herring spawning grounds have occurred historically but should not be relied on as the sole indicator of the presence of herring spawning grounds. This is because spawning areas are not rigidly fixed, and fish will not adhere to spawning within the explicit boundaries defined in the shapefile. Further, the data used to inform the shapefiles has not been updated since their production in 1998, meaning that environmental changes in the distribution of spawning sediments and interannual variability in spawning activity is not reflected. The shapefile is also unable to quantify the nuance of how spawning activity varies spatially, for example, over prime spawning ground where sediments are suitable, spawning intensity will be higher, whereas spawning intensity may be lower around the fringes of the spawning ground.
- 4.2.5 It is therefore more appropriate for the location of the active herring spawning grounds to be determined using IHLS data, alongside broadscale and site-specific sediment and PSA data as these data represent direct measures of herring larval presence and abundance, and the presence of suitable spawning sediments, respectively.



4.2.6 The MMO also disagree with the Applicant's statement that "*the identification of potentially suitable spawning habitat conditions does not necessarily equate to those areas actually supporting herring spawning. At some locations where suitable spawning habitat might be indicated by the assessment, notably areas in closer proximity to the Proposed Development, there are no data indicating spawning is occurring*". The Applicant should note that the highest densities of herring larvae are arguably more closely affiliated with the large cluster of preferred and marginal PSA data points. IHLS data, when presented as annual larval abundance maps demonstrates the variability in larval density over the spawning ground both spatially and temporally. As herring do not spawn over the whole spawning ground each year, the relative importance of a particular spawning area to the overall reproductive success of the Downs population will vary between years, and provided suitable habitat is available, lesser used areas of spawning ground can be re-colonised over time (Corten, 1999). It is therefore not appropriate to minimise the importance of areas of seabed where suitable spawning habitat is present, but high larval abundances are not. The MarineSpace (2018) regional baseline assessment is a more accurate heatmap representing the extent of potential herring spawning habitat in the eastern Channel area.

#### **Applicant's Responses to Action Points Arising from ISH2 and CAH1 Rev A (REP4-074)**

##### 4.3 Fisheries comments

- 4.3.1 Action point 12: The MMO thank the Applicant for producing the document Information to support efficacy of noise mitigation / abatement techniques with respect to site conditions at Rampion 2 Offshore Windfarm (REP4-067). MMO comments on this submission are provided in Sections 3.1-3.3 of this Deadline response.
- 4.3.2 Action point 13: The MMO welcome the commitment by the applicant to employ DBBC as the minimum single offshore piling noise mitigation technology. Further comments on this and the other updates made to the In Principle Sensitive Features Mitigation Plan are provided in Sections 2.5-2.6 of this Deadline response.
- 4.3.3 Action point 15: The MMO provided a response to Appendix H of the Applicant's Responses to Examining Authority's First Written Questions (ExQ1) - Appendix H - FS: Noise Thresholds for Black Seabream [REP3- 051] in Paragraphs 5.10-5.11.5 and Table 2 of our Deadline 3 response (REP3-076).
- 4.3.4 Action point 16: The MMO acknowledge the Applicant's submission of the document Without Prejudice Measures of Equivalent Environmental Benefit Review Rev A (REP4-078). The MMO defer to the advice of Natural England as the Statutory Nature Conservation Body on matters relating to protected sites for their assessment of the appropriateness of this document.





#### 4.4 Underwater noise comments

- 4.4.1 Action point 8: The MMO thank the Applicant for updating Table 11-13 in Chapter 11: Marine mammals, Volume 2 of the Environmental Statement and for providing clarification on the worst-case number of monopiles and pin piles.
- 4.4.2 The Applicant has confirmed that the worst-case for the marine mammal assessment for monopiles is simultaneous installation at West and East locations with sequential piling, so 2 monopiles in West location and 2 monopiles in East location (resulting in a total of 4 monopiles). The Applicant has confirmed that the worst-case for the marine mammal assessment for multileg foundations with pin piles is simultaneous installation at West and East locations with sequential piling, so 4 pin piles in the West location and 4 pin piles in the East location (resulting in a total of 8 pin piles).



## 5. MMO Comments on Applicant's Comments on the MMO Deadline 3 & 4 Written Submissions

### Applicant's Comments on Deadline 3 Submissions Rev A (REP4-070)

#### 5.1 Applicant's response to MMO Comments on Applicant's first update to Draft DCO

- 5.1.1 The MMO will not provide any comments on the Applicant's responses to issues pertaining to Article 5 Benefits of the Order of the DCO in this section. MMO comments on the ongoing discussions around Article 5 have been provided above in Section 1.1 of this Deadline response.
- 5.1.2 The MMO acknowledge that the Applicant maintains that the wording of condition 9 in the Deemed Marine License is consistent with previous orders. As discussed by Reuben Taylor KC on behalf of the MMO at ISH2 and stated in Paragraph 1.2.50 of our Deadline 4 response (REP4-088) the MMO strongly feel that the proposed changes are necessary to ensure that the power to amend or vary is consistent with the requirements of the EIA regime as explained in the case of R. (Barker) v Bromley LBC [2007] 1 A.C. 470.
- 5.1.3 With regards to the Applicant's comments (2.6.13), the MMO re-reiterate that Condition 12 (3) needs to be removed in its entirety. The MMO will never unduly delay but cannot be bound by arbitrary deadlines imposed by the Applicant since this would potentially prejudice other licence applications by offering expediency to the Applicant at the expense of other applications. The Applicant has highlighted the MMOs Key Performance Indicator (KPI) of responding to submissions within 13 weeks, however the Applicant has not acknowledged that the MMO KPI is to respond to **90%** of submissions within 13 weeks. The MMO is not bound to respond to all applications within 13 weeks, and the 13 week KPI is a cross-governmental timeframe and not stated within the Marine and Coastal Access Act (2009) (MCAA). MCAA does not define a specific timeframe for the determination of marine licences, and the KPI of 90% is important as it gives the MMO flexibility to respond appropriately to complex applications that require additional consultation/stakeholder engagement.

For the reasons stated above, the MMO request again that this condition be removed from the DML. The MMO is the competent authority for Marine Licensing and will not be bound by arbitrary deadlines imposed by the Applicant.

However, In the absence of a removal of this Condition, the suggested wording can be found in Table 1 of this response.

#### 5.2 Applicant's response to MMO Comments on Applicant's first update to the Statements of Commonality of Statements of Common Ground

- 5.2.1 The MMO acknowledge the Applicant's reasoning that the significance of ongoing discussions should not impact the categorisation of topics in the Statement of Commonality of Statements of Common Ground (SoCG) as defined by the Applicant's prescribed methodology.



- 5.2.2 The MMO would raise the point however, that our stated disagreements with the Applicant's categorisation of subject areas and our reference to "significance of existing MMO concerns" does not refer to our perceived significance of the issues being discussed, but rather the extent of the ongoing disagreements.
- 5.2.3 The MMO acknowledge the submission by the applicant of a revised SoCG at Deadline 4 (REP4-059) and has provided comments on this document above in Section 2.4 of this Deadline response.

### 5.3 Applicant's response to MMO Comments on Applicant's Submission received at Deadline 1

#### **In Principle Sensitive Features Mitigation Plan, Revision B (REP1 – 012)**

##### 5.4 Benthic comments

- 5.4.1 The MMO welcome the Applicant's commitment to utilise both side scan sonar and multibeam echosounder methods to identify suitable sites to deploy a drop-down video camera and confirm the presence of sensitive benthic features.
- 5.4.2 The MMO welcome the Applicant's new approach to post-construction monitoring whereby they will consult with the MMO and its specialist advisors regarding details of any required post-construction monitoring following review of the pre-construction monitoring data.

##### 5.5 Fisheries comments

- 5.5.1 The MMO acknowledge the Applicant's comments and the updates provided to this document at Deadline 4. MMO comments on the Applicant's noise abatement and noise mitigation proposals in regard to black sea bream and herring have been covered in our responses to the updated In Principle Sensitive Features Mitigation Plan Rev D (REP4-054) and Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062) provided in Section 2.6 and 2.14 respectively of this Deadline response.

##### 5.6 Underwater noise comments

- 5.6.1 The MMO thank the Applicant for addressing comments raised in our Deadline 3 response and for the updates provided to this document at Deadline 4. Ongoing issues relating to underwater noise monitoring and impacts to sensitive features are addressed in our comments on the updated In Principle Sensitive Features Mitigation Plan Rev D (REP4-054) and Offshore In Principle Monitoring Plan Rev C (REP4-056) provided in Section 2.7 and 2.10 respectively of this Deadline response.



## **Further information for Action Points 38 and 39 – Underwater Noise (REP1- 020)**

5.8 The MMO acknowledge the updates provided to this document at Deadline 4. MMO comments on the Applicant's noise abatement and noise mitigation proposals in regard to black sea bream and herring have been covered in our responses to the updated Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062) provided in Section 2.14 and 2.15 of this Deadline response

## **MMO Response to Applicant's comments on MMO Relevant Representations (REP1-017)**

### 5.8 Benthic comments

5.8.1 The MMO acknowledge the Applicant's comments and the changes to the document Environmental Statement Volume 2 Chapter 9 Benthic, subtidal and intertidal ecology Rev B (REP4-019) provided at Deadline 4. Due to the large volume of documents submitted at Deadline 4 requiring consultation with Cefas, the MMO have not been able to review this document. Any comments we have will be included in our Deadline 6 response.

### 5.9 Fisheries comments

5.9.1 The MMO is content with the commitment that no works will take place within the export cable corridor during the spawning and nesting season for black sea bream (1st March to 31st July, inclusive).

5.9.2 The MMO acknowledge the updates made to the In Principle Sensitive Features Mitigation Plan Rev D (REP4-054) and Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062) provided at Deadline 4. MMO comments on these submissions have been covered in Section 2.6 and 2.14 respectively of this Deadline response.

### 5.10 Underwater noise comments

5.10.1 The MMO thank the Applicant for acknowledging previous MMO comments and has no further comments to make at this time.

## Applicant's response to MMO Comments on Applicant's Submission received at Deadline 2

### **Marine Plan and Policies Statement (REP2-027)**

5.11 The MMO thank the Applicant for acknowledging the comments made in relation to this document and for providing a revised revision submitted at Deadline 4 (REP4-068). MMO comments on REP4-068 can be found above in Section 2.3 of this Deadline response.





## Applicant's Response to Stakeholder's Replies to Examining Authority Written Questions Rev A (REP4-079)

### 5.12 Fisheries comments

- 5.12.1 FS 1.4: The MMO acknowledge that there is yet to be an agreement between interested parties and the Applicant over an agreed suitable behavioural threshold for black sea bream. The MMO continues to reject the 141 dB SELs proposed by the Applicant and maintains that 135dB SELs as per Hawkins *et al.*, (2014) should be used as a more appropriate behavioural threshold for Black Sea Bream. However, the MMO reiterates that an agreed threshold/resolution between interested would be the best outcome.
- 5.12.2 FS 1.9: Detailed MMO comments on the Applicant's background noise studies are addressed in Table 3 of our Deadline 4 response (REP4-088).
- 5.12.3 FS 1.10: The MMO have commented several times on the potential impacts of this project on black sea bream. Our most recent comments on this issue can be found in our review of the updated In Principle Sensitive Features Mitigation Plan Rev D (REP4-054) provided in Sections 2.5-2.6 of this Deadline response.
- 5.12.4 FS 1.20: The MMO have commented on the Applicant's most recent assessments of sandeel habitat suitability and 'heat' maps in our comments on the Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062) provided in Section 2.14 and 2.15 of this Deadline response.
- 5.12.5 FS 1.21 & 1.22: The MMO have commented on the Applicant's most recent assessments of herring habitat suitability and 'heat' maps in our comments on the Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062) provided in Section 2.14 and 2.15 of this Deadline response.
- 5.12.6 FS 1.24 & FS 1.25: The MMO acknowledge the Applicant's provision of updated underwater noise modelling to predict the range of effect for behavioural responses in spawning herring at the spawning ground using the 135 dB SELs threshold. The MMO have commented on this new modelling in our comments on the Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062) provided in Section 2.14 and 2.15 of this Deadline response.



## 6. MMO Response to Examining Authority’s (ExA) Second Written Questions (ExQ2)

The MMO have provided answers to the ExA’s questions (18<sup>th</sup> June 2024) in the table below

**Table 2 – MMO Response to Examining Authorities Second Written Questions**

Reference	Question	MMO Response
DCO	Draft Development Consent Order (Draft DCO) and Draft Deemed Marine Licence (Draft DML)	
DCO 2.1  <i>Article 5, Schedules 11 and 12, paragraph 7</i>	<p><b>The Applicant / Marine Management Organisation</b></p> <p>The ExA has, alongside these Further Written Questions, published its suggested changes to the draft Development Consent Order [REP4-006]. For Article 5, the ExA has suggested alterations to Articles 5(2), 5(3), 5(6) and 5(8) which we consider has addressed the concerns of the Marine Management Organisation (MMO) in its submissions at Deadline 4 [REP4-088]. Review and confirm.</p>	<p>The MMO maintain its in principle objection to the power to transfer the DMLs and consider that the existing statutory process should be retained for the reasons set out in [REP4 088]. Without prejudice to that position, the MMO set out below its position in relation to the drafting changes to Article 5 suggested by the Examining Authority.</p> <p>The Examining Authority’s proposed changes in relation to the inclusion of express words to exclude the DMLs are supported. This reflects the DCO granted in respect of the Sheringham Order. This amendment addresses the concern regarding overlap between the powers in draft Articles 5(2) and 5(3).</p> <p>The Examining Authority’s proposed changes within Article 5 to remove reference to the word “<i>grant</i>” and to replace this with “<i>transfer</i>” is supported. This would address the MMO’s concerns regarding the uncertainty as to the extent of the powers in the DCO that would be created by the use of the word “<i>grant</i>”.</p> <p>The Examining Authority’s proposed changes to Article 5(3)(a) and (b) to include reference to the “<i>deemed marine licences granted under Schedules 11 and 12 of this Order</i>” is supported as this clarifies that the Undertaker could only transfer that which is granted by the DCO.</p> <p>The Examining Authority’s proposed amendments to Article 5(6) which would result in the Secretary of State being required to have regard to any representations before agreeing to the transfer of a DML are supported. However, this serves to reinforce that the draft DCO creates a more cumbersome and likely longer administrative process</p>

than the existing statutory process for transfers of a DML. Accordingly, the MMO refers the Examining Authority again to its in-principle objection to Article 5 in [REP-088].

The Examining Authority's proposed amendments to Article 5(8) are not understood. Article 5(8) sets out categories of exceptions whereby the consent of the Secretary of State to the transfer of a DML would not be required. In essence, the DML can be transferred by the Undertaker if an exception applies.

The Examining Authority has recognised in its Schedule of recommended amendments to the Applicant's draft DCO Submitted at Deadline 4 (D4) [REP4-004], at Entry 6 that this may allow for a transfer to a party which may not be a responsible holder of a deemed marine licence.

The wording of the amendment proposed via the insertion of Article 5(8) (d) is insufficient to achieve the Examining Authority's objective since it is not clear that the exceptions in 5(8)(a), (b) and (c) can only be relied upon where the MMO has been consulted and raised no objection. As draft, paragraph (d) reads as if it is another exception rather than operating as a proviso on paragraphs (a), (b) and (c).

If Paragraph 5(8) is to remain then the MMO respectfully suggests that the Examining Authority's objective is better achieved with the following wording (in bold and underlined):

*“(8) The consent of the Secretary of State is required for the exercise of powers under subparagraphs (2) or (3) except where **the MMO has been consulted and has raised no objection and** —*

*(a) the transferee or lessee is the holder of a licence under section 6 of the 1989 Act (licences authorising supply etc.); or*

*(b) the transferee or lessee is a holding company or subsidiary of the undertaker; or*

*(c) the time limits for claims for compensation in respect of the acquisition of land or effects upon land under this Order have elapsed and—*

*(i) no such claims have been made,*

*(ii) any such claim has been made and has been compromised or withdrawn,*

*(iii) compensation has been paid in final settlement of any such claim,*

		<p><i>(iv) payment of compensation into court has taken place in lieu of settlement of any such claim, or</i>  <i>(v) it has been determined by a tribunal or court of competent jurisdiction in respect of any such claim that no compensation is payable.”</i></p> <p>Without prejudice to its more general objection to Article 5, this amendment would be supported by the MMO.</p> <p>There are a number of matters of detailed drafting which have not been addressed by the Applicant or in the Examining Authority’s suggested changes which are set out in REP4-088. The MMO maintains these points which include:</p> <ul style="list-style-type: none"> <li>(a) The existing statutory transfer procedure is to be preferred and should be retained.</li> <li>(b) Article 5(3)(b) even if changed as suggested by the Examining Authority, still provides for the transfer of a DML for a period of time, but does not provide for any administrative mechanisms to ensure that there is a transfer back to the Undertaker at the end of the relevant period. Such a power was not granted in the Sheringham Order. The MMO has provided wording in REP-088 which should be used in the event that a power to transfer for a limited period is considered justified.</li> <li>(c) There is no power for the MMO to amend the DML it holds in its records in the event of a transfer. The MMO has provided wording in REP-088 which should be used in the event that a power to transfer for a limited period of time is considered justified.</li> </ul>
<p>DCO 2.4 <i>Remaining Comments</i></p>	<p><b>All Relevant Planning Authorities / Natural England / Marine Management Organisation</b></p> <p>Aside from the matters discussed above, the changes set out in the ExA’s Schedule of Changes to the Draft DCO and matters concerning Articles 11(7), 12(3), 15(5), 17(9) and 19(7) in respect to the 28-day provision and deemed consent, provide, if necessary,</p>	<p>The MMO have reviewed these schedules and can confirm that these provisions are not relevant for the MMO. As such, the MMO have no further comments to make at this time.</p>



	<p>a summary of any remaining concerns with the draft DCO and draft DML and any suggested drafting changes. [N.B – although primarily addressed to the Applicant, all relevant parties may respond to the ExA’s Scheduled of Changes to the draft DCO should they feel it necessary to do so.]</p>	
FS	Fish and Shellfish	
<p>FS 2.4 <i>Noise Effects on Herring</i></p>	<p><b>Marine Management Organisation / Sussex Inshore Fisheries and Conservation Authority (IFCA)</b></p> <p>The Applicant noted that with the implementation of DBBC, which is now committed to within the Commitment Register [REP4-057, C-265] means that when using the 135dB behavioural noise threshold throughout the piling campaign this would successfully mitigate against impacts to spawning herring, with underwater noise impact ranges reduced such that there is no overlap with areas of key importance to spawning herring [REP4-053, Paragraph 5.3.3].</p> <p>This was also presented in Figures 3.5 to 3.8 in Applicant's Post Hearing Submission – Issue Specific Hearing 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise (updated at Deadline 4) [REP4-061].</p> <p>Consider whether the noise reduction of 15db from the use of a DBBC is reasonable, and if so, respond on whether there would be no adverse effects to herring if this form of mitigation was used as now proposed.</p>	<p>At Deadline 4 the Applicant presented updated UWN modelling in relation to the range of effect for temporary threshold shift (TTS) in adult herring from piling noise mitigated with a 15 dB noise abatement reduction achieved using a DBBC. Figures 4.1 and 4.2 presented in REP4-062 (<i>Applicant's Post Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B</i>) showed that the overlap of the range of effect of TTS from mitigated simultaneous piling of multileg and monopile foundations, based on a 15 dB noise abatement reduction, seems to have been greatly reduced compared to the range of effect of TTS for unmitigated piling. These mitigated contours are encouraging as the range of effect for TTS, based on a 15 dB noise abatement reduction, now appears to remain within the DCO boundary where herring larval densities are lower (0.1 – 2,500 per m<sup>2</sup>).</p> <p>The Applicant also presented updated modelling of the range of behavioural effects in adult herring engaged in spawning. Modelling for behavioural effects (based on the unweighted SELss 135dB as per Hawkins <i>et al.</i> (2014)) from sequential mono- and multileg piling mitigated with a 15 dB noise abatement reduction, presented in Figures 4.5 and 4.6, shows a reduced range of impact with the mitigated noise contours overlapping with areas of slightly lower larval densities (23,000 – 48,000 per m<sup>2</sup>) than the unmitigated noise contours. Taking the area where high larval densities occur (&gt;35,000-48,000) to represent suitable herring spawning habitat where herring are engaged in spawning activity (in lieu of an adequate potential spawning habitat heatmap and recognising the limitations of the Coull <i>et al.</i>, (1998) spawning ground shapefile; (as detailed in Section 2.14 of this Deadline response) the reduced range of impact may be acceptable.</p> <p>It should be noted that this does not mean that the risk of behavioural effects in adult spawning herring has been completely removed with the implementation of a 15 dB</p>

		<p>noise abatement reduction based on a DBBC, as the mitigated behavioural effect contours still overlap with areas of medium larval densities (23,000 – 48,000 per m<sup>2</sup>). However, the mitigated behavioural effect contours represent that the risk of behavioural response in adult spawning herring can potentially be reduced to an acceptable level. Overlap of the mitigated behavioural effect contours in Figures 4.5 and 4.6 with areas of high larval abundance (&gt;48,000 per m<sup>2</sup>) appears sufficiently reduced with a 15 dB noise abatement reduction that the areas of highest potential spawning habitat are now outside of the range of impact, meaning that, in theory, it will be possible for adult herring to migrate to and aggregate over most of their spawning grounds without experiencing significant disturbance from piling noise. The modelling presented in Figures 4.1, 4.2, 4.5 and 4.6 reduces MMO concerns as to the level of disturbance that adult herring, and herring eggs and larvae will be subject to, although it should be noted that these concerns are only reduced on the basis that the Applicant can achieve a 15 dB noise abatement reduction in line with what has been modelled in Figures 4.1, 4.2, 4.5 and 4.6. Providing the Applicant can achieve and commit to a reduction of 15 dB using a DBBC and based on the modelling of TTS and behavioural effect ranges presented in Figures 4.1, 4.2, 4.5 and 4.6, it may be possible for our recommendation of a piling restriction during the herring spawning season to be amended so that some piling may be carried out during the herring spawning season.</p> <p>However, the MMO are cautious to accept these mitigated contours as final as the Applicant has presented a number of modelling scenarios which have included contours with differing levels of noise abatement reductions applied (ranging from -6 dB to -25 dB). It should also be noted that there is uncertainty as to whether a 15 dB noise reduction can be achieved in water depths greater than 40m (As detailed Section 2.14 and 3.3 of this Deadline response)</p> <p>The Applicant's Deadline 4 submission REP4-067 (<i>ITAP - Information to support efficacy of noise mitigation abatement techniques with respect to site conditions at Rampion 2 Offshore Windfarm Rev A</i>) stated that the achievable overall noise reduction of any noise abatement system might be slightly decreased by 1-2 dB in water depths &gt; 40m. This represents a source of uncertainty as to whether a 15 dB noise reduction is achievable across the Rampion 2 site. It has been requested in our review of this document at Deadline 5, that the Applicant should clarify what proportion of the site (including the number of turbines) occurs in areas where water depth is</p>
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		<p>greater than 40m. The report stated a decrease in the noise reduction achievable by a DBBC in waters deeper than 40m could be up to 2 dB, however we have not seen UWN modelling to indicate how much of the herring spawning ground would be overlapped by mitigated UWN contours for TTS and behavioural effects which have a noise reduction of the 13 dB rather than the 15 dB reduction presented thus far.</p> <p>The Applicant should clarify that a minimum reduction of 15 dB, using a DBBC or other technology, is achievable across the site in order to demonstrate that UWN at a level likely to cause TTS and behavioural effects in adult spawning herring will not significantly overlap the herring spawning ground (i.e., that the noise abatement reduction modelled in Figures 4.1, 4.2, 4.5 and 4.6 (REP4-062) is realistic and achievable in areas of the array where water depths exceed 40m). In line with fisheries comments provided in this Deadline response, depending on how many piles the Applicant intends to install in waters deeper than 40m, it may be possible to amend our recommendation from a full seasonal piling restriction, to a <b>recommendation that no piling, with or without mitigation, should be carried out in waters deeper than 40m during the herring spawning season due to uncertainty in the achievability of a 15 dB noise abatement reduction in water depths greater than 40m.</b> However, any amendment of our recommendation is dependent upon the Applicant providing the clarifications requested.</p>
<p>FS 2.6 <i>Drifting Herring Eggs and Larvae</i></p>	<p><b>Marine Management Organisation</b></p> <p>The Applicant “<i>confirmed that eggs and larvae are subject to drifting due to the strong hydrodynamic conditions in the English Channel, and that it was confident that spawning activities are occurring in the spawning ground as defined by Coull et al (1998), as opposed to areas where high densities of eggs and larvae are present (as identified by IHLS data), as eggs and larvae will be drifting away from the defined spawning ground.</i>” [REP4-072, Ref 3b]</p>	<p>The MMO do not agree that the Coull <i>et al.</i>, (1998) spawning ground represents the best data by which current, active herring spawning grounds should be defined. The Coull <i>et al.</i>, (1998) spawning ground shapefiles provide a broad indication of where herring spawning grounds have occurred historically, but should not be relied on as the sole indicator of the presence of herring spawning grounds. Coull <i>et al.</i> (1998) acknowledges that ‘<i>spawning distributions are under continual revision. It therefore follows that these maps should not be seen as rigid, unchanging descriptions of presence or absence</i>’ and Ellis <i>et al.</i> (2012) highlighted that further ichthyoplankton surveys have been have carried out since the Coull <i>et al.</i> (1998) maps were produced, and states that ‘<i>using the maps in isolation may result in misrepresentations of the data</i>’. This is because spawning areas are not rigidly fixed, and fish will not adhere to spawning within the explicit boundaries defined in the shapefile. Further, the data used to inform the Coull <i>et al.</i>, (1998) shapefiles has not been updated since their production in 1998, meaning that environmental changes in the distribution of spawning</p>

	<p>Comment on whether MMO agrees that this suggests that the main spawning ground is as defined by Coull et al (1998) and not closer to the array areas.</p>	<p>sediments and interannual variability in spawning activity is not reflected. The shapefile is also unable to quantify the nuance of how spawning activity varies spatially, for example, over prime spawning ground where sediments are suitable, spawning intensity will be higher, whereas spawning intensity may be lower around the fringes of the spawning ground.</p> <p>A more robust means of identifying areas of seabed with high potential to support herring spawning would be to produce a 'heat' map following the methodologies described by Reach <i>et al.</i>, (2013) and MarineSpace (2013), (noting that an updated methodology has also been published, as per Kyle-Henney <i>et al.</i>, (2023)). This approach uses a suite of current and relevant data, including International Herring Larval Survey (IHLS) data, broadscale seabed sediment data, particle size analysis (PSA) data as well as fishing fleet data and other data sources, which are methodically layered and scored to generate a single 'heatmap' output. Simply put, areas of higher 'heat' are representative of areas with higher potential herring spawning habitat, or potential sandeel habitat, respectively. The Applicant provided a 'heatmap' of potential herring spawning habitat at Deadline 2 which was not consistent with the methodologies of Reach <i>et al.</i>, (2013) and MarineSpace (2013). An amended 'heatmap' was then provided at Deadline 3 however, there remain a number of issues with the Applicant's updated potential herring spawning habitat 'heatmap' and clarification is needed on the data which has been incorporated.</p> <p>In lieu of an appropriately formulated 'heatmap', the most appropriate data from which the location of the active herring spawning grounds should be derived are IHLS data (amalgamated over an appropriately long 10-year timeseries), alongside broadscale sediment data and site-specific PSA data. These data represent direct measures of herring larval presence and abundance, as well as the presence of suitable spawning sediments, respectively. This has been outlined in our response to the updated Applicant's Post Hearing Submission – ISH 1 Appendix 9 - Further information for Action Points 38 and 39 – Underwater Noise Rev B (REP4-062) provided in Section 2.14 of this Deadline response.</p> <p>With respect to herring larval drift, the MMO also disagree with the statement that "<i>spawning activities are occurring in the spawning ground as defined by Coull et al (1998), as opposed to areas where high densities of eggs and larvae are present (as</i></p>
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*identified by IHLS data), as eggs and larvae will be drifting away from the defined spawning ground".* This statement is not entirely accurate. According to Heath & Rankine (1988) herring larvae can drift up to 9km a day, and post-larval Isaacs-Kidd Midwater Trawl (MIK) net survey data carried out during International Bottom Trawl Surveys (IBTS) show that larvae generally move in an easterly direction<sup>1</sup>. Virtually all stocks in western Europe drift in an easterly direction (Dickey-Collas, 2005), and the transport and drift of larvae in the southern North Sea (of which the Downs spawning grounds in the eastern Channel is a part) is eastwards towards the juvenile nursery grounds from the Wadden Sea to the Skagerrak and Kattegat (Wallace, 1924; Burd, 1978). This then raises the point that, if larvae are generally drifting eastwards, they cannot be originating from the area of seabed indicated by the Coull *et al.*, (1998) spawning ground, as this is located to the east of where the highest larval abundances are recorded (Figure 3.3 - REP4-062).

Figure 3.3, shows that there are several dense clusters of PSA data points indicating preferred and marginal herring spawning sediments located to the north and northwest of the Rampion 2 array, but importantly there is a very large cluster of PSA data points showing preferred and marginal herring spawning sediments (indicating suitable spawning beds) located between the Rampion 2 array boundary and the areas of high larval density as indicated by IHLS data. If the larvae presented in Figure 3.3 had originated from the area of seabed indicated by the Coull *et al.*, (1998) spawning ground and drifted eastwards, then we would expect to see areas of medium and high larval abundance located closer to the Dover straight, however that is not the case. Therefore, as larvae are drifting eastwards, it follows that the larval abundances shown in Figure 3.3 originated from the spawning beds where sediments have sufficient composition to support spawning, as indicated by the PSA data. It should also be noted that the IHLS data presented in Figure 3.3 presents the abundance of larvae less than 11mm in length, which are still likely to have some affinity with their spawning beds.

As outlined above, sediment class data which have been ground-truthed using PSA data, taken alongside aggregated herring larval data remains a more reliable representation of the presence of herring spawning grounds than the Coull *et al.*, (1998) spawning ground taken alone.

<p>FS 2.8</p> <p><i>Noise Modelling Locations</i></p>	<p><b>Natural England / Marine Management Organisation</b></p> <p>The Applicant has provided an explanation as to their chosen noise modelling locations for their Eastern point and North West point [REP4-074, PINS Ref: 9]. Respond, if required, on the choice of the modelling locations given the Applicant's explanations.</p>	<p>The MMO and our scientific advisors do not have concerns regarding the modelling locations presented by the Applicant. As per the underwater noise assessment conducted for Rampion 2, presented in APP-149 (<i>Appendix 11.3 Underwater noise assessment technical report</i>). In this report modelling was undertaken at four representative locations (West, North East, East and South) covering various water depths at the site, as shown on Figure 3.2. It has been confirmed that the Applicant's worst-case scenario for piling is simultaneous installation at the West and East locations. Maximum separation between the piles will likely lead to the greatest risk of disturbance.</p> <p>However, with regard to modelling the range of UWN impacts in relation to sensitive receptors, including black sea bream at the Kingmere MCZ, the modelling locations will unavoidably influence the degree of overlap of UWN contours with the protected site. Figure 5.16 (REP4-054) shows that even with a 15 dB reduction from the DBBC there would still be an overlap of noise disturbance with Kingmere MCZ when piling at the western modelled location, and a slight overlap of noise disturbance with Kingmere MCZ when piling at the eastern modelled location. A similar result is shown in Figure 5.17 (REP4-054) for multileg foundation piling, with an overlap of noise disturbance with the Kingmere MCZ when piling at the western modelled location. For multileg foundation piling at the eastern modelled location there is no direct overlap of noise disturbance with Kingmere MCZ, however, the mapped noise contour suggests that noise disturbance effects would still be received &lt;1 km from the Kingmere MCZ boundary. Given that the modelling for monopiles and multileg foundations has been based on locations at the eastern and western boundaries of the array, I would anticipate that any modelling for piling at locations situated inwards of these points (i.e. closer to Kingmere MCZ) would likely show an even greater overlap of noise contours with Kingmere MCZ, i.e. the extent of noise will likely cover a larger portion of Kingmere MCZ potentially leading to increased risk of disturbance to breeding black sea bream. The modelling presented in Figures 5.16 and 5.17 demonstrates that the Applicant's zoning plan is not feasible and therefore it will not be possible to pile during the black sea bream spawning and nesting season. There is only one small area of the array that is shown to be unaffected by noise in Figure 5.17, however, as already highlighted, if the position of the modelled location was moved further east, i.e. towards the middle</p>
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		<p>of the array, then I would expect this small unaffected area would not be present if modelling on that scenario was presented.</p> <p>Figures 5.16 and 5.17 also demonstrate how much of the surrounding area will also be affected by UWN caused by piling activities during the sensitive black sea bream breeding season. As has been highlighted throughout our previous advice, UWN from piling activities has the potential to not only disturb black sea bream whilst nesting, but also disrupt the migration of black sea bream potentially preventing them from reaching their spawning and nesting sites, as well as potentially causing physical/physiological responses in fish close to the sound source (such as temporary threshold shift (TTS) or injury) which may in turn affect their reproductive success. It should also be noted that there are black sea bream nesting sites present within the Rampion 2 export cable corridor (as recognised by the Applicant in the ES), and in the surrounding area outside of the Kingmere MCZ, which would be as affected by piling noise as black sea bream located within the MCZ. Regardless of the threshold that the modelling is based on and the location at which the modelling originates, <b>we maintain the Applicant’s zoning plan offers inadequate protection to black seabream nesting in the areas outside of the Kingmere MCZ or those nesting within the projects export cable corridor during the spawning and nesting season.</b></p>
<p>FS 2.9</p> <p>Noise Abatement Systems</p>	<p><b>The Applicant / Natural England / Marine Management Organisation</b></p> <p>In the submitted document “Information to support efficacy of noise mitigation / abatement techniques with respect to site conditions at Rampion 2 Offshore Windfarm” [REP4-067, Page 7] states that in water depths of over 40m it is known that achievable noise reduction decreases slightly with increasing water depth, for big bubble curtains.</p> <p>Explain whether this undermines the 15db reduction used in the modelling for Double Big Bubble Curtains?</p>	<p>The ITAP report REP4-067 (<i>ITAP - Information to support efficacy of noise mitigation / abatement techniques with respect to site conditions at Rampion 2 Offshore Windfarm</i>) highlights that in the case of applying one noise abatement system (which is site and project specifically optimised, such as an optimised double Big Bubble Curtain (BBC), an overall noise reduction of 15 dB is achievable and likely until 40 m water depth. A combination of near field and far field noise abatement systems (such as a Royal IHC Noise Mitigation System (NMS)) and Double BBC) can reduce the overall noise by 20 dB (possibly 22 dB) in depths of up to 40m.</p> <p>It is our understanding that as water depth increases, bubble curtains can become less effective due to dispersion of the bubbles. It is acknowledged that water depths vary at the Rampion 2 site (with depths &gt; 50 m in parts), and so there are a number of uncertainties that remain. The report makes clear that no empirical evaluation of the achievable overall noise reduction by any BBC system in water depths of &gt; 40 m is currently available.</p>

		<p>The report notes that based on past experience, the effectiveness of any BBC system will decrease by 1 dB (unlikely 2 dB) in 50m water depth compared to 40m. The application of an enhanced BBC as an inner ring in combination with a normal BBC as an outer ring would be expected to compensate or minimise the effect of the increased water depth. This statement is unclear, as it appears to describe a double BBC, which is what the 15 dB noise reduction estimate is based on. It would be helpful if further clarity could please be provided.</p> <p>In the absence of more specific evidence on efficacy at 50 m depth, and given the available evidence for other depths, the MMO are generally content with the estimate of 15 dB reduction for double BBC at 50 m depth, acknowledging that there is some uncertainty around this. To compensate for this uncertainty in noise reduction at 50m, we propose that an enhanced monitoring programme be put in place that an enhanced monitoring programme be put in place. This monitoring programme <b>should include obtaining measurements of the first eight piles (or eight of the first 12 piles), of each foundation type, to be installed.</b> This is more than is typically required (the standard requirement is the first four piles of each foundation type) but given the uncertainties and the need for monitoring data at these depths, we think this would be justified. The monitoring data / reports would <u>need to be submitted to the MMO in a timely manner</u>, to ensure that the measured noise levels are not exceeding the modelled predictions. The data gathered would provide valuable evidence on how effective NAS (such as a double BBC) are in deeper waters, particularly for depths greater than 40-45 m, providing a more extensive corroboration of the developer's noise reduction predictions and reducing uncertainty in future consents.</p>
BP	Benthic, Coastal and Offshore Processes	
BP 2.1 <i>Removable Cable Protection</i>	<p><b>Natural England / Marine Management Organisation</b></p> <p>In relation to suggestions about the use of rock bags for cable protection, the Applicant stated [REP4-072, Ref 3c] that this could create issues with plastics, especially if they were left in situ for circa 30 years.</p>	<p>Yes, the issue of plastic release from rock bag cable protection is a shared concern as their use over the lifetime of the project may negatively affect benthic invertebrates (Porter <i>et al.</i>, 2023).</p> <p>Polyethylene terephthalate (PET) is used in rock bags deployed as scour and cable protection (e.g., Kyowa Co. Ltd Rockbags® have been deployed at the Teeside Offshore Windfarm) and has been shown to degrade in the marine environment into microplastic fragments (Sand <i>et al.</i>, 2020). Recent research has shown that microplastics (antifouling paint particles) fundamentally alter sediment microbial communities (Tagg <i>et al.</i>, 2024). The impact of microplastics on benthic invertebrates</p>



	<p>Explain whether this is a concern that is shared due to the possible release of plastics if rock bags are to be used for any necessary cable protection.</p>	<p>varies depending on their life history and may not directly relate to microplastic burden as species traits and feeding ecology may favour the avoidance or tendency of microplastic ingestion (Porter et al., 2023).</p> <p>Endeavours to understand the abundance of microplastics in surficial sediments around the UK is in its infancy (Kukkola et al., 2022) and there remain large areas of seabed with little information.</p> <p>A potential benefit of using rock bags for cable and scour protection may be realised at the decommissioning phase of the Project as it is considered easier to fully remove rock bags from the marine environment and decommissioning rock bags may cause less impact to surrounding sediments than the removal of other scour and cable protection (e.g., free rock). Should rock bags be used at Rampion 2 Offshore Windfarm, the MMO recommend that an assessment of sediment bound microplastics is conducted pre-installation so that the abundance of microplastics can be assessed over the lifetime of the Project.</p> <p>However, the MMO would typically advocate for the use of 'native' rock (i.e., substrate like local, naturally occurring sediment) as a protection measure, when possible, as this would not necessarily require removal at the decommissioning stage. Native rock would likely become indistinguishable from the surrounding habitats over the lifetime of the Project and its colonisation by a more natural benthic assemblage would ensure comparative ecosystem function.</p>
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## 7. MMO Comments on the ExA's suggested changes to DCO Rev D (REP 4-006)

7.1 The MMO have provided comments on the ExA's draft DCO Schedule of Changes, and these can be found in Table 2.

## 8. Remaining DCO/DML comments not agreed with applicant

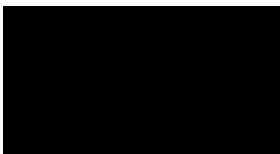
### 8.1 Summary of Position

The MMO and the applicant are not in agreement with the following topics:

- Article 5
- Part 1, Section (7) of Schedules 11 and 12 relating to Article 5 and the Benefits of the order.
- The wording of several conditions within Schedules 11 and 12.
- Clarification on the need for the inclusion of Condition 10(1) of Schedules 11 and 12.
- The removal of Condition 12(3) of Schedules 11 and 12.

The MMO have provided a detailed summary of our outstanding concerns relating to the DCO in Section 1 of this response.

Yours faithfully



Ethan Lakeman  
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P [REDACTED]



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