

# MONA OFFSHORE WIND PROJECT

## Applicant's Responses to NRW (A)

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Image of an offshore wind farm

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**Document status**

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**Prepared by:**

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**Prepared for:**

**Mona Offshore Wind Ltd.**

# 1 The Applicant's Responses to NRW (A)

## 1.1 Introduction

1.1.1.1 On 21 May 2024, the application by Mona Offshore Wind Limited (the Applicant) for a standalone Natural Resources Wales (NRW) Marine Licence was submitted to the NRW Marine Licensing Team (NRW MLT). Following the initial submission of documents, NRW Advisory (NRW (A)) submitted their comments on the application. This document presents the Applicant's responses to NRW (A).

## 1.2 Applicant's response to NRW Advisory

Table 1.1: Applicant's Response to NRW Advisory.

Ref. No.	Comment	Response
1	<p>1. Marine Ornithology</p> <p>1.1 Main Matters</p> <p>Key impacts from the proposal will be from disturbance/displacement from vessel activity on the red-throated diver (RTD) and common scoter overwintering features of the Liverpool Bay/Bae Lerpwl Special Protection Area (SPA)</p>	The Applicant notes NRW(A)'s comment.
2	<p>We advise that adherence to an offshore Environmental Management Plan (EMP) that will include measures to minimise disturbance to rafting birds from transiting vessels, a timing restriction of no offshore export cable installation during the period 1st November – 31st March within Liverpool Bay SPA and inclusion of a Marine Pollution Contingency Plan (MPCP) is required in order to avoid or reduce disturbance and displacement to the RTD and common scoter features of Liverpool Bay SPA.</p>	The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that a Project Environmental and Management Plan (PEMP) will be secured in the standalone NRW Marine Licence as identified in the Marine Licence Principles document (J9 F04), which is to include the Measures to Minimise Disturbance to Marine Mammals and Rafting Birds (J17 F02). As set out in that document it is anticipated that a restriction on working from 1 November to 31 March within the Liverpool Bay/Bae Lerpwl SPA will therefore be delivered and secured as indicated in the Mitigation and Monitoring Schedule (J10 F04) and the Marine Licence Principles document (J9 F04).
3	<p>The EMP and the specific measures to be contained within it will need to be secured in the marine licence.</p>	The Applicant notes NRW (A)'s comment.
4	<p>1.2 General Comments</p> <p>In our view, the potential impacts from the proposed works covered by this Marine Licence for the transmission assets for the Mona Offshore Wind Project are limited to disturbance/displacement of the RTD and common scoter non-breeding qualifying features of the Liverpool Bay/Bae Lerpwl SPA resulting from vessel activity within the SPA.</p>	The Applicant notes NRW (A)'s comment. The Applicant confirms that the impacts of disturbance and displacement from the presence of vessels have been assessed for red-throated diver and common scoter in the Mona Offshore Cable Corridor and Access Areas, which overlap with the Liverpool Bay/Bae Lerpwl SPA. The results of the assessments and conclusions are presented in section 5.7.2 of Volume 2, Chapter 5: Offshore ornithology (F2.5 F03). The assessment concluded a minor adverse effect (not significant in EIA (Environmental Impact Assessment)) terms) during construction and a negligible effect during operation (not significant in EIA terms) for both red-throated diver and common scoter.
5	<p>1.3 Detailed Comments</p> <p>1.3.1 Conservation of Habitats and Species Regulations 2017 (Reg 63):</p>	The Applicant notes NRW (A)'s comment. The Applicant confirms that the impacts of disturbance and displacement from presence of vessels have been assessed for red-throated diver and common scoter in the Mona Offshore Cable Corridor and Access Areas which overlap with the Liverpool Bay/Bae Lerpwl SPA. The

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Ref. No.	Comment	Response
	<p>Liverpool Bay SPA</p> <p>1.3.1.1 Significant effects / Adverse effects:</p> <p>The proposed Mona array is located 10km from the Liverpool Bay SPA, but the offshore export cable route goes through the SPA. Red-throated diver (RTD) and common scoter are features of Liverpool Bay SPA, and common scoter are included as a priority species in the section 7 list made pursuant to the Environment (Wales) Act 2016. Both species are sensitive to anthropogenic disturbance and displacement, including from vessel movements (Fließbach et al. 2019; Kaiser et al. 2002).</p>	<p>results of the assessments and conclusions are presented in section 5.7.2 of Volume 2, Chapter 5: Offshore ornithology (F2.5 F03). The assessment concluded a minor adverse effect (not significant in EIA terms) during construction and a negligible effect during operation (not significant in EIA terms) for both red-throated diver and common scoter.</p>
6	<p>As the offshore export cable route goes through the Liverpool Bay SPA, cable installation vessels will be moving through the SPA during this phase. As the port location is currently unknown, there is the possibility that both cable installation vessels travelling to reach the export cable corridor area outside of the SPA, and vessels transiting from port to the array area, could travel through the SPA to reach these areas. Therefore, given the sensitivity of the RTD and common scoter features of the SPA to disturbance and displacement from vessel movements, we agree with the Applicant's conclusion in <i>E1.4: HRA Stage 1 Screening report</i> that a likely significant effect (LSE) cannot be ruled out and that this site has been taken forward to <i>E1.3: HRA Stage 2 ISAA Part 3 – SPAs and Ramsars report</i>.</p>	<p>The Applicant agrees with NRW (A) that a likely significant effect (LSE) cannot be ruled out for red-throated diver and common scoter in the Liverpool Bay/Bae Lerpwl SPA. As such, this site has been taken forward to the HRA (Habitat Regulations Assessment) Stage 2 Information to Support an Appropriate Assessment Part Three: Special Protection Areas and Ramsar sites Assessments (E1.3 F02). The assessment presented in HRA Stage 2 Information to Support an Appropriate Assessment Part Three: Special Protection Areas and Ramsar sites Assessments (E1.3 F02) concluded of no risk of an adverse effect on the integrity of the Liverpool Bay/Bae Lerpwl SPA as a result of disturbance and displacement from airborne sound and presence of vessels and infrastructure with respect to the construction, operation and decommissioning of the Mona Offshore Wind Project alone and in-combination with other projects.</p>
7	<p>However, subject to an appropriate offshore Environmental Management Plan (EMP) that includes all the measures listed by the Applicant in the <i>E1.3: Stage 2 ISAA Part 3 – SPAs and Ramsars report</i> being agreed, in writing with NRW (A) (we also advise this is agreed with JNCC), and appropriately secured as a condition of the TA ML (and deemed Marine licence [dML] within the DCO consent), then we consider it unlikely that there will be an adverse effect on Liverpool Bay SPA. Further details regarding the mitigation measures and securing of these are set out below.</p>	<p>The Applicant confirms that it has committed to the following measures as set out in the Mitigation and Monitoring Schedule (J10 F04):</p> <ul style="list-style-type: none"> <li>• A timing restriction of no offshore export cable installation during the period 1 November to 31 March within Liverpool Bay SPA (as set out in Measures to disturbance to marine mammals and rafting birds from transiting vessels (Document Reference J17 F02);</li> <li>• A marine pollution contingency plan.</li> </ul> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that a PEMP will be secured in the standalone NRW Marine Licence as identified in the Marine Licence Principles document (J9 F04), which is to include the Measures to Minimise Disturbance to</p>
8	<p>1.3.1.2 Applicability of mitigation measures:</p>	

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	<p>We welcome the measures listed within <i>E1.3: Stage 2 ISAA Part 3 – SPAs and Ramsars report</i> of adherence to an offshore Environmental Management Plan (EMP) that will include:</p> <ul style="list-style-type: none"> <li>• Measures to minimise disturbance to rafting birds from transiting vessels (as set out in report <i>J17: Measures to Minimise Disturbance to Marine Mammals and Rafting Birds</i>).</li> <li>• A timing restriction of no offshore export cable installation during the period 1st November – 31st March within Liverpool Bay SPA.</li> <li>• A Marine Pollution Contingency Plan (MPCP).</li> </ul>	<p>Marine Mammals and Rafting Birds (J17 F02). As set out in that document it is anticipated that a restriction on working from 1 November to 31 March within the Liverpool Bay/Bae Lerpwl SPA will therefore be delivered and secured as indicated in the Mitigation and Monitoring Schedule (J10 F04) and the Marine Licence Principles document (J9 F04).</p>
9	<p>We agree that this EMP, and the specific aspects within it that the Applicant commits to listed above, is needed and is necessary to avoid or reduce disturbance, and therefore displacement and pollution impacts to the RTD and common scoter features of the SPA from both cable laying activities in the construction phase, and from vessels potentially transiting from port through the SPA during all phases.</p>	
10	<p>As was noted to the Applicant during the offshore ornithology expert working group (EWG) for the Mona project, NRW (A) and the other SNCBs consider that there is not much that can be done to minimise disturbance to RTD and common scoter due to cable installation works, and the measures to minimise disturbance (such as those committed to by the Applicant in report <i>J17</i>) were more related to activities such as Crew Transfer Vessel movements, rather than cable installation works. The only effective measure to minimise disturbance from cable installation works is to not be present in the area. Therefore, we note that the Applicant's commitment to measures to minimise disturbance to rafting birds from transiting vessels is only applicable to minimising disturbance to these features of the SPA from vessel transit movements through the SPA during all phases</p>	<p>The Applicant welcomes NRW(A)'s comment.</p>
11	<p>Given that vessels laying the offshore export cable within the SPA will need to follow the specific route for the offshore export cable, it will not be possible for them to adhere to the measures set out by the Applicant in report <i>J17</i>, such as using existing shipping</p>	<p>The Applicant welcomes NRW(A)'s agreement on the timing restriction of cable installation activities in the Liverpool Bay/Bae Lerpwl SPA during the 1 November to 31 March to avoid the key overwintering period of red-throated diver and common scoter.</p>

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	lanes/transit routes, avoiding aggregations of rafting birds etc. Therefore, the Applicant's commitment to the timing restriction on offshore export cable installation activities to avoid the key winter period when the features of concern will be present in greatest numbers, is welcomed in order to minimise disturbance to the relevant SPA features from this activity within the SPA.	
12	Whilst the adherence to an offshore EMP is secured within the dML in Point 18 of Part 2 of Schedule 14 of the draft DCO (in 'C1 Draft Development Consent Order F03', submitted into the DCO examination as PDA-003), our Written Representations to the Examining Authority (ExA) noted that the cable laying timing restriction aspect of the EMP is not included within the list of information to be included in the EMP listed within Part e) of point 18 of conditions listed in Part 2 of Schedule 14 of the draft DCO (document C1). We have advised the Applicant and the ExA that this aspect of the measures/conditions within the EMP needs to also be included within the DCO and committed to and secured in the dML in order to minimise disturbance to the key features from this activity. It is prudent therefore, to record, in this consultation, that we note the Applicant's intention to also secure an offshore EMP in the TA ML (as set out in the row relating to Project Environmental Monitoring Plan, PEMP, in the ' <i>Marine Licence Principles Document 02</i> ' (report J9, submitted as part of the TA ML application and into the DCO examination as PDA-005). We welcome the intention to also secure this commitment in the TA ML and agree that this should be secured therein. We also consider that the commitment to the timing restriction needs to also be secured in the TA ML.	The Applicant has committed to the timing restriction of no offshore export cable installation during the period 1 November to 31 March within the Liverpool Bay Special Protection Area. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that a PEMP will be secured in the standalone NRW Marine Licence as identified in the Marine Licence Principles document (J9 F04), which is to include the Measures to Minimise Disturbance to Marine Mammals and Rafting Birds (J17 F02). As set out in that document it is anticipated that a restriction on working from 1 November to 31 March within the Liverpool Bay/Bae Lerpwl SPA will therefore be delivered and secured as indicated in the Mitigation and Monitoring Schedule (J10 F04) and the Marine Licence Principles document (J9 F04).
13	We note that, in the ' <i>Marine Licence Principles Document 02</i> ' (report J9) in the row on the Project Environmental Management Plan (PEMP) (page 20), whilst the timing restriction is mentioned as a measure that the offshore EMP should include, it is currently added to the point on measures to minimise the potential spread of invasive non-native species (INNS). This timing restriction is not related to minimising spread of INNS, rather it is related to reducing/minimising disturbance effects to the wintering features of the Liverpool Bay SPA. As such, we consider that this should be	The Applicant notes NRW (A)'s comment. The Marine Licence Principles Document (J9 F04) has since been updated to clarify that the seasonal restriction is included within the Measures to Minimise Disturbance to Marine Mammals and Rafting Birds from Transiting Vessels (J17 F02).

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	separated out to be a standalone point required to be included in the EMP	
14	Subject to an appropriate EMP that includes all the measures listed above being agreed, in writing by NRW (A) (we also advise this is agreed with JNCC), and appropriately secured as a condition of the deemed ML and standalone ML, we consider it to be unlikely that there will be an adverse effect on Liverpool Bay SPA	The Applicant welcomes NRW (A)'s comment.
15	<p>We note that the timing restriction on offshore export cable installation activities within the SPA will not apply for the trenchless works on the intertidal zone, which will be supported by up to eight vessel movements at the landfall over the winter period. In NRW (A)'s Relevant Representations (NRW 2024, <a href="#">[RR-011]</a>) we noted that the need to undertake this aspect during winter is currently unclear from the submission documents. In the Applicant's response to Relevant Representations (Mona Offshore Wind Limited 2024, <a href="#">[PDA-008]</a>), the Applicant noted that: <i>'The commitment to no offshore export cable laying during the overwintering period (1st November – 31st March) within the Liverpool Bay SPA has reduced flexibility in the construction programme, and therefore the programme of works is more constrained. Prohibiting works at the trenchless techniques exit pits during the overwintering period would add further pressure to the installation window for offshore export cables.'</i> We acknowledge the Applicant's position on this and regarding this aspect of the work, we note:</p> <ul style="list-style-type: none"> <li>• Any disturbance impact to features of the SPA will be temporary for the time of the vessel presence.</li> <li>• Birds will be able to return once the vessel has gone.</li> <li>• There will be other habitat available within the SPA to the birds for the time they are disturbed from the landfall area.</li> <li>• Up to 8 movements across the key winter period of November-March represents a small proportion over this timescale.</li> <li>• Whilst not within the suite of documents submitted into the TA ML application, a commitment to trenchless works at the landfall has been made – the Applicant's commitment to installing</li> </ul>	<p>The Applicant has committed to using trenchless techniques to install the cable at landfall. This is secured through the outline landfall construction method statement which must be submitted to the local authority for approval prior to the commencement of construction as part of the approval of the Code of Construction Practice. NRW is a named consultee on the approval of those documents and will therefore be consulted on the contents of the landfall construction method statement through the discharge of that Development Consent Order Requirement. The Applicant has committed to this as set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence.</p> <p>The Applicant welcomes NRW (A)'s position that trenchless technique works at the landfall within the intertidal zone, as part of the construction phase, is not expected to result in an Adverse Effect on Site Integrity (AEoSI) on the red-throated diver and common scoter features of the Liverpool Bay SPA.</p>

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	<p>export cables from landward of Mean Low Water Springs (MLWS) to onshore by trenchless techniques is secured through document <i>J26.14: Outline Landfall Construction Method Statement</i> and the Outline Landfall Construction Method Statement forms part of the Code of Construction Practice (CoCP) and is therefore secured under Schedule 2, Requirement 9 of the Draft DCO (see C1 'Draft Development Consent Order'). NRW (A) advise that we will need to be consulted, in writing, on the outline LCMS and CoCP where there are marine elements involved. We advise that this commitment is also secured via the TA ML.</p> <ul style="list-style-type: none"> <li>NRW (A) advise that we will need to be consulted, in writing, on the outline LCMS and CoCP where there are marine elements involved.</li> </ul> <p>Based on the above, NRW (A) does not expect this temporary activity, as part of the construction phase, will result in an Adverse Effect on Site Integrity (AEoSI) on the RTD and common scoter features of the Liverpool Bay SPA.</p>	
16	<p>1.3.2 European Protected Species (EPS): N/A for marine ornithology</p> <p>1.3.3 Environment (Wales) Act 2016 (Habitats / Ecosystems): N/A for marine ornithology</p>	The Applicant notes NRW (A)'s comment.
17	<p>1.3.4 Environment (Wales) Act 2016 (Section 7): There is potential for the works to impact common scoter, which are included as a priority species in the section 7 list made pursuant to the Environment (Wales) Act 2016. Please refer to comments in the section above regarding Liverpool Bay SPA and specific impacts and the applicability of mitigation measures proposed by the application.</p>	Please see response to Row 2.
18	<p>1.3.5 Marine and Coastal Access Act Part 5: Nature Conservation:</p>	The Applicant notes NRW (A)'s comment.

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	<p>N/A for marine ornithology</p> <p>1.3.6 Water Framework Directive:</p> <p>N/A for marine ornithology</p>	
19	<p>2. Marine Mammals</p> <p>2.1 Main Matters</p> <p>We have outlined a number of concerns with regard to the draft outline Underwater Sound Management Strategy (UWSMS) (<b>Main Matter 1</b>)</p>	<p>The Applicant notes NRW (A)'s comment and has responded below in relation to the specific points raised. Please see response to Main Matter 1 in Row 28 below.</p>
20	<p>We consider that there is the possibility of large-scale disturbance from Acoustic Deterrent Devices (ADD) deployment employed as mitigation against auditory injury (<b>Main Matter 2</b>)</p>	<p>Please see the response to Main Matter 2 in Row 51 below.</p>
21	<p>The Applicant has stated that changes in the impulsive characteristics of impulsive noise at range means that disturbance thresholds for piling noise should be considered precautionary at long range (i.e. a few kilometres). However, while we consider that this is a plausible hypothesis, we caution against phrasing this in conclusive and definite terms in the absence of any published data to confirm this. (<b>Main Matter 3</b>)</p>	<p>Please see the response to Main Matter 3 in Row 53 below.</p>
22	<p>There is inadequate justification in the Environmental Statement and Information to Support an Appropriate Assessment (ISAA) for an overall conclusion of <i>low</i> magnitude for disturbance from elevated underwater sound, given that the estimated numbers of animals disturbed by vessels and any subsequent conclusions appear to have been based on static impact radii (<b>Main Matter 4</b>)</p>	<p>Please see the response to Main Matter 4 in Row 57 below.</p>
23	<p>2.2 Detailed Comments</p> <p>2.2.1 Conservation of Habitats and Species Regulations (HRA) 2017 (Reg 63):</p> <p>2.2.1.1 Comments on the Applicant's HRA</p> <p>In line with our comments for the full DCO application, NRW (A) confirm that we agree with the overall conclusions in the Information to Support an Appropriate Assessment (ISAA) both for the project alone and in combination, notwithstanding any comments raised in</p>	<p>The Applicant welcomes NRW (A)'s comments on the HRA Stage 2 Information to Support an Appropriate Assessment (E1.1, E1.2 and E1.3) in respect of the marine mammal assessment conclusions for both the Mona Offshore Wind project alone and in combination, and the agreement that any conclusions made for the full project also suitably covers the transmission assets.</p>

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	<p>the proceeding sections. We note that these conclusions were made for the full project (as opposed to the transmission assets alone), however we agree that any conclusions made for the full project also suitably covers the transmission assets.</p>	
24	<p>We note that a number of conclusions (e.g. inter-related effects, vessel noise) were based on the assumption that impacts would be mitigated. While we welcome the commitment of the Applicant to continue to engage with NRW (A) to develop the Underwater Sound Management Strategy (UWSMS), we advise stress that at present amendments need to be made to the strategy. Please see our comments at 1.5.1.3 <i>Applicability of Mitigation Measures</i> below.</p>	<p>Please see the response to Row 28 below.</p>
25	<p>2.2.1.2 Significant effects / Adverse effects</p> <p>NRW (A) agrees with the Applicant's overall conclusions in the Environmental statement (ES) [F2.4] and the ISAA [E1.1, E1.2, E1.3] that there will not be an AEoSI or significant effects as a result of the Mona project, and by inference the transmission assets.</p> <p>For Mona Offshore Windfarm in its entirety, the Applicant concluded that harbour porpoise was potentially sensitive to injury arising from elevated underwater sound from high-order Unexploded Ordnance (UXO) clearance for both the project alone, and cumulatively. Bottlenose dolphin was identified as being potentially sensitive to disturbance arising from the elevated underwater sound from piling during the Cumulative Effects Assessment (CEA); population modelling using the Interim Population Consequences of Disturbance Model (iPCoD) showed a decline of 2.3% over six years, i.e. an average decline of &lt; 0.4% per year, which is below the 1% per year average decline threshold for a significant effect / adverse effect that NRW (A) recommends in its advice. We also note that the Applicant used a harbour porpoise dose response curve when calculating the number of animals disturbed from pile driving, which we consider to be a precautionary method given that bottlenose dolphin are known to be less sensitive than harbour porpoise to underwater noise (NRW, 2022).</p>	<p>The Applicant welcomes the written agreement from NRW (A) with regards to the overall conclusions in the Volume 2, Chapter 4: Marine mammals (F2.4) and the Information to Support an Appropriate Assessment (E1.1, E1.2 and E1.3) and the agreement that there will not be an Adverse Effect on Site Integrity or significant effects as a result of the Mona Offshore Wind Project, and by inference the transmission assets covered under the standalone NRW Marine Licence application.</p> <p>The Applicant welcomes confirmation from NRW (A) that the population modelling showed a decline below the threshold of 1% for a significant effect/adverse effect that NRW (A) recommends.</p> <p>The Applicant is in agreement with NRW (A) that using the harbour porpoise dose response curve for calculating number of bottlenose dolphin disturbed from pile driving represents a precautionary approach given that bottlenose dolphin is known to be less sensitive than harbour porpoise to underwater sound.</p>
26	<p>We advise that the following impact pathways are likely to have a significant effect (LSE) alone and in-combination noting that here, in-combination has been taken to include combined effects primarily</p>	<p>The Applicant highlights that the pathways highlighted by NRW (A) have all been assessed in the Appropriate Assessment (for sites and relevant qualifying features</p>

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	<p>with the generation assets of Mona OWF, and also in combination with other plans and projects in the vicinity:</p> <ul style="list-style-type: none"> <li>injury and disturbance from piling for offshore substation platforms (OSPs)</li> <li>injury and disturbance from elevated underwater sound during UXO clearance</li> <li>injury and disturbance from elevated underwater sound due to vessel use and other non-piling sound producing activities</li> <li>injury and disturbance from elevated underwater sound during site investigation surveys</li> </ul>	<p>for which LSE could not be ruled out), as detailed in Table 1.2 of Part Two: Special Areas of Conservation (SACs) Assessments (E1.2):</p> <ul style="list-style-type: none"> <li>'underwater sound from piling' which includes injury and disturbance from piling for offshore substation platforms (OSPs);</li> <li>'underwater sound from clearance of UXO' which includes injury and disturbance from elevated underwater sound during UXO clearance;</li> <li>'underwater sound from vessels and other vessel activities' which includes injury and disturbance from elevated underwater sound due to vessel use and other non-piling sound producing activities; and</li> <li>'Underwater sound from pre-construction site surveys' which includes injury and disturbance from elevated underwater sound during site investigation surveys.</li> </ul>
27	<p>We advise that the above pathways require Appropriate Assessment in the HRA produced for Mona Transmission Assets Marine Licence, as has been carried out in the Assessment for the project as a whole as part of the DCO process. Based on the conclusions for the full project, we do not expect a conclusion of significant effect / adverse effect, however the above pathways should be considered. We also advise that as in the assessment of the project as a whole, other pathways should also be considered as part of the assessment (but may or may not incur LSE), such as changes in fish and shellfish communities affecting prey availability and increased likelihood of injury due to collision with vessels.</p>	<p>The Applicant highlights no adverse effects on integrity were concluded as a result from any pathway from the Mona Offshore Wind Project (as concluded in Table 1.220 in Part Two: Special Areas of Conservation (SACs) Assessments (E1.2)).</p> <p>The Applicant highlights that, although the standalone NRW Marine Licence is only consenting the transmission assets, the marine mammal assessments have considered the Mona Offshore Wind Project as a whole. The Mona Offshore Wind Project is comprised of both the generation assets and offshore and onshore transmission assets and associated activities. Key parameters for the Mona Offshore Wind Project are detailed in Table 1.1 of the HRA Stage 1 Screening Report (E1.4 F02) and Part One: Introduction and Background of the ISAA (E1.1). The Applicant has had further discussion with NRW (A) in this regard, and NRW (A) has confirmed agreement to the approach for LSE Screening for Marine Mammals. Therefore, if there are no adverse effects on integrity from the Mona Offshore Wind Project which encompasses the Generation Assets and the transmission assets, the Applicant considers a separate HRA produced for the standalone NRW Marine Licence is not required. The Applicant highlights that NRW (A) also stated in their response in Row 25 that they do not expect a conclusion of significant effect/adverse effect from the Mona transmission assets.</p>
28	<p>2.2.1.3 Applicability of mitigation measures (Main Matter 1):</p> <p>We agree, in principle, with the commitment to develop an UWSMS [J16], and that it should identify all potential noise sources associated with the project with further detail provided in associated mitigation plans. Whilst we acknowledge that further significant detail cannot be populated at this time, we consider it likely that the</p>	<p>The Applicant welcomes the agreement from NRW (A) with the commitment to the Underwater Sound Management Strategy (UWSMS) (J16) and that it should identify all potential sources of sound associated with the Mona Offshore Wind Project. The Applicant welcomes the acknowledgement that it is likely the UWSMS could potentially reduce the magnitude of impacts to an acceptable level.</p>

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	<p>UWSMS could potentially reduce the magnitude of impacts to an acceptable level. We welcome the commitment of the Applicant to continue to engage with NRW (A) to develop the USWMS and consider that this engagement is required. We agree with the Applicant that the UWSMS should be secured via condition in both the TA ML and the dML as part of the DCO. This needs to be agreed in writing with NRW (A).</p>	<p>The Applicant notes that continued engagement with NRW (A) is required, and that NRW (A) welcomes the commitment from the Applicant to engage.</p> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs (Statutory Nature Conservation Bodies) throughout the development of the final UWSMS.</p>
29	<p>We have the following concerns on the draft outline UWSMS [J16] as provided with the application:</p> <p>The document focuses only on two species: bottlenose dolphin and harbour porpoise. The current decision appears to have been based on the conclusions of significance in the ES and appears to suggest that only two species are at risk. We do not consider that this assumption is correct. Without mitigation, all marine mammals are sensitive to injury and disturbance from piling and UXO clearance and as European Protected Species (EPS), all cetacean species are protected from both. Thus, a conclusion of not significant / no adverse effects is not sufficient; mitigation should be included as industry best practice to reduce the risk of a residual effect to negligible in relation to EPS.</p>	<p>The UWSMS applies to all marine mammal and fish species and mitigation is relevant to all receptors sensitive to underwater sound. The Applicant agrees that without mitigation, all marine mammals are sensitive to injury and disturbance from piling and UXO clearance and as European Protected Species (EPS), all cetacean species are protected from both. Therefore, the Outline Marine Mammal Mitigation Protocol (MMMP) (J21) details the range of primary and tertiary measures adopted as part of the Mona Offshore Wind Project to reduce or eliminate the risk of auditory injury to all marine mammal species arising from underwater sound (due to piling, UXO clearance etc.) during pre-construction and construction phases of the Mona Offshore Wind Project. These include measures included as a part of the Mona Offshore Wind Project design (such as implementation of an initiation stage of a piling soft start and ramp-up, implementation of a mitigation hierarchy with regards to UXO clearance) and measures required to meet legislative requirements or adopted best industry practice (such as Marine Mammal Observers (MMOs), Passive Acoustic Monitoring (PAM), Acoustic Deterrent Devices (ADD)).</p> <p>Further to the MMMP, the Outline UWSMS (J16) targets species where a residual significant effect has been identified that cannot be mitigated by the MMMP alone, thus the focus is on bottlenose dolphin (with respect to an identified significant effect during piling at cumulative projects) and on harbour porpoise (with respect to an identified significant effect during UXO clearance from the project alone). The final UWSMS will be developed in consultation with relevant stakeholders.</p> <p>The Outline UWSMS (J16) also crucially provides mitigation for fish receptors which are not covered by the MMMP. The wording in the Final UWSMS will be updated post-consent to provide this clarity.</p>
30	<p>Noise abatement systems (NAS) for piling, which are technologies that reduce the noise propagating through the water during pile driving (e.g. bubble curtains) have been presented as other (or</p>	<p>The Applicant emphasises that Noise Abatement Systems (NAS) is termed 'secondary' mitigation in line with guidance from IEMA (2016) but should not be taken as lesser than other primary or tertiary measures. Instead, it is a further mitigation measure considered in addition to 'primary' (project designed-in</p>

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	'secondary') mitigation by the Applicant. It is our view that NAS should be given more serious consideration.	measures) and 'tertiary' (standard industry) measures if required.. The final UWSMS will consider a range of mitigation options including NAS technologies where necessary. The Applicant would like to highlight that all further (secondary) options will be considered fully post consent (as outlined in section 1.8 of the Outline UWSMS (J16)), and if required, the most appropriate option(s) will be agreed in consultation with relevant licencing authority and Statutory Nature Conservation Bodies (SNCBs) and applied to reduce the effects from underwater sound to a non-significant level.
31	In line with the Governments Joint Position Statement on UXO clearance (DEFRA, 2022), low order methods of clearance (i.e. methods which cause the UXO to burn out but not detonate and are thus less disruptive / damaging) should be prioritised, with high order clearance (i.e. detonation of UXO using a small explosive charge) only to be used in exceptional circumstances. We recommend that this commitment be made more explicit in the UWSMS.	The Applicant highlights that the specific UXO mitigation hierarchy commitment is detailed clearly in paragraph 1.6.2.2 of the outline UWSMS (J16) with the preference to use low order methods explicitly stated where clearance of UXO is required. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs throughout the development of the final UWSMS.
32	We do not recommend the proposed use of soft start charges for UXO clearance due to the substantial additional impulsive noise they introduce into the environment (Robinson et al 2022), and their scaring effect not being proven (Lewis 1996; Keevin and Hempen 1997; Cheong et al 2020).	<p>The Applicant notes the advice on scare charges and highlights that this was discussed in the Marine Mammal Expert Working Group 07 (see Technical Engagement Plan (E4)) and minutes of the EWG meetings in Appendix C of the Technical Engagement Plan Appendices Part 1 (A to E) (E4.1)).</p> <p>The Applicant requested guidance for alternatives during this meeting, and JNCC and Natural England advised that they provide advice for projects on a case-by-case basis (such as an extended pre-search and proven ADDs). Therefore, the Applicant will seek project-specific recommendations in developing the final MMMP and UWSMS in consultation with relevant stakeholders, including NRW (A). Paragraph 1.5.4.3 in the Outline UWSMS (J16) proposes that soft start charges will be applied to deter animals from the mitigation zone for the largest possible UXO following JNCC guidance (JNCC, 2010b). The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs throughout the development of the final UWSMS.</p>
33	For Table 1.7 <i>Summary of the reduction in key engineering parameters relevant to elevated underwater sound for the Mona Offshore Wind Project</i> clarity should be provided as to what metric was used to measure the % reduction: i.e. whether this was measured based on peak Sound Pressure Level (SPL <sub>peak</sub> ), Sound Exposure Level (SEL) or both since these are different metrics	Table 1.7 of the outline UWSMS (J16) summarises the key engineering parameters in terms of number of piles, hammer energy, duration per pile etc as detailed in the first column of the table. The percentage reduction presented reflects reductions in these project design parameters, rather than a reduction in

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	<p>needed to account for the different aspects of sound exposure and duration. <math>SPL_{peak}</math> is a measure of absolute maximum exposure at any one time, whereas SEL is a measure of the sound energy of exposure accumulated over time.</p>	<p>sound (in <math>SPL_{pk}</math> or SEL). Therefore, the distinction between sound metrics is not relevant for this particular table.</p>
34	<p>We recommend that the Applicant considers one of the key findings in ORJIPs Range Dependent Nature of Impulsive Noise (RaDIN) project (ORJIP 2024). The aim of this project was to improve understanding of how the impulsiveness of sounds produced during pile driving and UXO clearances changes with increasing distance from the source, and to help refine the estimation of auditory injury impact ranges for marine mammals to reduce conservatism during noise impact assessments. One of the major findings from this project was that the time between subsequent pile strikes was found to have the largest effect on hearing injury onset ranges, where increasing the time between pile strikes significantly reduced the range of injury onset.</p>	<p>The Applicant welcomes NRW (A)'s recommendation to review the use of the Permanent Threshold Shift (PTS) tool from the Offshore Renewables Joint Industry Programme (ORJIP) Range Dependent nature of Impulsive Noise (RaDIN) project (ORJIP 2024), and the acknowledgement that the tool requires refined project parameters and piling schedules, and therefore could only be considered post consent.</p> <p>Provision for the refinement of project parameters and assessment of such revisions in comparison to the Environmental Statement has been made in the outline UWSMS (J16). This will include any refinements to source levels and timing of pile strikes. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs throughout the development of the final UWSMS and therefore the use of the RaDIN tool and any other best-practice guidance at the time will be considered and agreed with stakeholders post consent.</p>
35	<p>A freely available software tool was developed by the project, which allows the user to estimate permanent hearing damage impact ranges from impact pile driving by considering a variety of factors including source level, timing between pile strikes, fleeing speed of the animal, and the assumed distance at which sound becomes non-impulsive. Work is currently ongoing to further develop the tool to be able to include ramp-up procedures, and the potential for the auditory system to recover between pile strikes.</p>	
36	<p>NRW(A) understands that at the application stage, consent must be considered on the basis of the maximum design envelope which considers both a realistic worst case in accordance with the precautionary principle and also to maximise flexibility in construction if consent is awarded. In addition, detailed information and further refinements of the piling schedule are normally only available further along the consenting process. Thus, post-consent, once more information on the piling schedule is available, there may be the potential to consider using the Permanent Threshold Shift (PTS) software tool developed from RaDIN to test the effect of altering the temporal pattern of pile strikes on PTS impact range and potentially use the temporal pattern of pile strikes as a primary mitigation method. We believe this could be particularly useful for</p>	

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	mitigating impacts on Minke whale (LF hearing group) the species with the largest PTS impact range.	
37	No evidence has been provided to support the statement that "it is anticipated any reduction in sound impacts from potential implementation of the NAS will act to mitigate impacts on fish species in the same area." We request that supporting evidence is provided.	The Applicant considers any reduction in sound impacts will be beneficial for both marine mammals and fish species. Species-level benefits will be investigated and presented for the final UWSMS and will depend on the type of mitigation applied. However, the overall premise of NAS, as one potential mitigation option, is to reduce sound levels at source or to reduce the propagation of sound over distance. Therefore, the statement that NAS will be beneficial to marine mammals and fish still applies, noting that the magnitude of the benefit on a species-by-species basis will need to be provided in more detail if NAS is investigated further post-consent, as part of the final UWSMS.
38	2.2.1.4 Licence Conditions We agree with the Applicant that the UWSMS should be secured via condition in the TA ML (and the dML as part of the DCO) (see the <i>Marine Licence Principles</i> document, J9). This needs to be agreed, in writing, with NRW (A).	The Marine Licence Principles Document (J9 F04) provides a tabulation of the principles which are anticipated to be included in the standalone NRW Marine Licence for the Mona Offshore Wind Project. This includes the UWSMS, with the principle that a 'ML condition will be needed to secure adherence to UWSMS in accordance with strategy submitted as part of DCO and ML applications'. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs throughout the development of the final UWSMS.
39	We advise that in drafting conditions with respect to marine mammals, the following needs to be considered: Development of a UWSMS, sufficient to achieve the aims of reducing the impact of noise (including for EPS species), with a commitment from the Applicant to continue to engage in consultation with NRW (A) and other SNCBs.	The Marine Licence Principles Document (J9 F04) provides a tabulation of the principles which are anticipated to inform the standalone NRW Marine Licence for the Mona Offshore Wind Project, and includes the UWSMS. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs throughout the development of the final UWSMS.
40	As is typical for offshore wind farm projects in the UK, a requirement to measure the underwater noise from the installation of the first four piles for each foundation type, or a representative number of pile locations, or the four largest piles. NRW (A) recommend following a standardised approach to this monitoring requirement (ISO 18407:2017). We acknowledge that the Applicant has already indicated their intention to carry out such monitoring in the outline Marine Mammal Mitigation Protocol (MMMP) [J21].	The Applicant welcomes acknowledgement from NRW (A) that the Applicant has committed to the monitoring of the first four piles in the outline MMMP, which is set out in the Marine Licence Principles Document (J9 F04). The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence. The Applicant notes that ISO 18406:2017 relates to 'Measurement of radiated underwater sound from percussive pile driving' and describes the methodologies, procedures, and measurement systems to be used for the measurement of the radiated underwater acoustic sound generated during pile driving using

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		<p>percussive blows with a hammer. The Applicant is committed to implementing a suitable approach for monitoring underwater sound from the impact piling of the first four foundations but, from experience in European markets, is aware that service providers work to different standards and, therefore, committing to a specific standard at this time risks significantly constraining the project as the credentials of potential service providers are not currently known. The Applicant will establish a suitable standard approach, such as ISO (or similar), for monitoring sound with respect to the first four piled foundations to be installed post-consent in agreement with the relevant SNCBs.</p>
41	<p>2.2.2 European Protected Species (EPS): We advise that the works have the potential to impact EPS, as there is a potential for residual injury and disturbance from piling, and injury and disturbance from high order UXO clearance.</p>	<p>The Applicant notes NRW (A)'s advice regarding the requirement for EPS licences and intends to submit an EPS licence application post consent for any activities which have the potential to impact marine mammals prior to the commencement of the activity, as per the Conservation of Habitats and Species Regulations 2017 ('the Regulations') and Conservation of Offshore Marine Habitats and Species Regulations 2017 as amended.</p>
42	<p>For piling, the assessment compared an unmitigated scenario against a mitigated scenario assuming an indicative 30 minutes of acoustic deterrent device (ADD) activation. Based on the results presented in the ES [F2.4], the unmitigated range at which instantaneous PTS could be elicited at maximum hammer energy (for a hammer energy of 4400 kJ) ranged between 41 – 662 m. The threshold for eliciting cumulative PTS was not exceeded for any species except Minke whale for which the injury range varied between 4290 - 7520m depending on the scenario. Estimated swim distances for 30 minutes of ADD activation ranged between 2,700m (for harbour porpoise) to 4,140m (for minke whale), which means that for all species except minke whale, 30 minutes of ADD activation well exceeded the impact range for piling.</p>	<p>The Applicant acknowledges that the potential effect of ADDs themselves should not be overlooked. The Applicant agrees that the reliance on ADDs as a primary mitigation tool should be considered carefully and on a case-by-case basis, but this does not change the outcome or robustness of the assessment in Volume 2, Chapter 4: Marine mammals (F2.4), which uses an indicative 30 minutes of ADD activation. The use of an ADD contributes an additional 30 minutes of underwater sound to the underwater sound from piling (up to a total of 4.5 hours of piling per pile; Table 4.16 in Volume 2, Chapter 4: Marine mammals (F2.4)), however, the magnitude of effects from the ADD (i.e. range over which disturbance could occur) is considerably lower compared to piling.</p> <p>The Application highlights that the 30 minute activation period is not a fixed time period and the final ADD duration will be agreed post-consent in the final MMMP and will consider the balance between allowing an animal time to move away from the injury zone and reducing unnecessary additional noise which may cause disturbance.</p>
43	<p>ADDs are often used to deter marine mammals from pile driving operations that may otherwise cause hearing injury. These devices work by emitting a noise to which the target animal is sensitive, and at a level loud enough or for a long enough time period to elicit a behavioural reaction sufficient for the animal to swim away to a safe distance – i.e. a deterrence range. This deterrence range can be altered based on the expected PTS impact range.</p>	<p>In reference to the paper highlighted by NRW (A), Elmegaard <i>et al.</i> (2023) investigated the physiological and behavioural responses of harbour porpoise to a commercial ADD in Danish waters. Six harbour porpoises were tagged with DTAGs (sound and movement recording tags), which recorded sound, 3D-movement and GPS or electrocardiogram. The harbour porpoise were then</p>

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44	<p>NRW (A) note that evidence from Elmegaard et al. (2023), Graham et al. (2023), Voß et al. (2023), and Brandt et al. (2013) demonstrates that harbour porpoise show very strong flight and physiological responses to ADD use even at low received levels and often far beyond the intended mitigation zone. This evidence is corroborated by data collected on porpoise response (displacement) to chronic and long-term exposure to ADDs at aquaculture sites (Findlay et al. 2024). Such energetic responses to noise may have a cumulative effect on health if they occur frequently enough, particularly for porpoise who are thought to need to forage constantly to meet their energy demands. We consider that there is a risk that in an effort to reduce the number of animals injured, a reliance on ADD deployment over other forms of mitigation will increase the number of animals disturbed, particularly harbour porpoise. A deterrence sound must be efficient in clearing an area of animals, yet it should not cause disruptions at scales larger than necessary.</p>	<p>exposed to ADDs for 15 minutes. All animals displayed a mixture of acoustic startle responses, swimming away responses, altered echolocation behaviour, and increased heart rate while diving. However, five harbour porpoise (out of six) returned to feeding within 16 to 42 minutes after exposure to the ADD (the tag fell off the sixth harbour porpoise, shortly after exposure). The study demonstrated harbour porpoise reacted to ADDs more than 7 km from the ADD (consistent with identified 7.5 to 12 km ranges by other similar studies (Brandt <i>et al.</i>, 2013; Dähne <i>et al.</i>, 2013)). Therefore, whilst deterrence devices need to be effective to avoid auditory injury from construction activities, the risk and effect caused by the deterrence should not exceed the risk and effect of the activity the animals are deterred from.</p> <p>Therefore, the Applicant understands the need for proportionate and judicious application of ADDs, and this will be considered carefully when finalising the ADD deployment duration post consent based on residual risk to EPS.</p>
45	<p>With no mitigation, a maximum of 4 minke whales were predicted to be injured, whereas with ADD activated for 30 mins, this was reduced to &lt;1. However, given the (1) short impact range for instantaneous PTS, (2) a maximum of 4 minke whales (but no other species) predicted to be injured from cumulative PTS in a no ADD scenario (reduced to &lt;1 in a 30 minutes ADD scenario), and (3) swim distances that far exceeded the PTS impact range for all species other than minke whale, we believe that the indicative 30 minute length of ADD exposure may be disproportionate when considering the additional noise and disturbance introduced to the environment. Thus, we advise that consideration should be given to proportionate and judicious application of ADDs in terms of deployment duration, and based on residual risk there may be a potential impact to EPS.</p>	
46	<p>Finally, we note that currently, the UWSMS focuses only on two species: bottlenose dolphin and harbour porpoise. The current decision appears to have been based on the conclusions of significance in the ES and appears to suggest that only two species are at risk. Without mitigation, all marine mammals are sensitive to injury and disturbance from piling and Unexploded Ordnance (UXO)</p>	<p>Please see the response to Row 29 above.</p>

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	clearance and as EPS, all cetacean species are protected from both.	
47	2.2.3 Environment (Wales) Act 2016 (Habitats/Ecosystems): N/A for marine mammals.	The Applicant notes NRW (A)'s response.
48	2.2.4 Environment (Wales) Act 2016 (Section 7): There is potential for the works to impact section 7 marine mammals from an individual perspective. Please refer to 2.5.2 (EPS) regarding specific impacts, and the 2.5.1.3 with regard to the applicability of mitigation measures proposed by the application.	Please see the response to Row 41 above for EPS and Row 28 above for the applicability of mitigation measures proposed by the Applicant.
49	2.2.5 Marine and Coastal Access Act Part 5: Nature Conservation: The only Marine Conservation Zone (MCZ) that is applicable in the context of Mona is Skomer MCZ, and with respect to Marine Mammals the relevant feature is grey seal. We do not consider that the proposed works have the potential to hinder the achievement of conservation objectives for Skomer MCZ.	The Applicant welcomes confirmation that NRW (A) do not consider that the proposed works have the potential to hinder the achievement of conservation objectives for Skomer MCZ.
50	2.2.6 Water Framework Directive: N/A for marine mammals.	The Applicant notes NRW (A)'s response.
51	2.3 Other Comments 2.3.1 Possibility of large-scale disturbance from ADD deployment employed as mitigation against auditory injury (Main Matter 2) The ES for the full project has concluded a negligible magnitude for the hearing injury impact pathway (i.e. PTS) based on the inclusion of the potential indicative use of designed-in measures (i.e. 30 minutes of ADDs). NRW (A) advises that caution should be exercised when large-scale use of ADDs is required, as evidenced by, for example, Elmegaard et al. (2023), which demonstrates that harbour porpoise show very strong flight and physiological responses to ADD use far beyond the intended range of mitigation. We believe that there is a risk that in an effort to reduce the number of animals injured, a reliance on ADD deployment over other forms of mitigation will increase the number of animals disturbed,	Please see the response to Row 42 above.

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	<p>particularly harbour porpoise. A deterrence sound must be efficient in clearing an area of animals, yet it should not cause disruptions at scales larger than necessary.</p>	
52	<p>While we do not believe it is necessary for the Applicant to assess separately the effects of ADDs, we advise that proportionate application of ADD use should be considered post consent, and other methods of mitigation should be looked at including altering the temporal pattern of pile strikes.</p>	
53	<p>2.3.2 Disturbance and changes in impulsive characteristics (Main Matter 3)</p> <p>We note that in both the ES and the ISAA (e.g. Par 4.9.3.51 of F2.4), the Applicant states that changes in the impulsive characteristics of impulsive noise at range implies that disturbance thresholds for piling noise should be considered precautionary at long range (i.e. a few kilometres).</p>	<p>The Applicant notes NRW (A)'s response and welcomes confirmation that the matter of the effects of impulsive noise at range on disturbance does not materially affect the conclusions of Volume 2, Chapter 4: Marine mammals (F2.4) and Stage 2 ISAA Part Two: Special Areas of Conservation (SACs) Assessments (E1.2). The Applicant has based results on the full modelled range of disturbance.</p> <p>The Applicant highlights that paragraph 4.9.2.39 in Volume 2, Chapter 4: Marine mammals (F2.4) presents the conservative assumptions applied in underwater sound modelling and specifically the uncertainty of the effects of impulsive noise at range, highlighting that 'defining this transition range is an active area of research and scientific debate', with further detail in paragraphs 1.5.5.26 to 1.5.5.29 of Volume 5, Annex 3.1: Underwater sound technical report (F5.3.1).</p>
54	<p>As outlined in our position statement (NRW 2023), we fully agree that at ranges over several kilometres, impulsive noise gradually becomes more continuous due to refraction, absorption and scattering of attenuating high frequencies more than low frequencies. Sound also reflects off the surface and bottom of the sea taking different paths; thus it takes a different amount of time to arrive at a given point, lengthening the pulse (Hastie et al 2019; Martin et al 2020; ORJIP Offshore Wind, 2024). In this way noise that is impulsive at the source becomes less likely to cause hearing injury with range (Hastie et al 2019; Martin et al 2020; ORJIP Offshore Wind, 2024).</p>	
55	<p>We disagree that this will affect disturbance thresholds except in very specific cases where thresholds were based on observations close to the source noting that at present, changes in impulsive characteristics have only been discussed in the published literature in terms of their effects on hearing injury but not disturbance. Similarly, to our knowledge there are currently no published data which quantify the impact of these changes with regard to disturbance, or the relative importance / extent of this in comparison with other explanatory variables such as piling duration, piling schedule, exposure to previous piling events, and other contextual</p>	

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	<p>factors which include differences between species and individuals, situational contexts (e.g. foraging, breeding, presence of calves), and temporal scale. Thus, although we agree that it is plausible to hypothesise that changes in impulsive characteristics with range may influence animal behaviour, particularly when applying thresholds at ranges further away than the observations on which they were based, we also caution against phrasing this in conclusive terms in the absence of published data.</p>	
56	<p>However, we confirm that this does not materially affect the conclusions, since assessment results were based on the full modelled range of disturbance.</p>	
57	<p>2.3.3 Injury and disturbance to marine mammals from elevated underwater sound due to vessel use and other (non-piling) sound producing activities (Main Matter 4)</p> <p>We advise that inadequate justification has been provided in the ES and ISAA for an overall conclusion of <i>low magnitude</i> for disturbance, noting that the estimated numbers of animals disturbed by vessels and any subsequent conclusions appear to have been based on static impact radii – i.e. equivalent to vessels that are not moving. Given that vessels would be expected to move location, we consider that estimating numbers based on static impact radii may lead to both underestimates of daily numbers disturbed, and an underestimate of the overall daily area ensonified; which is required to compare against the time area thresholds for an adverse effect for harbour porpoise Special Areas of Conservation (SACs).</p>	<p>The Applicant welcomes the agreement from NRW (A) that due to the Applicant's commitment to the development of, and adherence to, an Offshore Environmental Management Plan (EMP), which includes measures to minimise disturbance to marine mammals (and rafting birds) from transiting vessels such as vessel slowdowns and following the SeaWISE code; NRW (A) consider should mitigate most of the impacts, making the overall conclusion (no significant effect) acceptable.</p> <p>The Applicant highlights that the ranges/numbers of animals disturbed presented are based on responses to moving vessels gathered from a literature review of empirical data from field studies, therefore, not on static impact radii.</p> <p>The Applicant considers that they have provided strong justification in their robust approach to disturbance from underwater sound from vessel use in Volume 2, Chapter 4: Marine mammals (F2.4).</p>
58	<p>Further to the publication of the errata document in the DCO process (see <a href="#">REP1-044</a> (page 5, par 4.9.5.22)) we can no longer fully agree with the rationale provided for the decision not to calculate number of animals disturbed from vessel noise. The Applicant states in REP1-044 that: “<i>Multiplying the area of ensonification by each species specific density would lead to unrealistic estimates, as serious disturbance would not occur over ranges such as 4.08 km.</i>”, when previously it stated “<i>Multiplying the area of ensonification by each species-specific density would lead to unrealistic estimates, as serious disturbance would not occur over ranges such as 23 km</i>”.</p>	<p>The Applicant notes NRW (A)'s comment regarding paragraph 4.9.5.22 “<i>Multiplying the area of ensonification by each species-specific density would lead to unrealistic estimates, as serious disturbance would not occur over ranges such as 4.08 km.</i>” The Applicant highlights that the errata to paragraph 4.9.5.22 (as per section 1.2.7 of the Errata Sheet (S_NRWML_5) was a change in the maximum disturbance value, due to the 23 km referring to the outdated maximum modelled disturbance range from underwater sound from vessels at PEIR, rather than the correct maximum modelled distance at Application (4.08 km). The Applicant stresses that there was no change in assessment approach, methodology or conclusions of significance, as the assessment presented the correct range of 4.08 km.</p>

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59	Here the Applicant argues that estimates based on an impact range derived from the Applicant's noise modelling and corroborated by evidence provided by the Applicant, which indicates that disturbance has been observed at ranges of up to 7 km, would be unrealistic.	Further, the Applicant clarifies that this statement was in relation to the assumption that within this range there would be 100% disturbance of animals. This is unlikely to be realistic as it is more probable that there will be a proportional response (i.e. a dose response) which would mean that the further an animal is from the vessel, the lower the probability of a response. Given that the behavioural response threshold of 120 dB re 1 µPa (rms) is applied to capture all types of behaviour (from mild startle responses to fleeing behaviour) and is applied across all marine mammal species, it is unsurprising that there would be a proportional effect in response to vessel noise (i.e. you would not anticipate that all animals that experience this sound would respond by fleeing directly away).
60	We fully agree that a proportion of animals would be disturbed within the impact radius as this is a statement clearly borne by the evidence (e.g. Joy et al 2019; Benhemma le Gall et al 2021) and knowledge of the probabilistic nature of animal responses. We also agree that the background noise level in an area may occasionally exceed the threshold level of 120 dB route mean square Sound Pressure Level (SPL <sub>rms</sub> ), which would reduce the overall impact radius. However, we do not agree that this supports the conclusion proposed that not carrying out an estimation of the numbers disturbed, is therefore justified. This does not preclude the needs to propose an alternative method to gauge the number of animals affected by this impact pathway, which we suggest can be done by making certain assumptions to make the calculation more tractable.	The Applicant questions the statements in Row 58 that "NRW (A) notes that we can no longer fully agree with the rationale provided for the decision not to calculate number of animals disturbed from vessel noise" and "the decision not to carry out an estimation of the numbers disturbed". The Applicant has in fact calculated the number of animals disturbed from underwater sound from vessels, using a range of disturbance from 1 km to 7 km derived from literature (which encompasses the modelled maximum impact range of 4.08 km and is therefore highly precautionary), clearly presented in Table 4.44 of Volume 2, Chapter 4: Marine mammals (F2.4). The Applicant has had further discussion with NRW (A) in regard to this matter, and NRW (A) acknowledged that it is unrealistic to assess injury and disturbance from vessel use by presenting a sum of the impact ranges of all vessels. Thus, whilst the elevation in the number of vessels above the baseline was quantified, the Applicant did not go further and sum the impact areas of all vessels, as, in agreement with NRW (A), this would be unrealistic and lead to a highly over-amplified assessment. Therefore, the Applicant emphasises that the rationale and methodology for the assessment of disturbance has not changed from that presented in Volume 2, Chapter 4: Marine mammals (F2.4).
61	We believe that a stronger argument could be made for either of two alternative approaches: (1) calculate numbers disturbed using the 4.08 km impact radius and present this as an absolute worst case scenario, (2) calculate the numbers using refinements obtained from the literature, (e.g -24% at 3 km Benhemma le Gall et al 2021) assuming that a percentage of animals within the impact radius would be disturbed, rather than 100%. Strong justification should be provided to clarify why approaches such as those discussed above were not taken.	NRW (A) suggested a stronger argument could be made for either of two alternative approaches in Row 61. The Applicant highlights approach 1 was presented in Volume 2, Chapter 4: Marine mammals (F2.4), with numbers of animals presented in Table 4.44 for the maximum 7 km impact radius (which encompasses the modelled 4.08 km range), which assumed 100% disturbance as the worst-case scenario (see above). Following further engagement with NRW (A) via a meeting on 9 September 2024 and written engagement on 10 September 2024, the Applicant presented the numbers of animals and percentage of the Management Unit (MU) disturbed using the 4.08 km (as requested by NRW) in comparison to the 7 km radius, which showed that fewer animals were potentially disturbed using NRW (A)'s suggested approach. This demonstrates that the
62	NRW (A) however note the commitment of the Applicant to the development of, and adherence to, an offshore Environmental Management Plan (OEMP) which includes measures to minimise disturbance to marine mammals (and rafting birds) from transiting vessels such as vessel slowdowns and following the SeaWISE code. We welcome this commitment, which we consider should mitigate most of the impacts, making the overall conclusion acceptable.	

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		<p>Applicant has used a precautionary approach in the assessment and considers the conclusions of no significant effect to remain unchanged.</p> <p>The Applicant also acknowledges a dose response approach from Benhemma le Gall <i>et al.</i> 2021 could be derived, but highlights (as detailed in 4.9.5.23 of Volume 2, Chapter 4: Marine mammals (F2.4)) that no apparent response was observed at 4 km (which is less than the maximum modelled disturbance range of 4.08 km). The Applicant demonstrated in discussions with NRW (A) that using the dose response assumes no animals are disturbed at 4 km, rather than the 15 animals derived from the 4.08 km radius approach. Given that the assessment was based on behavioural impact range of up to 7 km, the Applicant's approach was more precautionary as it provided a ~3 km buffer around the modelled impact range and assumed no dose response applied, such that all animals within this range would be behaviourally disturbed. Therefore, using a dose response would reduce the number of animals estimated to be disturbed, although noting that this would not change the overall conclusion of the assessment.</p> <p>The assessment is based upon a worst-case scenario both for the Mona Offshore Wind Project alone and all other projects in-combination, with multiple levels of precaution already built into the assessment, and the Applicant considers there is adequate justification provided for the assessment of the Mona Offshore Wind Project alone or in-combination with other projects and for the determination of low magnitude effects from underwater sound from vessel use.</p> <p>The Applicant has engaged with NRW (A) throughout the development consent order examination process on this matter. The Applicant and NRW (A) agree that this is a methodological discussion with no material impact on the assessment's conclusions but are nonetheless continuing to engage to resolve differences in opinions.</p>
63	<p>3. Fish and Shellfish</p> <p>3.1 Main Matters</p> <p>With regards to the impact on cod during their breeding season, NRW (A) does not agree with the Applicants conclusion as presented in the underwater noise assessment as '<i>minor adverse</i>'.</p>	<p>The Applicant notes NRW (A)'s comment.</p> <p>The potential impacts on cod high intensity spawning habitat in relation to the underwater sound impacts arising from construction activities have been assessed and presented in section 3.9.3 of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3). Approximately 21.64% of the high intensity cod spawning grounds within the study area are predicted to be impacted by underwater sound. However, the total area is not the only factor taken into account when assessing the significance of the overall impact on cod, and this approach has been informed by consultation with the Expert Working Group during the pre-application phase.</p>

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		<p>In line with advice provided through pre-application consultation (i.e. specifically the MMO) on the Mona Offshore Wind Project PEIR through Section 42 consultation (see sections 4 and 5 of the Consultation Report (E3), the degree of overlap with mapped spawning grounds is not used to underpin the assessment but is considered to support expert judgement alongside other parameters. This is due to mapped spawning grounds not reflecting hard boundaries (i.e. spawning of high or low intensity may occur in areas mapped as either intensity or in areas not mapped as spawning grounds at all), and for those spawning grounds presented in Ellis <i>et al.</i> (2012), the low degree of spatial resolution, given that these mapped grounds are extrapolated to ICES Rectangle scale.</p> <p>The Applicant considered a range of elements to define the magnitude of an impact, and in this case, the overall magnitude conclusion was found to be low, resulting in a minor adverse impact significance overall. Factors considered when defining the magnitude of the impact of underwater sound from piling affecting fish and shellfish receptors include:</p> <ul style="list-style-type: none"> <li>• The extent of suitable habitat for cod spawning (i.e. the mapped cod grounds presented in Ellis et al. (2012) extend across much of the east Irish Sea, with further important spawning grounds within the west Irish Sea)</li> <li>• The short term and intermittent nature of the impact (a maximum design scenario of 114 days of piling over two years, within a four-year construction phase)</li> <li>• The high degree of reversibility of the impacts of underwater sound from piling</li> <li>• The likely timing of piling activities (noting that operational constraints associated with weather conditions are expected to limit operational efficacy during the winter period, which extends into the cod spawning season of January to April).</li> </ul> <p>With specific reference to the Mona Offshore Wind Project transmission infrastructure which is covered under the standalone NRW Marine Licence, which includes offshore export cables, interconnector cables, OSPs and related works located within the Mona Array Area and the Mona Offshore Cable Corridor, the low magnitude is based upon just 12 days of piling for the Mona Offshore Wind Project alone (as opposed to 114 days for the generation and transmission infrastructure).</p>

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		<p>Whilst for herring, the mapped spawning grounds defined by Coull <i>et al.</i> (1998) are known to be highly discrete (due to the substrate specificities of this species), the mapped high intensity cod spawning grounds occupy a large extent of the fish and shellfish ecology study area, and beyond into the west Irish Sea, with the entirety of the east Irish Sea considered suitable spawning ground for cod.</p> <p>Therefore, in the context of available spawning habitat for cod within the Irish Sea, combined with the abovementioned short-term, intermittent and reversible nature of the impact, the magnitude of impact for the project alone is considered low, and the overall significance of effect is considered minor adverse which is not significant in EIA terms.</p> <p>In any case, the Applicant acknowledges the risk of underwater sound impacts to spawning cod and, as such, cod has specifically been included as a key species within the Outline UWSMS (J16), which will be used to manage the effects of underwater sound on spawning cod with mitigation focused on the management of contributions to cumulative underwater sound inputs by the Mona Offshore Wind Project. As such, these measures will likewise manage effects on cod due to the Mona Offshore Wind Project alone, and therefore, the difference between the Mona Offshore Wind Project alone and cumulative impact significance for cod in relation to underwater sound generated by piling is considered immaterial and no change is proposed to the assessment conclusions. The Applicant is continuing to engage with NRW (A) regarding consideration of the impact on cod within the UWSMS.</p> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs, including NRW (A) throughout the development of the final UWSMS. This ensures that concerns regarding underwater sound impacts can be fully addressed with appropriate and proportionate measures implemented, where necessary, based upon the final project design and construction schedule and taking account of underwater sound policy at that time.</p>
64	<p>NRW (A) considers that the noise modelling thresholds used for cod are under-precautionary. We advise that a similar approach is adopted to that taken for the assessment of herring.</p>	<p>The Applicant notes NRW (A)'s comment, and also notes the response provided by NRW (A) within Section 42 consultation for the Mona Offshore Wind Project agreeing that cod be considered of medium sensitivity to underwater sound impacts (Section D.25.9 of the Consultation report (E3.1)).</p> <p>Based upon Section 42 consultation responses from the MMO/Cefas, the Applicant determined that a more precautionary approach was necessary in defining the sensitivity of cod (as discussed during Expert Working Group meeting 4, July 2023; see Appendix B of Technical Engagement Plan (E4.1), and as such,</p>

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		<p>the sensitivity of cod to underwater sound impacts was subsequently defined as high within Volume 2, Chapter 3: Fish and shellfish ecology (F2.3), thereby ensuring a precautionary approach to assessment. This increase in the sensitivity of cod was agreed by NRW (A) during EWG meeting 4 (July 2023; see Appendix B of Technical Engagement Plan (E4.1).</p> <p>As previously discussed with NRW (A), the sound modelling thresholds used for the assessment of underwater sound impacts on cod were based on a range of published research (Popper <i>et al.</i>, 2014, Pearson <i>et al.</i>, 1994, McCauley <i>et al.</i>, 2000, and Fewtrell and McCauley, 2012), and the Applicant considers the approach taken to behavioural effects using the threshold indicated to be sufficiently precautionary to assess the risk of potential behavioural effects to spawning cod.</p>
65	<p>Whilst we consider the UWSMS to be an appropriate mitigation measure, we advise that, currently, the content of the strategy is not sufficiently developed to provide adequate mitigation for cod or herring.</p>	<p>The Applicant notes NRW (A)'s comment and welcomes confirmation from NRW(A) regarding the appropriateness of the Outline UWSMS (J16) to secure the reduction of the magnitude of impacts to an acceptable level.</p> <p>Both cod and herring are specifically referenced within the Outline UWSMS (J16) as focus species, and an indication of potential measures to be investigated are provided at this stage, subject to further development post-consent.</p> <p>The Outline UWSMS (J16) is proposed to be further developed post-consent when the final design parameters and construction programme are known, to ensure proportionate and accurate identification of risks and appropriate mitigation measures based upon known factors. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs, including NRW (A) throughout the development of the final UWSMS to ensure the mitigation proposed is adequate for cod and herring. The UWSMS will be developed post-consent and will consider forthcoming policy changes alongside the final project design and construction schedule to ensure the measures proposed to mitigate impacts to spawning cod and herring to non-significant levels are proportionate and appropriate to the risk, as set out in the response to Row 63 above.</p>
66	<p>3.2 Detailed Comments</p> <p>3.2.1 Conservation of Habitats and Species Regulations 2017 (Reg 63):</p> <p>We agree with the screening undertaken in the HRA Screening report (E1.4) and the subsequent Stage 2 assessment (E1.2) and agree with the overall conclusion of no risk of an AEoSI on the</p>	<p>The Applicant welcomes NRW(A)'s agreement with the screening presented in the HRA Screening Report (E1.4 F02) and Stage 2 Assessment (E1.2) and the overall conclusion of no risk of adverse effects on the integrity of Welsh protected sites.</p>

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	integrity of diadromous fish features from the Welsh protected sites; Dee Estuary/Aber Dyfrdwy SAC, River Dee and Bala Lake/Afon Dyfrdwy a Llyn Tegid SAC, and Afon Gwyrfai a Llyn Cwellyn SAC.	
67	3.2.2 Environment (Wales) Act 2016 (Section 7): NRW (A) advises that piling noise from the proposed development has the potential to impact a significant proportion of spawning cod, protected under section 7 of the Environment (Wales) Act 2016.	The Applicant notes NRW (A)'s comment and has provided detailed feedback in response to each point raised below (Rows 68 to 101).
68	3.2.2.1 Underwater noise impacts on cod spawning NRW (A) advise that we disagree that the impact to cod high intensity spawning habitat - as a result of disturbance from underwater noise - could be assessed 'alone' as minor. Through the DCO process, we have advised the Applicant that by adopting the same approaches applied for herring, that the impact should be assessed as moderately adverse during the breeding season.	<p>NRW (A)'s position is noted by the Applicant. Please see the response in Row 63 above.</p> <p>The Applicant acknowledges the risk of adverse effects to cod spawning at the mapped high intensity spawning ground in the east Irish Sea with regards to piling during the cod spawning period of January to April (Coull <i>et al.</i>, 1998; Ellis <i>et al.</i>, 2012). This is reflected in the predicted moderate adverse effect to cod at this mapped high intensity spawning ground during the spawning season concluded in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) for the Mona Offshore Wind Project cumulatively with other projects and plans (due to increased areas of ensonification should multiple projects undertake piling at the same time), which is significant in EIA terms.</p> <p>As a result of this predicted significant cumulative effect to cod as a result of piling activities, the Applicant has committed to development of an UWSMS with cod included as a key species in the Outline USWMS (J16) (as per Row 63 above). The purpose of this strategy is to apply the mitigation hierarchy, from design refinement to the application of additional measures (such as temporal management of piling, or the application of measures such as Noise Abatement Systems), where required, with stakeholder input on the measures to be adopted to manage the effects of underwater sound to non-significant levels to ensure no residual significant effect.</p> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs, including NRW (A) throughout the development of the final UWSMS. The final UWSMS and is proposed to manage the predicted significant effects of underwater sound to spawning cod as a result of the Mona Offshore Wind Project (and other relevant species). Any measures implemented will be designed to manage the contribution to both alone and cumulative effects from the Mona Offshore Wind Project. As such, the UWSMS will therefore further reduce the minor adverse and moderate adverse effects to spawning cod predicted as a</p>

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		<p>result of the Mona Offshore Wind Project alone and cumulatively using measures proportionate and appropriate to the risk.</p> <p>The Applicant does not consider it appropriate to apply the same approach as was used in the assessment for herring for the Mona Offshore Wind Project alone to cod, due to the discrete and highly substrate-specific nature of herring spawning grounds, versus the broad area available for spawning of cod within the east Irish Sea. The key risk to cod is considered to be through cumulative underwater sound, increasing the areas of spawning habitat which may be subject to ensonification, thereby reducing the available spawning habitat throughout the east Irish Sea, as outlined within the assessment presented in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3).</p>
69	<p>We have since given consideration to the Applicant's response on this matter in PDA-008 (section RR-011.41) submitted into the DCO Examination, however, our position on the Applicant's assessment of the impacts of underwater noise on cod remains unchanged. The Applicant argues that the degree of overlap with mapped spawning grounds is not used to underpin the assessment but is considered to support expert judgement alongside other parameters. This, it notes, is due to mapped spawning grounds not reflecting hard boundaries. The Applicant asserts that a number of factors are considered when defining the magnitude of impact, including the consideration of the maximum area of overlap with mapped high intensity spawning grounds. In Annex A, we have provided supporting information to our position for consideration.</p>	<p>The Applicant acknowledges NRW (A)'s position, with further detail provided in the response to Annex A in Rows 86-101 below.</p> <p>With regards to the temporal nature and intermittency of the impact referenced within Annex A of NRW (A)'s response to the Mona Offshore Wind Project standalone NRW Marine Licence application, piling is predicted to be undertaken over a maximum of 114 days for the whole project (and just 12 days in relation to the transmission infrastructure under the NRW Marine Licence, for the OSPs, as noted in Row 63 above), across a two-year piling phase. The maximum design scenario and assessment are based on construction activities potentially occurring during the cod spawning period, but for practical purposes, any activity undertaken during the cod spawning period of January to April or the reported historic peak of February to March (Coull <i>et al.</i>, 1998) is likely to be intermittent given operational constraints resulting from weather conditions during the winter period. Further, 114 days (for the whole project) represents only a small proportion of the two-year piling phase, with piling not expected to be undertaken continuously, nor continually at full power, with intermittent periods of no piling activity expected. When this is considered specifically in the context of the standalone NRW Marine Licence, a maximum of 12 days of piling for the OSP foundations represents the MDS for the transmission infrastructure, which equates to negligible proportion of the two-year piling phase.</p> <p>The Applicant acknowledges the sensitivity of cod to underwater sound effects (which is defined as high in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3)), however based upon a proportionate assessment of the magnitude of the impact (concluded as low), the overall conclusion of significance is considered minor adverse for the project alone.</p>

Ref. No.	Comment	Response
		<p>The Applicant has predicted a potential moderate adverse effect to cod at the east Irish Sea mapped high intensity spawning ground during the spawning season in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) for the Mona Offshore Wind Project cumulatively with other projects and plans (due to increased areas of ensonification should multiple projects undertake piling at the same time), which is significant in EIA terms. This approach is highly precautionary, as it considers piling associated with the whole project and not just that which the Applicant expects to be licensed under the standalone NRW Marine Licence.</p> <p>Please refer to the Applicant’s response to Reference 68 for further details with regards to the Applicant’s proposed approach to manage the effects of underwater sound to non-significant levels.</p>
70	<p>Taking into consideration both the spawning behaviour exhibited by cod, and their known hearing sensitivity and vulnerability to anthropogenic noise (including piling impacts), we consider the current approach presented by the Applicant is not sufficiently precautionary to fully assess the impacts of underwater noise to cod.</p>	<p>The Applicant notes NRW (A)s comment, and also notes the response provided by NRW (A) within Section 42 consultation for the Mona Offshore Wind Project agreeing that cod be considered of medium sensitivity to underwater sound impacts (please see the Consultation report (E3)).</p> <p>Based upon Section 42 consultation responses from the MMO/Cefas, the Applicant determined that a more precautionary approach was necessary in defining the sensitivity of cod (as discussed during Expert Working Group (EWG) meeting 4, July 2023; the Consultation report (E3)), and as such, the sensitivity of cod to underwater sound impacts was subsequently defined as “high” within Volume 2, Chapter 3: Fish and shellfish ecology (F2.3), thereby ensuring a precautionary approach to assessment. This increase in the sensitivity of cod was agreed by NRW (A) during EWG meeting 4 (July 2023; the Consultation report; Document Reference E3).</p> <p>Please refer to the Applicant’s response to Reference 68 above.</p>
71	<p>We continue to advise that the Applicant should reassess the impacts to cod in line with the methods applied for herring.</p>	<p>The Applicant does not consider it appropriate to apply the same approach as was used in the assessment for herring for the Mona Offshore Wind Project alone to cod, due to the discrete and highly substrate-specific nature of herring spawning grounds, versus the broad area available for spawning of cod within the east Irish Sea. The key risk to cod is considered to be through cumulative underwater sound, increasing the areas of spawning habitat which may be subject to ensonification, thereby reducing the available spawning habitat throughout the east Irish Sea, as outlined within the assessment presented in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3).</p>

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72	<p>NRW (A) does not agree with the Applicant that a duration of 114 days for predicted piling over a 2-year period can be considered an intermittent impact. Although the noise produced is temporary in nature, the impact is not, with the potential to directly affect two years/ two spawning cohorts of the species, with indirect impacts for subsequent cohorts. We advise that restricting piling activity to outside of the peak spawning activity period (February and March) is necessary in order to mitigate the impacts of the proposed development on cod species. This can be secured through the UWSMS, which is advised to be conditioned as part of the standalone Marine Licence.</p>	<p>As presented within the Outline UWSMS (J16) seasonal scheduling of piling is one of a range of measures that will be considered, as required, in the development of the final UWSMS, post-consent.</p> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs, including NRW (A) throughout the development of the final UWSMS to ensure it is considered adequate to manage effects to herring and cod from underwater sound to non-significant levels.</p> <p>The commitment to the UWSMS is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence. Further detail on this matter is provided in Rows 68 and 69 above.</p>
73	<p>3.2.2.2 Approaches used for cod and herring – noise thresholds</p> <p>The proposed approach for Cod uses a noise impact threshold of 160db [APP-055]. Using this threshold, which NRW (A) does not consider to be precautionary, the proportion of high intensity spawning ground overlapped with modelled noise impact zones is greater than 20% for the project alone.</p>	<p>The Applicant notes NRW(A)'s comment.</p> <p>The assessment of behavioural effects to cod from underwater sound is drawn from multiple studies for fish of various Groups (1 to 4, according to Popper <i>et al.</i>, 2014; e.g. Pearson <i>et al.</i>, 1994; McCauley <i>et al.</i>, 2000; Fewtrell and McCauley, 2012; Mueller-Blenkle <i>et al.</i>, 2010; please see paragraph 3.9.3.42 to 3.9.3.45 of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3)), as opposed to reliance on a single study (such as just Mueller-Blenkle <i>et al.</i>, 2010).</p>
74	<p>Cod displayed a variety of behavioural reactions to piling noise from 140db re 1 µPa Peak in one study (Mueller-Blenkle <i>et al.</i> 2010), including freezing and changing direction and altering swimming speed. Whilst this study was not intended to show a threshold for noise related impacts on the species, it does show an indication that piling noise from 140db may have an impact on cod. During the sensitive spawning period for the species in which sound and hearing play a pivotal role in their behaviour and activities, this could be highly detrimental to the species.</p>	<p>Whilst Mueller-Blenkle <i>et al.</i> (2010) noted an observable behavioural response in cod at sound levels of 140 dB to 161 dB re 1 µPa SPL<sub>pk</sub>, based upon playback of piling sounds, the study also noted considerable variation in the responses by individual fish and a decrease in responses following multiple exposures to the playback sound. It should also be noted that this study is based upon tank-reared caged fish as opposed to free-swimming individuals, therefore the application of these responses to wild fish in their natural environment should be applied with a high degree of caution. Further, measurements were taken at up to 100 m from the playback sound source, therefore extrapolation of this data beyond the measured distance (i.e. the ranges of kilometres applicable to behavioural effects for the Mona Offshore Wind Project) should be interpreted with caution due to changes in the way sound is perceived at greater distances from the source, with impulsive sounds transforming to non-impulsive sounds as they propagate away from the source (Martin <i>et al.</i>, 2020).</p> <p>The approach to assessment of behavioural effects to cod in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3), using a threshold level of 160 dB re 1µPa</p>

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		<p>SPL<sub>pk</sub> has been presented and discussed during the second Expert Working Group Meeting (EWG) in November 2022 and the third EWG in March 2023 (the Consultation report (E3)), and was used to support assessment of behavioural effects to cod in the Preliminary Environmental Information Report (Mona Offshore Wind Ltd., 2023); no objections to the use of this metric or threshold were raised by members of the EWG.</p> <p>The Applicant therefore considers the threshold of 160 dB re 1µPa SPL<sub>pk</sub> sufficiently precautionary to assess the risk of potential behavioural effects to spawning cod. This is reflected in the predicted potential moderate adverse effect to cod during the spawning period due to underwater sound from piling from the Mona Offshore Wind Project cumulatively with other projects and plans within Volume 2, Chapter 3: Fish and shellfish ecology (F2.3).</p> <p>This is proposed to be managed through the development of an UWSMS, an Outline of which is provided with the Application (J16). The purpose of this strategy is to apply the mitigation hierarchy, from design refinement to the application of additional measures, where required, with stakeholder input to manage the effects of underwater sound to non-significant levels to ensure no residual significant effect.</p> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs, including NRW (A) throughout the development of the final UWSMS. The final UWSMS is proposed to manage the predicted significant effects of underwater sound to spawning cod as a result of the Mona Offshore Wind Project (and other relevant species). The measures implemented will be designed to manage the contribution of the Mona Offshore Wind Project to cumulative effects and will likewise manage project alone effects. As such, the UWSMS will, therefore, further reduce the minor adverse and moderate adverse effects to spawning cod predicted as a result of the Mona Offshore Wind Project alone and cumulatively, respectively using measures proportionate and appropriate to the risk.</p>
75	<p>In contrast, the overlap with noise impacts on Herring spawning ground has been calculated using 135db threshold [APP-055], as a precautionary approach, which is welcomed. This advice was based on a study by Hawkins et al. (2014), showing behavioural responses by sprat and mackerel to piling sounds including break up of school formations.</p>	<p>The Applicant welcomes NRW (A)'s agreement on the use of the 135 dB threshold for assessing behavioural effects to herring from underwater sound generated by piling. Please refer to the Applicant's response to Row 71 above for justification of the difference in approach between herring and cod.</p>

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76	<p>NRW advise that the Applicant runs the 140db threshold through the noise model so that the impact on spawning Cod can be fully assessed. We consider this threshold is more appropriate for cod during their sensitive spawning period and would display a more accurate extent of the area impacted by piling noise.</p>	<p>Please refer to the Applicant's response to Row 73 above.</p> <p>The Applicant considers the threshold of 160 dB re 1µPa SPL<sub>pk</sub> sufficiently precautionary to assess the risk of potential behavioural effects to spawning cod. This is reflected in the predicted potential moderate adverse effect to cod during the spawning period due to underwater sound from piling from the Mona Offshore Wind Project cumulatively with other projects and plans within Volume 2, Chapter 3: Fish and shellfish ecology (F2.3).</p>
77	<p>3.2.2.3 Sound exposure levels for assessing impacts</p> <p>NRW (A) previously noted in its Relevant Representation submitted during the DCO process [RR-0.11] that the Applicant had been advised to use the Popper et al. (2014) Sound Exposure Guidelines to assess impacts from underwater noise, and specifically that sound levels from impact piling were described using Cumulative Sound Exposure Levels (SEL<sub>cum</sub>) in order to reflect the cumulative exposure from the total piling event. We noted in RR-011 that we consider the SEL<sub>cum</sub> threshold is likely to be lower than the Peak Sound Pressure Levels (SPL<sub>pk</sub>) used to assess the percentage of cod spawning habitat affected and therefore the 21.64% presents a potential underestimate of the area ensonified. We note the Applicant's response to this matter in PDA-008, section RR-011.42. Whilst the Applicant has provided some narrative around their approach, we remain unclear on some of the points raised. It is our understanding that owing to the nature of what is being measured, SPL<sub>pk</sub> (peak levels) and SEL<sub>cum</sub> (a sum of the level over multiple piles) cannot be directly compared given they are different metrics and can't be converted between the two. As such we are not clear on the validity of the argument on the use of SPL<sub>pk</sub> data as compared to SEL<sub>cum</sub> data, as a precautionary measure. We advise that further clarity is provided by the Applicant on this matter.</p>	<p>The Popper <i>et al.</i> (2014) criteria for behavioural effects to fish is qualitative only, and not based upon specific sound thresholds (based upon risks in the near, intermediate and far fields), as presented within Table 3.27 of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3).</p> <p>The 21.64% overlap with the mapped high intensity cod spawning ground presented within Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) is based upon a behavioural threshold of 160 dB re 1µPa SPL<sub>pk</sub>.</p> <p>The use of specific metrics for behavioural assessment is derived from the available peer-reviewed literature, and a wide range of studies are based around the use of the SPL<sub>pk</sub> metric. As outlined above, there is no SEL<sub>cum</sub> threshold defined for behavioural effects in Popper <i>et al.</i> (2014), or other information sources relating to impacts to fish and shellfish receptors, therefore the SPL<sub>pk</sub> metric is considered the most appropriate for the assessment of potential behavioural effects to cod.</p> <p>Injury ranges for cod, based upon the thresholds outlined within Popper <i>et al.</i> (2014), are presented as Mortality, Recoverable Injury and Temporary Threshold Shift (TTS) in Table 3.21 (SPL<sub>pk</sub>), 3.22 (SEL<sub>cum</sub>), 3.23 (SEL<sub>cum</sub>), 3.24 (SEL<sub>cum</sub>) and 3.25 (SEL<sub>cum</sub>) of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3). These are based upon physiological injury are therefore not considered suitable for use as a proxy for behavioural effects. Visual representations of the SEL<sub>cum</sub> ranges for Mortality, Recoverable Injury and TTS, drawn from the SEL<sub>ss</sub> contour data are shown in Figure 3.9 and Figure 3.11 of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3).</p>
78	<p>The Applicant also states that SEL<sub>cum</sub> is derived from SEL<sub>ss</sub>, again it is not clear how this was done as each measure different aspects of the noise level. We advise that a clearer explanation is provided by the Applicant. This would allow NRW (A) to fully understand and therefore advise further and provide a more accurate opinion of the noise modelling approaches adopted.</p>	<p>The contour decibel levels presented in Figure 3.8, 3.9, 3.10 and 3.11 of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) are derived from the contours generated for the single strike sound exposure level (SEL<sub>ss</sub>) metric to provide a visual representation of the relevant cumulative sound exposure level (SEL<sub>cum</sub>) thresholds. This is based upon the injury ranges (Temporary Threshold Shift; TTS, recoverable injury and mortality) outlined within Table 3.22, 3.23 and 3.24 of</p>

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		<p>Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) for Group 3 and 4 fish, drawn directly from Volume 5, Annex 3.1: Underwater sound technical report (F5.3.1).</p> <p>The SEL<sub>ss</sub> contour decibel values are included within Figure 3.8, 3.9, 3.10 and 3.11 of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) for transparency.</p>
79	<p>3.2.2.4 Underwater Sound Management Strategy (UWSMS)</p> <p>We welcome the commitment that that the UWSMS will be secured within the standalone Marine Licence, but the strategy will need to continue to be developed to continue to ensure it is fit for purpose - particularly with reference to cod. We note that the outline UWSMS (section 1.8.2.6 [APP-202]) includes potential spatial and temporal phasing measures relating to herring but it currently does not include specific measures relating to Cod. We advise that Cod should be explicitly considered and included as a receptor within the strategy, also requiring mitigation measures to ensure that the Irish Sea population is not adversely impacted from piling and other noisy activities during the sensitive spawning period. See our expanded comments above and in Annex A regarding noise impacts to Cod.</p>	<p>The Outline UWSMS (J16) submitted with the Application provides an overview of several options for measures that will be investigated through the application of the mitigation hierarchy. These measures are not fixed and are, in some cases, used as examples of measures which could be used to reduce underwater sounds impacts, including with reference to herring. Other measures may be investigated where deemed appropriate and if required. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's intention to continue to consult with relevant SNCBs, including NRW (A) throughout the development of the final UWSMS.</p> <p>The final UWSMS will consider forthcoming policy changes alongside the final project design and construction schedule to ensure the measures proposed to mitigate impacts to spawning cod to non-significant levels are proportionate and appropriate to the risk, as per the response to Row 63 above.</p> <p>The risks to spawning cod are explicitly acknowledged within Table 1.4 of the Outline UWSMS (J16), and specific measures to support the management of cumulative effects to cod to non-significant will be developed post-consent, in consultation with stakeholders, including NRW (A) as part of the final UWSMS.</p> <p>The Applicant would welcome the opportunity to engage with NRW (A) to further develop the UWSMS. The Applicant proposes that any amendments to the Outline UWSMS (J16) are agreed upon and carried through to be implemented post-consent, when the final design and construction parameters are available.</p>
80	<p>NRW (A) strongly encourages the Applicant to continue to engage with us in developing the strategy during the consenting process and parallel DCO examination process (as far as is reasonable and appropriate) and post-consent. Providing the UWSMS is properly developed with NRW (A) and achieves the aims of reducing the impact of noise on both herring and cod spawning, then additional validation monitoring of the impacts of the Mona project should not be required.</p>	<p>The Applicant notes NRW (A)'s comment with thanks and will continue to engage with NRW (A) regarding the UWSMS.</p>
81	<p>In addition, embedded mitigation approaches proposed such as the use of soft start and ramp up procedures have limited evidence that</p>	<p>The Applicant notes NRW (A)'s position. The Applicant has stated within Table 3.19 of Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) that these</p>

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	support their effectiveness in reducing noise disturbance impacts to fish, which is NRW (A)'s primary concern for spawning cod. We would welcome further discussion with the Applicant on this matter.	measures may benefit "some" species of fish, given that fish is such a broad group of organisms, and acknowledge that these measures may not be of benefit to all fish species. This has been considered when assessing the impacts of underwater sound on fish and shellfish ecology receptors.
82	NRW (A) welcomes the commitment to secure the UWSMS in the dML and advise that it is also secured in the standalone ML. NRW (A) will need to be consulted, in writing, on the suitability of the UWSMS.	The Applicant welcomes NRW (A)'s comment and will continue to engage with NRW (A) regarding the UWSMS.
83	A stated at 3.2.2.1 above, NRW (A) does not agree with the Applicant that a duration of 114 days for predicted piling over a 2-year period can be considered an intermittent impact, and advise that restricting piling activity to outside of the peak spawning activity period (February and March) is necessary in order to mitigate the impacts of the proposed development on cod species. This can be secured through the UWSMS. We welcome the commitment from the Applicant that the UWSMS will be secured via condition in the standalone ML. We agree that this is required and advise that NRW (A) will need to be consulted, in writing, on the suitability of the UWSMS.	The Applicant notes NRW (A)'s position. Please refer to the Applicant's responses to Rows 69 and 72 above.
84	3.2.2.5 Additional Comments NRW (A) are in agreement with the conclusions made in respect to the other impacts scoped into the Applicant's assessment (temporary habitat loss/disturbance; increased suspended sediment concentrations (SSC) and associated sediment deposition; long term habitat loss; Electromagnetic fields (EMFs) from subsea electrical cabling; introduction of artificial structures and colonisation of hard structures; disturbance/ remobilisation of sediment bound contaminants; injury due to increased risk of collision with vessels). No specific mitigation has been proposed for these, except for project embedded measures, which NRW (A) agrees are appropriate.	The Applicant notes NRW (A)'s comment with thanks.
85	3.2.3 European Protected Species (EPS): We do not consider that the works have the potential to impact EPS species.	The Applicant notes NRW (A)'s comment with thanks.
86	3.2.4 Environment (Wales) Act 2016 (Habitats / Ecosystems):	The Applicant notes NRW (A)'s comment with thanks.

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	<p>There is the potential for works such as sandwave clearance activities to impact fish that spawn on or near the seabed, however NRW (A) agree with the Applicant's assessment of minor adverse within the fish and shellfish ecology document (F2.3) due to the temporary nature of the activity, the limited extent of suitable substrate available within the construction envelope for herring and the extent of available habitat that would remain for sandeel populations.</p>	
87	<p>3.2.5 Marine and Coastal Access Act Part 5: Nature Conservation: No comment – Skomer MCZ does not have any designated fish features.</p>	<p>The Applicant notes NRW (A)'s comment with thanks.</p>
88	<p>3.2.6 Water Framework Directive: NRW (A) agrees with the WFD assessment made by the Applicant, in which it was assessed that there will be no potential impacts for fish within the North Wales or Clwyd water bodies.</p>	<p>The Applicant notes NRW (A)'s comment with thanks.</p>
89	<p>Annex A – Fish and Shellfish Ecology Further Detail Please find below further detail on cod habitat and the long-term nature and permanence of potential impacts from the proposed development, to evidence concerns raised regarding cod at section 3 of our comments.</p>	<p>The Applicant notes NRW (A)'s comment.</p>
90	<p>Populations of cod, a section 7 species under the Environment (Wales) Act 2016, are known to reside in the Irish Sea. Most of the Irish Sea population remain within area, demonstrate limited mixing with neighbouring populations, and the population is understood to be severely depleted. It is also known that cod spawning takes place in and around the proposed Mona project area - this is indicated by the density maps provided within the application documentation. Whilst we agree with the Applicant that suitable cod habitat exists across the Irish Sea, the spawning and nursery maps presented (e.g. figure 1.4 in APP-089) show areas of 'hotspots' i.e., the spawning and nursery locations for the species are not evenly distributed and spawning intensity differs across the region. There is a hotspot for adult cod in the vicinity of the proposed works shown by modelled density maps (Campanella and Van der Kooij, 2021) and a juvenile presence in the area during both cod spawning</p>	<p>The Applicant acknowledges NRW (A)'s position and Annex A of NRW (A)'s response to the Mona Offshore Wind Project standalone NRW Marine Licence application.</p> <p>With regards to the temporal nature and intermittency of the impact referenced within Annex A, whilst piling is predicted to be undertaken over a maximum of 114 days for the generation and transmission assets together (and just 12 days in relation to the transmission infrastructure under the standalone NRW Marine Licence, for the OSPs, as noted in Row 63 above), across a two-year piling phase, it is considered highly unlikely that much of this activity will be undertaken during the cod spawning period of January to April, or the reported historic peak of February to March (Coull <i>et al.</i>, 1998), given operational constraints during the winter period. Further, 114 days represents a small proportion of the two-year piling phase, with piling not expected to be undertaken continuously, nor continually at full power, with intermittent periods of no piling activity expected.</p>

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	Quarter 1 (February to April) and Quarter 4 (September to December).	When this is considered specifically in the context of the standalone NRW Marine Licence, a maximum of 12 days of piling for the OSP foundations represents the MDS (Maximum Design Scenario) for the transmission infrastructure, which equates to a negligible proportion of the two-year piling phase.
91	NRW (A) agrees that uncertainty exists within the spawning and nursery grounds data, however the lack of a hard boundary around the data does not necessarily mean that spawning grounds are being over-represented. Equally an under-representation could exist, should areas that are important be misinterpreted or not surveyed.	The Applicants acknowledges the sensitivity of cod to underwater sound effects (which is defined as “high” in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3)), however based upon a proportionate assessment of the magnitude of the impact (concluded as low), the overall conclusion of significance is considered minor adverse for the project alone.
92	It is understood that most Irish Sea cod remain within the Irish Sea management area (International Council for the Exploration of the Sea [ICES] area 7a), with a high site fidelity reported (Fox et al. 2000). A study by Neat et al. (2014) which tagged and released cod within their management sections and followed their movements, showed limited mixing between stocks, with Irish sea stocks having a restricted feeding and spawning range compared to other stocks around the UK. This therefore highlights the importance of this site for cod spawning and should therefore be considered on a more precautionary basis.	The Applicant has predicted a potential moderate adverse effect to cod at the east Irish Sea mapped high intensity spawning ground during the spawning season in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3) for the Mona Offshore Wind Project cumulatively with other projects and plans (due to increased areas of ensonification should multiple projects undertake piling at the same time), which is significant in EIA terms. Regardless of the difference in position, as a result of this predicted significant effect to cod, the Applicant has committed to development of an UWSMS, an outline of which is provided with the Application (J16). As set out in Row 63 and other responses above, this will be used to manage the effects of underwater sound on spawning cod (and herring) with mitigation focused on the management of contributions to cumulative underwater sound inputs by the Mona Offshore Wind Project to non-significant levels to ensure no residual significant effect.
93	Recruitment in 2023 of Cod in ICES section 7a (Irish sea) was 896,000 individuals (95% confidence interval of 0-2,337,000), the lowest ever recorded (ICES, 2024). Disturbance from the Mona project during the sensitive spawning period covering over 20% of the spawning ground for cod, could significantly impact the recruitment of the species in each of the two piling years, which will slow or prevent the recovery of the cod population which is already much depleted in the Irish Sea.	The drafting of the standalone NRW Marine Licence is entirely within NRW MLT’s control. However, it is the Applicant’s intention to continue to consult with relevant SNCBs, including NRW (A) throughout the development of the final UWSMS. This ensures that concerns regarding underwater sound impacts can be fully addressed with appropriate and proportionate measures implemented, where necessary, based upon the final project design and construction schedule and taking account of underwater sound policy at that time.
94	ICES have advised a zero Total Allowable Catch (TAC) for 2024, based on precautionary considerations (ICES, 2024). A stock recovery plan for the species has been in place since 2002, with a recovery plan implemented in 2003. Zero catches have been advised for 18 of the 23 years since then. This demonstrates the sensitivity of the species and the long recovery rates for the population as a whole.	The Applicant does not consider it appropriate to apply the same approach to assessment for herring for the Mona Offshore Wind Project alone to cod, due to the discrete and highly substrate-specific nature of herring spawning grounds, versus the broad area available for spawning of cod within the east Irish Sea. The key risk to cod is considered to be through cumulative underwater sound, increasing the areas of spawning habitat which may be subject to ensonification, thereby reducing the available spawning habitat throughout the east Irish Sea, as
95	Cod are hearing specialists, possess anatomical adaptations for hearing, are known to be sensitive to both sound pressure and particle motion (Popper et al. 2019). They display complex courtship	

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	<p>and mating behaviour during the spawning season, in which sound and hearing play a pivotal role in finding and attracting mates (Kasumyan, 2009). During the breeding season males protect and defend individual territories (leks) and 107 produce ‘grunts’ and other noises produced by the swim bladder which attract females. Spawning is dependent on female choice in response to the males vocal and behavioural courtship displays.</p>	<p>outlined within the assessment presented in Volume 2, Chapter 3: Fish and shellfish ecology (F2.3).</p>
96	<p>Anthropogenic noise impacts have been shown to affect larval and juvenile growth and survival. It has been demonstrated that chronic noise exposure in cod during spawning can result in a significant reduction in total egg production and fertilisation rates, reducing the total production of viable embryos by over 50% (Sierra-Flores et al. 2015). Studies have shown that exposure to regular anthropogenic noise results in cod larvae using their yolk sac faster, with lower body width-length ratios, and were easier to catch in predator avoidance experiments than the control fish (Nedelec et al. 2015).</p>	
97	<p>In addition, fish are likely to be more impacted by external stressors during spawning as they tend to be at their poorest body condition during this time. Catch rates of spawning cod are known to be higher than at other times of the year (De Jong et al. 2020). Stressed mates initiate fewer courtships (Morgan et al. 1999), which could result in a further impact to the population. As demonstrated by these studies, the additional stress placed on the population in their spawning habitat from underwater noise as part of the proposed development could severely impact the growth of the cod population.</p>	
98	<p>Irish sea cod are known to stay within a limited area displaying minimal mixing with other nearby stocks (Fox et al. 2000). The impact of piling noise predicting to cover more than 20% of the high intensity spawning grounds over two spawning seasons could impact the success of the cohorts (affecting number and health of offspring produced), with impacts on the overall fitness of the population.</p>	
99	<p>The Cod population in the Irish Sea is in poor condition and vulnerable to disturbance impacts, therefore further impacts to</p>	

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	<p>spawning such as introduction of anthropogenic noise are likely to prevent or slow recovery to sustainable population levels.</p>	
100	<p>NRW (A) does not agree with the Applicant that a duration of 114 days for predicted piling over a 2-year period can be considered an intermittent impact. Although the noise produced is temporary in nature, the impact is not, with the potential to directly affect two years/ two spawning cohorts of the species, with indirect impacts for subsequent cohorts.</p>	
101	<p>Taking into consideration both the spawning behaviour exhibited by cod, and their known hearing sensitivity and vulnerability to anthropogenic noise, we consider the current approach presented by the Applicant is not sufficiently precautionary to fully assess the impacts of underwater noise to cod.</p>	
102	<p>4. Physical Processes 4.1 Main Matters Clarity is required with respect to the Applicant's intention for cable protection in shallow water at the exit pits. No assessment has been carried out to determine how the potential placement of cable protection in the shallow nearshore environment would impact on coastal and physical processes.</p>	<p>Please refer to the Applicant's response to Row 110 below.</p>
103	<p>NRW (A) advise that consideration should be given to the obstruction to the bedload sediment transport pathways both alongshore and onshore/offshore, and the potential impact on wave diffraction and wave refocussing on the coast, to ensure that the assessment of physical process is as complete and robust as possible.</p>	
104	<p>4.2 Detailed comments NRW (A) agrees that the baseline description of physical processes through the desktop review of existing literature and existing data sources, project specific surveys and numerical modelling baseline scenarios are sufficient to appropriately characterise the study area (Export Cable Corridor).</p>	<p>The Applicant notes and welcomes NRW (A)'s response.</p>
105	<p>NRW (A) agrees with the Numerical modelling approach and scenarios conducted in relation to hydrodynamics, waves and</p>	<p>The Applicant notes and welcomes NRW(A)'s response.</p>

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	sediment transport to inform the potential changes on Constable Bank, Menai Strait and Conwy SAC and the adjacent coast arising from the construction, operation and decommissioning of Mona Offshore Wind Farm.	
106	NRW (A) note in the <i>Mitigation and Monitoring Schedule</i> (J10) and the <i>Marine Licence Principles</i> document (J9 F04), the commitment of the Applicant to the development of, and adherence to, an Offshore Construction Method Statement (CMS) including a cable specification and installation plan (CSIP) detailing the commitments to minimise the potential impacts to Constable Bank (an Annex 1 habitat outside of an SAC), the habitats and species within the Menai Strait and Conwy Bay SAC and the intertidal area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS). We welcome this commitment and agree that the offshore CMS should be secured via condition in the TA ML (and the dML as appropriate). We request that we are consulted in writing on the suitability of the offshore CMS.	The Applicant notes and welcomes NRW(A)'s responses and will continue to consult NRW (A) with regard to the Offshore Construction Method Statement.
107	NRW (A) welcomes the confirmation from the Applicant that no cable protection will be installed within Constable Bank Subject to the resolution of matters relating to the assessment of cable protection at the nearshore zone (see para 5.2.4 below), we welcome and agree with the mitigation measures proposed by the Applicant with respect to Physical processes i.e. the commitment that no cable protection will be placed on Constable Bank, that no cable protection higher than 70 cm will be installed within Menai Strait and Conwy Bank SAC and that cable protection will be up to 10 m wide, kept low profile, and will be no more than 5% reduction water depth. These commitments are noted in J10 and J9 and will be secured via the offshore CMS. We agree that they should be included as a condition in the TA ML (and the dML). NRW (A) requests that we are consulted, in writing, on the suitability of the offshore CMS prior to commencement of activities.	
108	NRW (A)'s Relevant Representation [RR-011] into the DCO process, requested clarification from the Applicant as to whether cable protection would be required on the Horizontal Directional Drill (HDD) exit pits in the shallow water nearshore zone, and we further advised that if cable protection was required, then the potential	Please refer to the Applicant's response to Row 110 below.

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	<p>impacts to physical processes would require assessment. Via documentation submitted into the DCO examination, the Applicant has responded [e.g. RR-011.51 PDA-008] by stating that up to 4 exit pits would be located seawards of MLWS and that, as with other remedial cable protection, cable protection at the exit pits would be avoided wherever possible. The Applicant further noted that that in the event that the export cable exit pits (seaward of MLWS) required cable protection in the form of mattresses or rock bags, the width and height of the cable protection at the exit pits would be subject to the same commitments as for the whole Mona Offshore Cable Corridor.</p>	
109	<p>We have further reviewed ES Volume 2, Chapter 1: Physical processes [F2.1] and ES Volume 6, Annex 1.1: Physical processes technical report [F6.1.1], and note that the numerical modelling conducted to determine the impact to physical processes caused by cable protection, included the Offshore windfarm array scour protection, and a short section of cable protection along the offshore cable corridor offshore of Constable Bank (see sections 1.3.66 and 1.3.6.8 of F6.1.1) - all of which were in <i>deep</i> water. The modelled outputs showed very small changes to the currents and waves and therefore concluded (based on the findings) that there would be no interaction with the shoreline or nearshore banks and morphology.</p>	<p>The modelling undertaken and presented in ES Volume 6, Annex 1.1: Physical processes technical report (F6.1.1), used an indicative layout and applied cable protection in regions where trenching may potentially be more difficult (i.e. in the vicinity of moraines comprised glacial till) and where inter-array cable connects with generating assets. The offshore export cable protection was applied with a height of 3 m and 10 m width with cable crossings 3 m in height, 30 m width and 50 m length in these areas. This was considered to be the Maximum Design Scenario as it applied the maximum cable protection height in a realistic situation.</p> <p>With respect to undertaking modelling of cable protection in shallow water, the commitment to limit change in water depth to 5% means that the height of cable protection above bed level is restricted (see Row 110 below). For example, a water depth of 5 m to Chart Datum cable protection would be limited to 250 mm above bed level. This order of magnitude of bed level change, even within the context of the detailed model area, would be sufficiently small that the impacts on coastal processes would not be discernible in the model output. The application of modelling would, therefore, not be appropriate in this case.</p> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that the standalone NRW Marine Licence will secure a cable specification and installation plan including the commitment to no more than a 5% reduction in water depth in the same manner as the deemed Marine Licence as indicated in the Marine Licence Principles Document (J9 F04).</p>
110	<p>However, NRW (A) advises that no physical processes assessment has specifically been carried out to determine how placement of cable protection in the <i>shallow</i> nearshore environment, so close to the coast, would impact on the coastal processes (including any</p>	<p>The Applicant is committed to the development and adherence to an Offshore Construction Method Statement, including a Cable Specification and Installation Plan (CSIP) which will include cable burial where possible and cable protection, as set out in the Mitigation and Monitoring Schedule (J10 F04)). The Mitigation</p>

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	<p>potential changes to bathymetry and wave transformation processes). In the event that cable protection is to be placed over the four exit pits in the nearshore, NRW (A) continue to advise the Applicant that consideration should be given to the obstruction to the bedload sediment transport pathways both alongshore and onshore/offshore, and the potential impact on wave diffraction and wave refocussing on the coast, to ensure that the assessment of physical process is as complete and robust as possible.</p>	<p>and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence. The Applicant recognises that the best form of cable protection is achieved through cable burial to the required depth and it is therefore not the Applicant’s intention to place cable protection in shallow water but to avoid this if at all possible.</p> <p>The Applicant aims to avoid the requirement for cable protection in the shallow nearshore environment by achieving the minimum burial depth of 0.5 m for the offshore export cables (as detailed in Volume 1, Chapter 3: Project Description (F1.3) and subject to confirmation in the Cable Burial Risk Assessment undertaken post-consent). This includes burial of the cable ducts at the exit pits (seaward of Mean Low Water Springs (MLWS)) for the installation of export cables under the intertidal area via trenchless techniques. The Applicant is committed to ensure that no more than a 5% reduction in water depth (referenced to Chart Datum) will occur at any point along the Mona Offshore Cable Corridor delivered through a cable specification and installation plan.</p> <p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT’s control. However, it is the Applicant’s anticipation that the standalone NRW Marine Licence will secure a cable specification and installation plan including the commitment to no more than a 5% reduction in water depth in the same manner as the deemed Marine Licence as indicated in the Marine Licence Principles Document (J9 F04).</p> <p>The Applicant confirms that the height of the cable protection above the seabed may be altered in relation to the given water depth at any point along the Mona Offshore Cable Corridor in order to adhere to the commitment, ensuring that any cable protection is sufficiently low profile to cause minimal changes to wave, tide and sediment transport. Thus, implicitly the detailed design (either by location, installation methodology or type of cable protection) will ensure there are no significant impacts and, for this reason, no physical processes assessment has specifically been undertaken for placement of cable protection in the shallow nearshore environment.</p> <p>The only factor that could prevent the minimal burial depth from being achieved would be challenging ground conditions (e.g. extremely hard substrates, boulders or rock outcrops). Geotechnical site investigations were undertaken in 2022 and 2023 and confirmed that the Mona Offshore Cable Corridor is dominated by circalittoral sediments (as per paragraph 1.5.1.22 of Volume 2, Chapter 1: Physical processes (F2.1) therefore in shallow waters, inshore of the Constable Bank, the Applicant is confident that cable trenching and burial may be</p>

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		<p>undertaken and the laying of cables directly on the seabed with the associated cable protection would not be required.</p> <p>Only in the specific case where the full target burial depth cannot be achieved would cable protection be needed. In this case, where cables are installed below the bed level, cable protection measures will be tailored to the specific location to ensure that sediment transport continues unhindered and the wave climate is not notably altered, i.e. adherence to the commitment, ensuring that any cable protection is sufficiently low profile to cause minimal changes to wave, tide and sediment transport. For example, this may include provision of concrete matting typically 0.3 m in height overlaying the cable and completely or partially buried within the trench.</p> <p>Additionally, the Applicant is committed to conducting a detailed Cable Burial Risk Assessment and Burial Assessment Study, which will be included within the CSIP prior to cable laying and which will confirm the locations requiring cable protection along the cable corridor and outline the measures to be taken to ensure adherence to the commitments.</p>
111	<p>NRW (A) welcomes the use of HDD at landfall to minimise the environmental impact of trenching on conservation features in the intertidal area between MHWS and MLWS. We also welcome that no maintenance works will be undertaken in the intertidal zone during the operations and maintenance phase. We advise that the design and installation of the cable to landfall should take account of the natural envelope of beach profile change and the future erosion of the backshore. It is fundamental that the depth of installation across the intertidal is sufficient to minimise any future risk of exposure over the life of the windfarm due to short-term beach draw-down during storms or long-term beach erosion.</p>	<p>The Applicant reiterates that further detailed onshore and offshore geotechnical investigations will be conducted at the landfall to assess the suitability of the ground in relation to the trenchless technique that is to be adopted. This will include consideration of the natural envelope of beach profile change over time to inform the final detailed design of the duct profile to avoid the risk of cable exposure. This information has been included in the updated Landfall Construction Method Statement (J26.14 F03).</p> <p>Details of the final design will be included within the final Landfall Construction Method Statement. This is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence.</p>
112	<p>NRW (A) acknowledge that geotechnical site investigations were undertaken in 2022 and 2023 to confirm the technical feasibility of, and commitment made to, the use of trenchless techniques under the intertidal area as set out in section 1.4 of the Outline Landfall Construction Method Statement (LCMS) (J26.14). NRW (A) note that further detailed onshore and offshore geotechnical investigations will be conducted at the landfall, including establishing the depth of burial requirements to avoid the risk of exposure. To ensure that depth of burial is below the natural envelope of beach profile change, we advise that any available beach profile data and</p>	

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	<p>project survey data is used to characterise the beach behaviour over the winter and summer, in addition to the geotechnical investigations, and included in the Landfall Construction Method Statement (J26.14).</p>	
113	<p>NRW (A) note, through the suite of TA ML documents, that, J26 <i>Outline Code of Construction Practice</i>, and J26.14 <i>Outline Landfall Construction Method Statement</i> are considered not required, or not relevant, for the TA ML application (see A2 Mona guide to the NRW Marine Licence Application F02). NRW (A) advise that these documents should be considered / included to inform the Marine Licence. NRW (A) request that we are consulted, in writing, with respect to the final LCMS ahead of commencement of activities. Furthermore, whilst we note the commitment to securing trenchless techniques in the intertidal is made in the <i>Marine Licence Principles document</i> [J9], we do not consider that the commitment is explicit enough in the detail provided and advise that this is rectified.</p>	
114	<p>NRW (A) acknowledges the commitment of the Applicant to conduct a detailed Cable Burial Risk Assessment and Burial Assessment Study, which will be included within the CSIP prior to cable laying, and which will confirm the locations requiring cable protection along the cable corridor. NRW (A) acknowledges the commitment that no more than 5% reduction in water depth (referenced to Chart Datum) will occur at any point along the Mona offshore cable corridor without prior written approval from the Licensing Authority in consultation with the Maritime Coastguard Agency (MCA). NRW (A) previously queried whether this commitment means that the height of the cable protection above the seabed will be altered in relation to the given water depth at that point along the export cable corridor. The Applicant has confirmed through their DCO submissions (see section RR-011.53 of PDA-008), that the height of the cable protection above the seabed may be altered in relation to the given water depth at any point along the export cable corridor in order to adhere to the commitment, ensuring that any cable protection is sufficiently low profile to cause minimal changes to wave, tide and sediment transport. We welcome that the Applicant is committed to ensure that no more than a 5% reduction in water depth (referenced to Chart Datum) will occur at any point along the Mona offshore cable corridor without prior written approval from the Licensing</p>	<p>The Applicant notes the response and will continue to consult NRW (A) regarding the Cable Specification and Installation Plan.</p>

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	<p>Authority in consultation with the MCA. We agree with the inclusion of this commitment in the TA ML as detailed in J9. NRW (A) reiterates that we will need to be consulted, in writing, on these matters.</p>	
115	<p>NRW (A) requested, during DCO Relevant Representation [RR-011], that consideration should be given to sandwave recovery monitoring to be included in post installation surveys particularly on Constable Bank, to validate the assumptions made in the ES that sandwave reformation would occur within months given the active sediment transport in the study area and the availability of recharge material. The MDS for sand wave clearance in Mona OWF cable corridor amounts to 1,504,000m<sup>3</sup> of sediment displacement. The Applicant has not agreed to our request on the basis that no significant effects were predicted with the EIA, and therefore, no further monitoring is considered to be required to test the predictions of the EIA. NRW remains of the view that sandwave recovery monitoring and post-installation monitoring will help to build on strategic evidence required to understand the regional impacts to sediment transport processes and physical processes caused by the installation of large-scale wind farm developments into the future.</p>	<p>The Offshore in-principle monitoring plan (J15), section 1.5.2.1, outlines the approach to geophysical and geotechnical surveys for engineering and design-related studies. This monitoring will be undertaken to observe the effect of sediment transport and sediment transport pathways on cable burial with specific reference to physical processes. The primary function of this monitoring is to examine changes to the seabed post-construction, and the surveys will be expected to focus on areas where active mobile seabed features, such as sandwaves, have been identified (e.g. those areas that underwent sandwave clearance during the construction phase).</p> <p>The commitment to pre- and post-construction geomorphological surveys is set out in the Marine Licence Principles Document (J9 F04). The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that the standalone NRW Marine Licence will secure the approval of a monitoring plan in line with the Offshore in-principle monitoring plan in the same manner as the deemed Marine Licence as indicated in the Marine Licence Principles Document (J9 F04).</p>
116	<p>We note that the application contains activities involving the dredge and disposal of material along the cable route with the use of a suction hopper dredger, as part of seabed preparation works ahead of cable installation. As the sediment will be retained within the dredging site and will remain within the same sediment system, and no sediment disposal will take place on Constable bank, NRW (A) has no concern with respect to these works and therefore has no further comments to make with regard to this activity. With this in mind, we reiterate our point above with regard to sandwave recovery monitoring during post-installation surveys, particularly on Constable Bank, in order to validate the assumptions made in the ES. Recovery monitoring of sandbanks will support statements made in the submitted documentation that sandbanks will recover in the short-term and will also help to inform future work. We suggest that this could be secured within the TA ML (and dML where appropriate).</p>	<p>While the Mona Offshore Wind Project application did not identify any potential significant effects on physical processes and, therefore, monitoring to test the predictions of the impact assessment is not required (as outlined in section 1.9.7 of Volume 2, Chapter 1: Physical processes (F2.1), the Applicant confirms that the hydrographic and side scan sonar surveys already committed to and the relevant data gathered will be considered in the context of sandwave recovery, particularly in relation to the Constable Bank, for information purposes. The Applicant has no objections to sharing this information with the relevant licensing authorities as part of the post-consent offshore monitoring plan. The commitment to develop a monitoring plan in accordance with the Offshore in-principle monitoring plan (J15) is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence.</p> <p>The surveys already committed to by the Applicant will highlight any morphological changes to the seabed, improving the evidence base for future mitigation in accordance with NPS EN-3 paragraphs 2.8.83 and 2.8.85 and best</p>

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		<p>practice guidance and principles outlined in section 1.3 of the Offshore in-principle monitoring plan (J15).</p>
117	<p>5. Benthic Subtidal and Intertidal Ecology 5.1 Main Matters</p> <p>NRW (A) requests clarification with respect to the location of cable protection in the nearshore zone close to MLWS and if it is the Applicant's intention to place cable protection at the exit pits in shallow water. The impact to benthic ecology caused by the presence of cable protection in the shallow water nearshore zone has not been assessed - particularly in relation to effects resulting from subsequent changes to physical processes (wave transformation processes, sediment transport and deposition).</p>	<p>The Applicant aims to avoid the requirement for cable protection in the shallow nearshore environment by achieving the minimum burial depth of 0.5 m for the offshore export cables (as detailed in Volume 1, Chapter 3: Project Description (APP-050) and subject to confirmation in the Cable Burial Risk Assessment undertaken post-consent). This includes burial of the cable ducts at the exit pits (seaward of Mean Low Water Springs (MLWS)) for the installation of export cables under the intertidal area via trenchless techniques.</p> <p>The only factor that could prevent the minimal burial depth from being achieved would be challenging ground conditions (e.g. extremely hard substrates, boulders or rock outcrops). Geotechnical site investigations were undertaken in 2022 and 2023 and confirmed that the Mona Offshore Cable Corridor is dominated by circalittoral sediments. Therefore, in shallow waters inshore of the Constable Bank, the Applicant is confident that cable trenching and burial can be undertaken, and laying cables directly on the seabed with associated cable protection would not be required. Should challenging ground conditions be encountered, these will be avoided, if possible, by re-routing the installation of the offshore export cables within the Mona Offshore Cable Corridor.</p> <p>In the unlikely event that cable protection is required in the shallow nearshore environment, the Applicant has committed to ensuring that no more than a 5% reduction in water depth (referenced to Chart Datum) will occur to ensure that sediment transport continues unhindered, and the wave climate is not notably altered. The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that the standalone NRW Marine Licence will secure a cable specification and installation plan including the commitment to no more than a 5% reduction in water depth in the same manner as the deemed Marine Licence as indicated in the Marine Licence Principles Document (J9 F04).</p> <p>The Applicant is confident that a maximum of 5% reduction in water depth (referenced to Chart Datum) will be achievable in the shallow nearshore environment as it is expected that the height of the cable protection above the seabed can be sufficiently altered in relation to the given water depth in order to adhere to this commitment. For example, this may include the provision of concrete mattresses, typically 0.3 m in height, overlaying the cable and completely or partially buried.</p>

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		<p>The adherence to an Offshore Construction Method Statement (CMS), including a Cable Specification and Installation Plan, will also require cable burial where possible and the approach to any necessary cable protection, including in the nearshore zone. The Applicant has committed to this as set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence.</p> <p>The potential requirement for cable protection in the nearshore zone and at the exit pits (seaward of MLWS) is included within the maximum design scenario assessed for cable protection requirements for the Mona Offshore Cable Corridor (i.e. cable protection for up to 20% of the 360 km of offshore export cables). The impacts on benthic ecology from the presence of cable protection within the Mona Offshore Cable Corridor are assessed in section 2.9.5 of Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (F2.2) for long-term habitat loss and section 2.9.9 of Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (F2.2) for changes in physical processes. This included the ‘sand and muddy sand communities with polychaetes and bivalves’ Important Ecological Feature (IEF) which includes the biotope found in the nearshore subtidal area of the Mona Offshore Cable Corridor (i.e. the ‘<i>Fabulina fabula</i> and <i>Magelona mirabilis</i> with venerid bivalves and amphipods in infralittoral compacted fine muddy sand’ biotope) as identified using data from the site-specific surveys. The assessment of impacts on benthic ecology from cable protection concluded that all effects will be not significant in EIA terms (see section 2.9 of Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (F2.2)).</p>
118	<p>NRW (A) advise that due to the presence of the highly invasive carpet seasquirt <i>Didemnum vexillum</i> in Holyhead port, specific management measures may be required on top of standard biosecurity risk assessment protocols should this port be used during the construction, operation or decommissioning phase of this project. Any specific measures that might be required could be managed via the marine biosecurity risk assessment and management plan. These measures need to be secured via condition in the TA ML and NRW (A) consulted, in writing, prior to the commencement of activities.</p>	<p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT’s control. However, it is the Applicant’s anticipation that the standalone NRW Marine Licence will secure a marine biosecurity plan in the same manner as the deemed Marine Licence as indicated in the Marine Licence Principles Document (J9 F04). The marine biosecurity plan will consider the pathway risks associated with vessels once the construction and operation and maintenance ports have been confirmed prior to construction and include measures to minimise the potential spread of invasive non-native species. As outlined in Table 2.19 of Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (F2.2), specific measures will be adopted in the event that a high alert species is recorded (e.g. carpet sea squirt <i>Didemnum vexillum</i>).</p>
119	5.2 Detailed Comments	The Applicant notes and welcomes NRW (A)’s response.

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	NRW (A) agrees the data collected through the site-specific surveys and through the desktop review of existing literature and data sources are sufficient to appropriately characterise the benthic ecology in the export cable corridor.	
120	<p>5.2.1 Conservation of Habitats and Species Regulations 2017 (Reg 63):</p> <p>NRW (A) agrees with the conclusion of the ISAA (E1.2) that provided the mitigation measures outlined are adhered to, the project will not have an AEOsI and therefore will not undermine the conservation objectives of the benthic designated features of the Menai Strait and Conwy Bay SAC. Notwithstanding this, there are a few minor issues that should be amended in the ISSA. These minor issues do not change the assessment conclusions (see below).</p> <p>NRW (A) advises Table 1.220 <i>Summary of conclusions</i> (E1.2), is revised as there are a number of impacts summarised in this table such as EMF that have not been assessed but are included here. Please note we agree that impacts from EMF should not be scoped into the assessment as the Mona Offshore Cable corridor and Access Areas does not overlap with any Annex I features of the Menai Strait and Conwy Bay SAC.</p>	<p>The Applicant notes and welcomes NRW (A)'s agreement that, with the implementation of the proposed commitments, the Mona Offshore Wind Project will not have an adverse effect on the integrity of the Menai Strait and Conwy Bay Special Area of Conservation.</p> <p>Table 1.220 in the Stage 2 Information to Support the Appropriate Assessment (ISAA) Part Two: Special Areas of Conservation (SACs) Assessments (E1.2) has been reviewed and the Applicant agrees that EMF should be removed from this table in relation to the Menai Strait and Conwy Bay SAC (see section 1.2.1 of the Errata Sheet (S_NRWML_5)). The Applicant, however, notes that NRW (A) are in agreement that EMF should not be scoped into the Stage 2 ISAA Part Two: SACs Assessments (E1.2).</p>
121	<p>5.2.2 European Protected Species (EPS):</p> <p>NRW (A) advise that from a benthic ecology perspective, the proposed works do not have the potential to impact EPS as there are no benthic marine species on the list.</p>	The Applicant notes and welcomes NRW (A)'s response.
122	<p>5.2.3 Environment (Wales) Act 2016 (Ecosystems):</p> <p>Please see section 1.11.4 below</p>	The Applicant is unable to find section 1.11.4 in NRW's response but has provided responses to all of the other points raised by NRW in relation to the Environment (Wales) Act 2016 in Rows 123, 124 and 125 below.
123	<p>5.2.4 Environment (Wales) Act 2016 (Section 7):</p> <p>NRW (A) acknowledge and welcome the commitment of the Applicant to use trenchless techniques at landfall to avoid impacts to sensitive features i.e. Section 7 Habitats of Principal Importance <i>Sabellaria alveolata</i> reefs and peat and clay exposures with piddocks as set out in section 1.4 of the <i>Outline Landfall Construction Method Statement</i> (LCMS) (J26.14 – not supplied with</p>	<p>The outline Landfall Construction Method Statement commits to the installation of Mona export cables via trenchless techniques under the intertidal area from seaward of MLWS, where exit pits will be located, to landward of MHWS (Mitigation and Monitoring Schedule (J10 F04)).</p> <p>Please see the Applicant's response to Row 117 above with respect to the requirement for cable protection in the nearshore area and at the export cable exit pits (seaward of MLWS).</p>

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	<p>the suite of TA ML documents, but considered here). However, it is currently unclear whether cable protection will be required on the HDD exit pits. We advise that clarification is sought with respect to the location of cable protection in the nearshore zone close to Mean Low Water Springs (MLWS) and whether or not it is the Applicant's intention to place cable protection at the exit pits in shallow water. The impact to benthic ecology caused by the presence of cable protection in the shallow water nearshore zone has not been assessed particularly in relation to effects resulting from subsequent changes to physical processes (wave transformation processes, sediment transport and deposition)</p>	
124	<p>NRW (A) note no maintenance works will be undertaken in the intertidal zone during the operations and maintenance phase and therefore no assessment regarding temporary habitat disturbance/loss of the intertidal Important Ecological Features (IEFs) has been carried out. NRW (A) advise the outputs of the physical process study should be used to ensure the depth of cable installation across the intertidal is sufficient to minimise any future cable exposure. We note that <i>"further detailed onshore and offshore geotechnical investigations will be conducted at the landfall, including establishing the depth of burial requirements to avoid the risk of exposure"</i>. We acknowledge the Applicant's clarification that the details of the final design. The Applicant reiterates that further detailed onshore and offshore geotechnical investigations will be conducted at the landfall to assess the suitability of the ground in relation to the trenchless technique that is to be adopted. This will include consideration of the natural envelope of beach profile change over time to inform the final detailed design of the duct profile to avoid the risk of cable exposure. This information has been included in the updated Landfall Construction Method Statement (J26.14 F03). It will be included within the final LCMS submitted to the relevant planning authority following consultation with NRW (as secured in Schedule 2, Requirement 9 of the draft DCO (C1 Draft Development Consent Order F03) submitted into the DCO process). We note however, through the suite of TA ML documents, that J26 <i>Outline Code of Construction Practice</i> and J26.14 <i>Outline Landfall Construction Method Statement</i> are considered not required, or not relevant, for the TA ML application (see A2 Mona guide to the NRW</p>	<p>The Applicant notes NRW(A)'s response and will continue to consult NRW (A) regarding the Landfall Construction Method Statement. The commitment to the use of trenchless techniques at the landfall is secured through the outline Landfall Construction Method Statement (J26.14 F03) which provides outline details on the commitment. The Applicant reiterates that further detailed onshore and offshore geotechnical investigations will be conducted at the landfall to assess the suitability of the ground in relation to the trenchless technique that is to be adopted. This will include consideration of the natural envelope of beach profile change over time to inform the final detailed design of the duct profile to avoid the risk of cable exposure. This information has been included in the updated Landfall Construction Method Statement (J26.14 F03).</p> <p>The outline Landfall Construction Method Statement will be submitted to the local authority for approval prior to the commencement of construction as part of the approval of the Code of Construction Practice. NRW (A) is a named consultee on the approval of those documents and will therefore be consulted on the contents of the landfall construction method statement through the discharge of that Development Consent Order Requirement.</p>

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	<p>Marine Licence Application F02). NRW (A) advise that these documents should be considered / included to inform the Marine Licence. NRW (A) request that we are consulted, in writing, with respect to the final LCMS ahead of commencement of activities. Whilst we note the commitment to securing trenchless techniques in the intertidal is made in the <i>Marine Licence Principles document</i> [J9], we do not consider that the commitment is explicit enough in the detail provided and advise that this is rectified.</p>	
125	<p>NRW (A) agrees with the conclusion of the ES that the potential impact from sandwave clearance in Constable Bank (Annex I sandbank outside SAC) will be of minor significance, which is not significant in EIA terms. Consideration should be given to sandwave recovery monitoring during post-installation surveys in Constable Bank, in order to validate the assumptions made in the ES. Recovery monitoring of sandbanks will support statements made in the submitted documentation that sandbanks will recover in the short-term and will also help to inform future work. We suggest that this could be secured within the TA ML (and dML where appropriate). NRW remains of the view that sandwave recovery monitoring and post-installation monitoring will help to build on strategic evidence required to understand the regional impacts to sediment transport processes and physical processes caused by the installation of large-scale wind farm developments into the future.</p>	<p>The Applicant notes this recommendation however the Applicant maintains that, as no significant effects were predicted with the EIA, no further monitoring is considered to be required to validate the predictions of the EIA (Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (F2.2) and Volume 2, Chapter 1: Physical processes (F2.1)).</p> <p>The Applicant would however highlight that, in line with the Offshore in-principle monitoring plan (J15), monitoring of the effects of sediment transport and sediment transport pathways on cable burial will be undertaken.</p> <p>Section 1.5.2.1. of the Offshore in-principle monitoring plan (J15), outlines the approach to geophysical and geotechnical surveys for engineering and design-related studies. This monitoring will be undertaken to observe the effect of sediment transport and sediment transport pathways on cable burial with specific reference to physical processes. The primary function of this monitoring is to examine changes to the seabed post-construction, and the surveys will be expected to focus on areas where active mobile seabed features, such as sandwaves, have been identified (e.g. those areas that underwent sandwave clearance during the construction phase).</p> <p>The commitment to developing a monitoring plan in accordance with the Offshore in-principle monitoring plan (J15) is set out in the Marine Licence Principles Document (J9 F04). The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that the standalone NRW Marine Licence will secure the approval of a monitoring plan in the same manner as the deemed Marine Licence as indicated in the Marine Licence Principles Document (J9 F04).</p> <p>This data is collected for the purpose of observing the effect of sediment transport and sediment transport pathways on cable burial. While the Mona Offshore Wind Project application did not identify any potential significant effects on physical processes or benthic ecology and, therefore, monitoring to test the predictions of the impact assessment is not required, the Applicant confirms that the</p>

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		<p>hydrographic and side scan sonar surveys already committed to and the relevant data gathered will be considered in the context of sandwave recovery, particularly in relation to the Constable Bank, for information purposes. The Applicant has no objections to sharing this information with the relevant licensing authorities as part of the post-consent offshore monitoring plan. The Applicant notes that this sandwave recovery monitoring commitment, and in particular the willingness of the Applicant to sharing the information from the surveys, has been welcomed by NRW (A) in further consultation.</p> <p>The surveys already committed to by the Applicant will highlight any morphological changes to the seabed, improving the evidence base for future mitigation in accordance with NPS EN-3 paragraphs 2.8.83 and 2.8.85 and best practice guidance and principles outlined in section 1.3 of the Offshore in-principle monitoring plan (J15).</p>
126	<p>5.2.5 Marine and Coastal Access Act Part 5: Nature Conservation: NRW (A) advise that as there is no direct overlap with features of Marine Conservation Zones (MCZs), there will be no risk of hindering the conservation objectives of any MCZs with benthic features for any relevant Marine Conservation Zone (MCZ).</p>	<p>The Applicant notes and welcomes NRW (A)'s response.</p>
127	<p>5.3 Other comments                      NRW (A) acknowledge the commitment of the Applicant to produce a biosecurity risk assessment and INNS Management Plan to be conditioned within the TA ML, as outlined in Marine Licence Principles Document [J9]. We acknowledge the clarity provided by the Applicant, through the DCO process, regarding our recommendation that the marine biosecurity plan is a free-standing document kept separate to the terrestrial plan provided in the Outline Biosecurity Protocol [J26.13]. We continue to advise that NRW (A) should be consulted on the suitability of a marine biosecurity risk assessment and plan, in writing, ahead of commencement of activities. We advise that the Biosecurity Plan should be secured in the TA ML (and the dML) as set out in the marine licence principles document [J9]</p>	<p>The Applicant notes the response and will continue to consult NRW (A).</p>
128	<p>If Holyhead port is going to be utilised for berthing of vessels during construction, operation and/or decommissioning, specific management measures may be required on top of standard biosecurity risk assessment protocols. This is due to the presence of</p>	<p>Please refer to the Applicant's response to Row 118 above.</p>

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	the highly invasive carpet seasquirt <i>Didemnum vexillum</i> . Any specific measures that might be required could be managed via the marine biosecurity risk assessment and management plan.	
129	NRW (A) welcomes the commitment of the Applicant to produce an Offshore Environmental Management Plan (EMP) and a Marine Pollution Contingency Plan (MPCP) to be conditioned within the TA ML (and dML) as outlined in Marine Licence Principles Document [J9]. We advise that NRW (A) should be consulted, in writing, on the suitability of the EMP and MPCP ahead of commencement of activities. We advise that the EMP and MPCP should be secured in the TA ML (and the dML) as set out in the <i>Marine Licence Principles</i> document (J9 F04)).	The Applicant notes NRW (A)'s response. NRW MLT, as the licencing authority, will determine the appropriate consultees for approving the final PEMP and MPCP as well as how they are referenced in any marine licence. It is expected that the PEMP and MPCP will be secured within the standalone marine licence, as set out in the Marine Licence Principles Document (J9 F04).
130	6. Marine Water and Sediment Quality (MW&SQ) 6.1 Main Matters / Summary NRW (A) welcomes the commitment of the Applicant to produce an Offshore EMP and a MPCP to be conditioned within the TA ML (and dML) as outlined in <i>Marine Licence Principles Document</i> [J9]. We advise that NRW (A) should be consulted, in writing, on the suitability of the EMP and MPCP ahead of commencement of activities.	The Applicant notes the response from NRW (A). NRW MLT, as the licencing authority, will determine the appropriate consultees for the PEMP and MPCP. It is expected that the PEMP and MPCP will be secured within the standalone marine licence, as set out in the Marine Licence Principles Document (J9 F04).
131	On the basis that trenchless techniques to landfall will be used to minimise sediment disturbance, we agree that, as it stands, we have no concerns from a water quality perspective. However, consideration should be given to the advice at 4.2 and 5.2.4 above with respect to the assessment of the shallow nearshore environment. Should issues transpire, Water Quality should be considered alongside these other receptors.	Please refer to the Applicant's response to NRW (A) in Row 117 above.
132	NRW (A) agrees with the Applicant's conclusion that there is no potential for LSE on Annex I habitats of the Menai Strait and Conwy Bay/Y Fenai a Bae Conwy SAC as a result of [1] an increase in Suspended Sediment Concentration (SSC) and sediment deposition; or [2] the disturbance/remobilisation of sediment-bound contaminants; or [3] accidental pollution where the impacts can be mitigated through the implementation of an Offshore EMP and	The Applicant notes and welcomes NRW (A)'s agreement that, with the implementation of the proposed commitments as set out in the Mitigation and Monitoring Schedule (J10 F04) , the Mona Offshore Wind Project will not have an adverse effect on the integrity of the Fenai a Bae Conwy/Menai Strait and Conwy Bay Special Area of Conservation.. The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates these commitments (including a Marine Pollution Contingency Plan and measures specifically intended to minimise impacts to the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC) will be secured within a PEMP and

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	MPCP; during the construction and decommissioning phases and the operations and maintenance phases of the proposed activities.	Offshore Construction Method Statement which will include a Cable Specification and Installation Plan but the specific drafting will be determined by NRW MLT.
133	<p>6.2 Detailed Comments</p> <p>Conservation of Habitats and Species Regulations 2017 (Reg 63):</p> <p>6.2.1 Screening of designated sites</p> <p>NRW (A) agrees with the output of the Applicant's numerical modelling of the sediment plume (and so the Zone of Influence (Zol)) on sediment and water quality for the proposed activity) that concludes the proposed activity overlaps with only one SAC (Menai Strait and Conwy Bay/Y Fenai a Bae Conwy) for indirect impacts. We accept the conclusion that beyond the modelled buffer, any increases in SSC and sediment deposition would be within the range expected to be observed within natural background variation levels and so would not cause a likely significant effect on any designated feature of the SAC.</p>	The Applicant notes and welcomes NRW (A)'s response.
134	<p>6.2.2 Adverse effect on site integrity (SSC)</p> <p>6.2.2.1 Adverse effects on qualifying features</p> <p>The Applicant concluded that seabed preparation and the installation of offshore export cables may cause an increase in SSC (suspended sediment concentration) and sediment deposition during the construction phase of the proposed activities and that the Annex 1 designated features of the Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC are potentially vulnerable to reduced water clarity and smothering.</p>	The Applicant notes and welcomes NRW (A)'s agreement that, with the implementation of the proposed commitments (i.e. the development of an Offshore CMS that will not permit sandwave clearance within the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC), increases in SSC and associated sediment deposition during the construction phase of the Mona Offshore Wind Project will not have an adverse effect on the integrity of the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC.
135	NRW (A) acknowledge the commitment of the Applicant to the development of an offshore Construction Method Statement (CMS) that will minimise the potential impacts on the designated features by not permitting sandwave clearance within the SAC.	
136	NRW (A) agrees with the Applicant's conclusion that there will be no adverse effect on the qualifying features of the SAC from SSC or sedimentation during the construction phase of the project if the proposed mitigation to be developed for the CMS is adhered to.	
137	NRW (A) agrees with the Applicant's conclusion that the impacts of activities related to the operations and maintenance phases of the	The Applicant notes and welcomes NRW (A)'s agreement that increases in SSC and associated sediment deposition during the operation and maintenance phase

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	<p>project are likely to be substantially lower than during the construction phase. As such we agree with the conclusion of no adverse effect on the qualifying features of the SAC from SSC or sedimentation during this phase of the proposed activity.</p>	<p>of the Mona Offshore Wind Project will not have an adverse effect on the integrity of the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC.</p>
138	<p>6.2.2.2 Recommendations We advise NRW MLT to include mitigation of adverse effects of SSC through the development of and adherence to an offshore Construction Method Statement (CMS) as a licence condition to the proposed activity.</p>	<p>The Applicant notes NRW (A)'s recommendation to NRW MLT that the requirement for an Offshore CMS is secured as a condition within the standalone NRW marine licence. As detailed in the Marine Licence Principles Document (J9 F04), it is the Applicant's expectation that this will be the case.</p>
139	<p>6.2.2.3 In combination effects NRW (A) agrees with the Applicant's conclusion that will be no adverse effects on the qualifying features linked to the conservation objectives of the Menai Strait and Conwy Bay/Y Fenai a Bae Conwy SAC from an in-combination increased SSC and associated sediment deposition during the <b>construction and decommissioning phases</b> of the Mona Offshore Wind Project (E1.2 para 1.5.4.16) or the <b>operations and maintenance phases</b> (E1.2 para 1.5.4.40).</p>	<p>The Applicant notes and welcomes NRW (A)'s agreement that increases in SSC and associated sediment deposition during the construction, operation and maintenance and decommissioning phases of the Mona Offshore Wind Project in-combination with other plans/projects, will not have an adverse effect on the integrity of the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC.</p>
140	<p>The Applicant concluded that the effects associated with sediment deposition will be limited in spatial extent and of short duration. The potential for in-combination effects is limited as the majority of other activities in the region are occurring outside of the SAC and their impacts are unlikely to overlap with the sediment plume generated by activity from the Mona Offshore Wind proposed activity.</p>	
141	<p>6.2.3 Adverse effect on site integrity (remobilisation of sediment bound contaminants) 6.2.3.1 Adverse effects on qualifying features NRW (A) agrees with the Applicant's conclusion that there is no potential for LSE on Annex I habitats of the Menai Strait and Conwy Bay/Y Fenai a Bae Conwy SAC as a result of disturbance/remobilisation of sediment-bound contaminants during the construction and decommissioning phases and the operations and maintenance phases of the proposed activities.</p>	<p>The Applicant notes and welcomes NRW (A)'s agreement that, as outlined in the HRA Stage 1 Screening Report (E1.4 F02), there is no potential for LSE on Annex I habitats of the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC as a result of disturbance/remobilisation of sediment-bound contaminants during the construction and decommissioning phases of the Mona Offshore Wind Project.</p>

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142	Although disturbance/remobilisation of sediment-bound contaminants may result in harmful and adverse effects on benthic communities, the highly localised nature of the maintenance activities combined with the low levels of contaminants found in the site-specific sediment samples are unlikely to cause significant effect.	
143	6.2.3.2 In combination effects NRW (A) agrees that based on the Applicant's assessment, there will be no in-combination effects of the remobilisation of sediment bound contaminants from other plans or projects where no LSE alone has been concluded.	The Applicant notes and welcomes NRW (A)'s agreement that, as outlined in the HRA Stage 1 Screening Report (E1.4 F02), there is no potential for LSE on Annex I habitats of the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC as a result of disturbance/remobilisation of sediment-bound contaminants as a result of the Mona Offshore Wind Project acting in-combination with other plans and projects.
144	6.2.4 Adverse effect on site integrity (accidental pollution) 6.2.4.1 Adverse effects on qualifying features NRW (A) agrees with the Applicant's conclusion that although without mitigation there is potential for LSE on Annex I habitats of the Menai Strait and Conwy Bay/Y Fenai a Bae Conwy SAC from accidental pollution during the construction and decommissioning phases and the operations and maintenance phases of the proposed activities, these impacts can be mitigated through the implementation of an Offshore EMP and MPCP.	The Applicant notes and welcomes NRW (A)'s agreement that, with the implementation of the proposed commitments (i.e. the implementation of a PEMP and MPCP), accidental pollution during all phases of the Mona Offshore Wind Project alone will not have an adverse effect on the integrity of the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC.
145	NRW (A) agrees with the Applicant's conclusions that since the array is a substantial distance from the Conwy Bay and Menai Strait SAC, the only source of this pressure that is likely to occur is from the vessels operating in the transmission cable corridor.	
146	NRW (A) agrees that should an event occur, effects will be temporary, reversible and limited in spatial extent for both reefs and sandbanks.	
147	6.2.4.2 Recommendation We advise NRW MLT to include mitigation through the development of and adherence to an offshore EMP and MPCP as a licence condition to the proposed activity. The plans should set out industry good practice and OSPAR (Oslo-Paris), IMO (International Maritime Organization) and MARPOL (International Convention for the	The Applicant notes NRW (A)'s recommendation to NRW MLT that the requirement for a PEMP and MPCP be secured as a condition within the standalone NRW marine licence. As detailed in the Marine Licence Principles Document (J9 F04), it is the Applicant's expectation that this will be the case.

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	Prevention of Pollution from Ships) guidelines for preventing pollution at sea.	
148	<p>6.2.4.3 In Combination Effects</p> <p>NRW (A) agrees that based on the Applicant's assessment, there will be no in-combination effects from other plans or projects where no LSE alone has been concluded.</p>	<p>The Applicant notes and welcomes NRW (A)'s agreement that with implementation of the proposed commitments, accidental pollution across all phases of the Mona Offshore Wind Project when considered in-combination with other plans/projects, will not have an adverse effect on the integrity of the Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC.</p>
149	<p>European Protected Species (EPS): Not Applicable for marine water and sediment quality.</p> <p>Environment (Wales) Act 2016 (Habitats / Ecosystems): Not Applicable for marine water and sediment quality.</p> <p>Environment (Wales) Act 2016 (Section 7): Not Applicable for marine water and sediment quality.</p> <p>Marine and Coastal Access Act Part 5: Nature Conservation: Not Applicable / Not assessed for marine water and sediment quality.</p>	<p>The Applicant notes NRW (A)'s response.</p>
150	<p>7. Water Framework Directive (WFD) Coastal and Transitional Water Bodies: Offshore Works</p> <p>7.1 Water Framework Directive</p> <p><b>7.1.1</b> We support the assessment conclusion in F6.2.2 that the proposed works will not cause deterioration to the water quality of either of the water bodies considered (North Wales coastal waterbody and Clwyd transitional waterbody), nor the individual elements of these water bodies, or impact the objectives of achieving Good Ecological Potential (GEP) and Good Ecological Status (GES).</p>	<p>The Applicant notes and welcomes NRW (A)'s response regarding the conclusions presented in Volume 6, Annex 2.2: Water Framework Directive Coastal Waters Assessment (F6.2.2).</p>
151	<p><b>7.1.2</b> Despite submissions within the DCO examination through which the Applicant has attempted to address previous matters raised by NRW (A), we continue to advise that for the purposes of</p>	<p>The Applicant acknowledges NRW (A)'s advice that the assessment of chemical contaminants should, for compliance with the Water Environment (Water</p>

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	<p>chemical contaminants, the WFD assessment should extend to 12 nm from MHWS for compliance with the WFD Regulations. These regulations state that for all characteristics other than chemical contaminants, assessments can be made to 1nm, however for chemical contaminants assessments shall extend to 12nm<sup>1,2</sup>. Please see further detail on these matters at Annex B.</p>	<p>Framework Directive) (England and Wales) Regulations, 2017, extend to 12 nm from Mean High Water Springs (MHWS).</p> <p>As the boundaries of WFD water bodies do not extend to 12 nm from MHWS, and based on the Environment Agency (EA) guidance '<i>Clearing the Waters for All</i>' (Environment Agency, 2023) as advised by NRW (A) in their Scoping Opinion (J8), the Applicant did not consider that there was a requirement to ascertain the status of WFD water bodies out to this distance.</p> <p>However, the Applicant has engaged with NRW (A) to agree the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the assessment out to 12 nm of the impact of chemical contamination mobilisation shows no likely deterioration of WFD waterbodies as a result of the activities associated with the Mona Offshore Wind Project.</p>
152	<p><b>7.1.3</b> We do not consider that a satisfactory explanation has been provided to explain the rationale for the limited spatial extent of the Zol between 1 nm of MHWS and the offshore waters. We remain unsatisfied with the response of the Applicant (e.g at RR-011.69 in DCO submission document PDA-008) in their establishment of impacts within the Zol over the route of the transmission cable. We consider that the Applicant has been inconsistent in its approach between legislative regimes in assessing environmental impact and preventing and/or mitigating adverse effects on the environment. The Zol assessed for consideration under the Conservation of Habitats and Species Regulations (Habitats Regulations) is substantially larger than that assessed for consideration under the WFD Regulations. Although this will not alter the conclusions of the assessment, had the Applicant included this it would have made the assessment more robust and would give confidence that the</p>	<p>The Applicant notes and welcomes NRW (A)'s agreement that the conclusions of the assessment presented in Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2) would not be altered by the application of a Zol that aligns with the Zol assessed for consideration under the Habitats Regulations.</p> <p>The Applicant acknowledges the advice provided on this matter and has engaged with NRW (A) to understand how this matter can be resolved. As a result, WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the Zol based on physical processes numerical modelling is appropriate and sufficient.</p>

<sup>1</sup> [Natural Resources Wales / How to carry out a Water Framework Directive \(WFD\) assessment for a marine licence application](#)

<sup>2</sup> [Consultation on amending the Environmental Damage \(Prevention and Remediation\) Regulations 2009 in England and Wales to transpose Article 38 of the Offshore Safety Directive 2013: A summary of responses to the consultation and government response \(publishing.service.gov.uk\)](#) (page 8, para 3.10)

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	<p>Applicant is acting diligently in its endeavours to identify and mitigate all potential adverse impacts on the environment. We continue to advise through the DCO process, and recently the Marine Licensing process for the TA ML, that the justification for the inconsistency is made clear, or that the Applicant is consistent in their approach of consideration of the spatial extent of the impacts of their proposed activities regardless of the legislation they are attempting to comply with. Further details have been included in Annex B.</p>	
153	<p><b>7.1.4</b> NRW (A) note the typographical error outlined in DCO submission document PDA-008 at RR-011.69 with regard to the Zols considered in the WFD compliance assessment. We agree that the conclusions are unaffected by the discrepancy, and we continue to advise that the corrections are carried through to future revisions or re-submissions of the WFD Compliance Assessment.</p>	<p>The Applicant notes NRW (A)'s response and agrees that the conclusions are unaffected by the discrepancy. The correction has been included in section 1.2.13 of the Mona Errata Sheet (S_NRWML_5).</p>
154	<p><b>7.1.5</b> From review of PDA-008 RR-011.72, NRW (A) note the Applicant's re-assertion that the sediment sample results used to inform the WFD impact assessment are appropriately spatially bound. However, we reiterate previous advice provided to the Applicant that additional clarity should be given to highlight that the data used in the WFD compliance assessment were relatively limited in their spatial applicability compared with the entire benthic subtidal and intertidal ecology study area. This request has been made in order to aid clarity.</p>	<p>The Applicant notes NRW (A)'s agreement that the conclusions of the assessment presented in Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2) would not be altered by the application of a ZoI that aligns with the ZoI assessed for consideration under the Habitats Regulations.</p> <p>In order to undertake a suitable and proportionate assessment of the Mona Offshore Wind Project for compliance with the WFD, a ZoI was determined that was relevant to the specific requirements of this assessment, and which aligned with the recommended EA guidance, '<i>Clearing the Waters for All</i>' (Environment Agency, 2023).</p> <p>At all stages of the WFD assessment process, the Applicant has acted diligently to identify and mitigate all potential adverse impacts from the Mona Offshore Wind Project. In all instances of uncertainty pertaining to information about supporting elements, required to undertake the assessment, or where information has been unavailable, a precautionary approach has been taken, and these elements have been scoped in for assessment in Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2).</p> <p>Nonetheless, to provide further confidence that the Applicant has acted diligently in its endeavours to identify and mitigate all potential adverse impacts on the environment, the Applicant has engaged on this matter to agree the best approach to address NRW (A)'s concern. WFD Coastal Waters Assessment</p>

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		<p>supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the assessment out to 12 nm of the impact of chemical contamination mobilisation shows no likely deterioration of WFD waterbodies as a result of the activities associated with the Mona Offshore Wind Project.</p>
155	<p><b>7.1.6</b> Contrary to the assertion made by the Applicant (e.g.at RR-011.75 of DCO submission document PDA-008) that no further assessment is required for biological quality elements and supporting elements due to the proximity to the supporting habitats, we direct the Applicant to F6.2.2: Volume 6, Annex 2.2: <i>Water Framework Directive Coastal Waters Assessment</i>, Table 1.8 (page 18) which states “<i>impact assessment required</i>” for biology-habitats risks for the North Wales water body. This statement was made by the Applicant both in relation to activity within 500 m of higher sensitivity habitat, and where 1% or more of any lower sensitivity habitat is of consideration for risk of impact. We continue to advise that further assessment is required.</p> <p>The above matters have been expanded upon with more detail and advice, in order to be helpful to the regulator, in Annex C.</p>	<p>Please note that there is no Annex C associated with Document Reference AOS-21167-0034-ORML2429T, but the Applicant understands that this comment refers to Annex B of the aforementioned document.</p> <p>The WFD assessment presented in Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2) follows the guidance provided in ‘Clearing the Waters for All’ (Environment Agency, 2023). The statement “<i>impact assessment required</i>” in the scoping stage presented in Section 1.4: Scoping of Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2).follows the terminology used in the scoping template, and refers to the supporting elements of the 'Biology - habitats' quality element that were scoped in for assessment in Table 1.8, namely "<i>Within 500 m of any higher sensitivity habitat</i>" and "<i>1% or more of any lower sensitivity habitat</i>". These supporting elements have therefore been taken forward for further assessment in section 1.5: Impact Assessment of Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2).:</p> <ul style="list-style-type: none"> <li>• The Supporting Element "<i>Within 500 m of any higher sensitivity habitat</i>" (namely '<i>Polychaete reef (Sabellaria alveolata)</i>' and '<i>Mussel beds, including blue and horse mussel</i>' (specifically blue mussel: horse mussel are not present)) is assessed in paragraphs 1.5.1.3 to 1.5.1.10.</li> <li>• The Supporting Element "<i>1% or more of any lower sensitivity habitat</i>" is assessed in paragraphs 1.5.1.1 and 1.5.1.2 of Volume 6, Annex 2.2: Water Framework Directive Coastal Waters Assessment (F6.2.2).</li> </ul>
156	<p>Annex B – WFD Detailed Comments</p> <p>Main Matters</p> <p>We do not consider that a satisfactory explanation has been provided to explain the rationale for the Zol used for WFD regulations compliance assessment considered for the proposed activity, beyond acknowledgement that a portion of the works will be undertaken within the North Wales waterbody. We recommend that the numerically modelled Zol is used for assessing the impacts of</p>	<p>Please refer to the Applicant’s response to NRW (A) in Rows 151 and 152 above.</p>

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	the proposed activities to either; 1 nm for ecology, 12 nm for chemicals or the full seaward extent of the waterbody where applicable.	
157	The Applicant has not made it clear if cable protection will be required on the HDD exit pits. If it is required, the impact to benthic ecology caused by the presence of cable protection in the shallow water nearshore zone has not been assessed for impacts from changes to physical processes (wave transformation processes, sediment transport and deposition).	<p>The potential requirement for cable protection at the exit pits in the shallow water nearshore zone (seaward of Mean Low Water Springs) associated with installation of export cables under the intertidal area via trenchless techniques is included within the maximum design scenario presented and assessed in Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (F2.2). The assessment of impacts on benthic ecology from cable protection concluded that all effects will be not significant in EIA terms. Similarly, the assessment of impacts on physical processes concluded that impacts to the wave regime due to presence of infrastructure and the associated potential impacts along adjacent shorelines will be not significant in EIA terms.</p> <p>Up to four exit pits may be required for installation of export cables under the intertidal area via trenchless techniques. These exit pits would be seawards of MLWS, and as with other remedial cable protection, cable protection at the exit pits would be avoided wherever possible.</p> <p>Geotechnical site investigations undertaken in 2022 and 2023 confirmed that the Mona Offshore Cable Corridor and Access Areas is dominated by circalittoral sediments. Therefore, in shallow waters inshore of the Constable Bank, cable trenching and burial is achievable and would be undertaken and the laying of cables directly on the seabed with associated cable protection is not expected to be required.</p> <p>Only in the specific cases where the minimum burial depth cannot be achieved would cable protection be needed. In this case, where cables are installed below seabed level, cable protection measures will be tailored to the specific location to ensure that sediment transport continues unhindered, and the wave climate is not notably altered.</p> <p>Where exit pits may require cable protection, the Applicant is committed to ensuring that cable protection would be no more than 10 m in width and that no more than a 5% reduction in water depth (referenced to Chart Datum) would occur at any point along the Mona Offshore Cable Corridor and Access Areas. Thus, implicitly, the detailed design (either by location, installation methodology or type of cable protection) will ensure there are no significant impacts at any point along the Mona Offshore Cable Corridor and Access Areas.</p> <p>The Applicant is committed to development of, and adherence to, an Offshore CMS including a CSIP which will include cable burial where possible and cable</p>

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		<p>protection. This is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence. The Applicant recognises that the best form of cable protection is achieved through cable burial to the required depth, and it is not the Applicant's intention to place cable protection in shallow water but to avoid this if possible (see Row 110 above for further information).</p> <p>On the basis of the information detailed above, no impact resulting from changes to physical processes (wave transformation processes, sediment transport and deposition) is expected on any waterbodies, and therefore the outcome of the WFD assessment would not change.</p>
158	<p>As raised in 5.3, we advise that consideration of the impacts of vessel movements are included in the EMP along with specific mitigation measures for the North Wales waterbody, with particular emphasis on highly invasive carpet sea squirt <i>Didemnum vexillum</i>.</p>	<p>The drafting of the standalone NRW Marine Licence is entirely within NRW MLT's control. However, it is the Applicant's anticipation that the standalone NRW Marine Licence will secure a marine biosecurity plan in the same manner as the deemed Marine Licence as indicated in the Marine Licence Principles Document (J9 F04).</p> <p>The marine biosecurity plan will consider the pathway risks associated with vessels once the construction and operation and maintenance ports have been identified and confirmed prior to construction and include measures to minimise the potential spread of invasive non-native species. Biosecurity mitigation measures will be adopted across the project area, which overlaps with the North Wales water body. As outlined in Table 2.19 of Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (F2.2), specific measures will be adopted in the event that a high alert species is recorded (e.g. carpet sea squirt <i>Didemnum vexillum</i>).</p>
159	<p>NRW (A) advise the Applicant to include Rhyl, Rhyl East and, Kimnel Bay (sandy Cove) and Abergele (Pensarn) bathing waters sites for assessment of impact. The proposed activity presents a high risk of causing deterioration to the status of these protected areas, warranting an extension of the spatial area to be considered for impact beyond the 2 km considered by the Applicant.</p>	<p>The Abergele (Pensarn) bathing water is approximately 1 km from the Mona Offshore Cable Corridor and Access Areas and has been assessed in section 1.5.1 of Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2), under the subheading "<i>Protected areas</i>".</p> <p>The assessment concluded that the Mona Offshore Wind Project would not cause a deterioration of the status of the Abergele (Pensarn) bathing water, and with respect to protected areas is compliant with the requirements of the WFD, as noted in the Response to NRW (A) in Row 150 above.</p> <p>Since the Rhyl, Rhyl East and Kimnel Bay (Sandy Cove) bathing waters are located further from the Mona Offshore Cable Corridor and Access Areas than the</p>

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		<p>Abergele (Pensarn) bathing water, it follows that potential impacts at these sites would be less than those at the Abergele (Pensarn) site. The status of these bathing waters would also, therefore, not be jeopardised by the Mona Offshore Wind Project. However, the Applicant has engaged with NRW (A) to agree on the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the Zol based on physical processes numerical modelling is appropriate and sufficient.</p>
160	<p>General comments</p> <p>1. Zone of Influence (Zol)</p> <p>As highlighted in 7.1.3, in coastal waters, the focus of assessment of the ecological and hydromorphological elements should extend to assessment out to 1 nm and the focus of assessment of the chemical elements should extend to 12 nm. Activities linked to the project that do not take place within these bounds should still be considered where the waterbody boundaries extend beyond this or where the Zol of the activity extends either into the waterbody or to 12 nm from the landward extent of the waterbody at MHWS. Hydrological linkages must be accounted for between waterbodies, including adjacent or down-tide waterbodies and freshwater waterbodies where project-associated activities may impact on watercourses that provide a pathway to impact in the marine environment.</p>	<p>Please refer to the Applicant's response to NRW (A) in Row 152 above.</p>
161	<p>NRW (A) note that the Applicant acknowledges the advice on Zol and element deterioration but we note that the Applicant has not acted on this advice in their scoping and assessment of impacts:</p> <p>F6 2.2 para. 1.3.2.6)</p> <p>“As advised by NRW in the Mona Offshore Wind Project Scoping Opinion (received 15 June 2022) (see Table 1.1), the assessment of deterioration should be extended further than 1 nm where an effect pathway may be present for any WFD element in any water body. Additionally, NRW advised that deterioration of any element within a water body, even if it does not result in deterioration at the water body level, should be considered within the assessment.”</p>	<p>Please refer to the Applicant's response to NRW (A) in Row 152 above.</p>

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	<p>And F6 2.2 para 1.3.2.9</p> <p>“...Advice from NRW in the Mona Offshore Wind Project Scoping Opinion (15 June 2022) states that the waterbodies to be included in the assessment should be derived through numerical modelling and other assessment methods to determine the Zol.”</p>	
162	<p>Further assessment required</p> <p>We recommend that the numerically modelled Zol is used for assessing the impacts of the proposed activities to either; 1 nm for ecology, 12 nm for chemicals or the full seaward extent of the waterbody where applicable, rather than limiting assessment either to within a 2 km impact radius or to a measured distance from a set datum.</p>	<p>Please refer to the Applicant’s response to NRW (A) in Rows 151 and 152, above.</p>
163	<p>2. CEFAS Action Levels</p> <p>NRW (A) support the use of CEFAS Action levels to assess the impact of contamination of water from re-suspended sediment. We note the Applicant’s use of the CEFAS Action levels (e.g. F6 2.2 para 1.3.2.20)</p> <p>“The water quality assessment will assess the potential for the release of chemicals (on the Environmental Quality Standards Directive (EQSD) list).....and sediment bound contaminants above CEFAS AL1”</p> <p>Although we offer no formal guidance on the levels to consider for sediment bound contaminants, we commend the Applicant’s use of CEFAS Action Levels and consider it good practise for assessing environmental impact.</p>	<p>The Applicant notes NRW (A)’s response and welcomes its support for the approach taken. The use of Cefas Action Level 1 as a scoping threshold for sediment-bound contaminants is stipulated in the ‘<i>Clearing the Waters for All</i>’ guidance (Environment Agency, 2023), the adoption of which was advised in the NRW (A) Scoping Response presented within Appendix 2 of the Mona Offshore Wind Project Scoping Opinion (J8).</p>
164	<p>3. Screening</p> <p>NRW (A) advise that the Applicant uses the results of their Zol modelling to inform their decision of screening for WFD regulations compliance assessment.</p>	<p>Please refer to the Applicant’s response to NRW (A) in Row 152 above.</p>
165	<p>NRW (A) support the assessment that the identified water bodies (North Wales and Clwyd) should be included in the WFD compliance assessment; however we question the exclusion of other waterbodies that overlap with the Zol of the proposed activity or are hydrologically linked. We advise the Applicant to include the</p>	<p>The Applicant notes NRW (A)’s response and welcomes the support on the inclusion of the North Wales and Clwyd water bodies.</p> <p>Three Transitional and Coastal (TraC) WFD water bodies were identified in Part 4, Annex B (Water Framework Directive Screening) of the Mona Offshore Wind</p>

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	<p>justification for the exclusion of the Dee (North Wales) Waterbody (and others) in their screening process for consideration of quality element scoping and detailed assessment, and consideration of impacts on WFD protected areas within this additional waterbody. This inclusion would be solely for completeness in assessment to ensure full compliance with the WFD regulations.</p>	<p>Project EIA Scoping Report (Mona Offshore Wind Ltd., 2022). These were (north to south):</p> <ul style="list-style-type: none"> <li>• Mersey Mouth water body (GB641211630001)</li> <li>• North Wales water body (GB641011650000)</li> <li>• Clwyd water body (GB541006608000).</li> </ul> <p>Numerical modelling presented in Volume 6, Annex 1.1: Physical processes technical report (F6.1.1) indicated that impacts would not overlap spatially with any other TraC WFD water bodies and paragraph 1.3.2.12 of Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2) summarises that, in light of the numerical modelling and low levels of disturbance, the 2 km Zol is considered sufficient. Therefore, other waterbodies beyond 2 km of the activity (e.g. Dee (North Wales), Conwy Bay and Anglesey North) would not be screened in.</p> <p>No specific additional TraC WFD water bodies were requested to be screened in as part of the NRW (A) Scoping Response (presented within Appendix 2 of the Mona Offshore Wind Project Scoping Opinion (J8)). Following this, no additional TraC WFD water bodies were requested for assessment as part of the NRW (A) Section 42 feedback presented in Consultation Report Appendices- Part 3 (D.25 - F) (E3.1).</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) supports the justification for excluding other water bodies.</p>
<p>166</p>	<p>We advise the Applicant that if the Dee (North Wales) was screened in, we would not expect any quality elements to be in scope for further consideration or assessment. We make these recommendations to aid the Applicant in their efforts to ensure full regulatory compliance and to manage the risks of environmental harm from their proposed activities. We acknowledge the validity of the justification for these exclusions that was provided as part of the DCO documentation within PDA-008 at RR-011.67. We advise the Applicant to include this justification in their WFD compliance assessment screening exercise.</p>	<p>The Applicant notes NRW (A)'s response and welcomes the advice that the Dee (North Wales) water body if screened in, would not be expected to require any quality elements to be scoped in for further consideration or assessment.</p> <p>The Applicant also welcomes NRW (A)'s on the validity of the justification for these exclusions and notes NRW (A)'s advice relating to including justification for the exclusion of other water bodies in the WFD screening exercise – please see the response in Row 165 in respect of this.</p>
<p>167</p>	<p>The Applicant has provided no adequate justification for the Zol used for WFD regulations compliance assessment considered for their proposed activity beyond their acknowledgement that a portion of the works will be undertaken within the North Wales waterbody. We note the Zol assessed for consideration under the Conservation</p>	<p>Numerical modelling presented in Volume 6, Annex 1.1: Physical processes technical report (F6.1.1) indicated that impacts would not overlap spatially with any other TraC WFD water bodies, and paragraph 1.3.2.12 of Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2) summarises that, in light of the numerical modelling and low levels of disturbance, the 2 km Zol is sufficient.</p>

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	<p>of Habitats and Species Regulations (Habitats Regulations) is substantially larger than that assessed for consideration under the WFD Regulations for the same region. The Applicant states that NRW (A) have previously advised them (Mona Offshore Wind Project Scoping Opinion (15 June 2022)) that the waterbodies to be included in the assessment should be derived through numerical modelling and other assessment methods to determine the Zol. Whilst we recognise the modelling used to inform the Zol for the offshore works is appropriate and has been applied appropriately for HRA purposes, no modelling has been undertaken specifically to identify the impact of activities within WFD waterbodies, and the modelling for the offshore works is largely ignored or unused for the nearshore and intertidal regions. The Applicant has also failed to undertake modelling of the impacts of actions where the Zol for the activities related to the proposal in the transmission cable corridor and access areas extends into WFD waterbodies. In the absence of this specific modelling, we would expect the Applicant to refer to the results of the modelling used for the wider project that they have deemed appropriate for assessment of impacts under the Habitats Regulations.</p>	<p>Additionally, it was considered that since the 2 km buffer applied for WFD protected areas was sufficient for sites specifically designated under EU legislation, this same buffer would be appropriate for other quality elements.</p> <p>However, the Applicant has engaged with NRW (A) to agree the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the Zol based on physical processes numerical modelling is appropriate and sufficient.</p>
168	<p>NRW (A) question the validity of the Applicant's statement in paragraph 1.3.4.2 (F6 2.2) that they have taken into consideration the Zol of the Mona Offshore Wind Project, as this statement is contrary to what they have stated as their approach to the Zol in paragraph 1.3.2.10 (F6 2.2) i.e., no impact pathway from actions related to the proposed activity.</p>	<p>The Applicant notes NRW (A)'s response and disagrees that the Zol of the Mona Offshore Wind Project has not been taken into consideration.</p> <p>However, the Applicant has engaged with NRW (A) to agree the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the Zol based on physical processes numerical modelling is appropriate and sufficient.</p>
169	<p>4. Scoping and Detailed Assessment: North Wales Biology - habitats</p> <p>NRW (A) agree with the Applicant's assessment that Sabellaria reef and mussel beds (higher sensitivity habitats) are at risk of impact from the proposed activities and should be scoped in for detailed assessment in the North Wales waterbody.</p>	<p>The Applicant notes NRW (A)'s response and welcomes its agreement that it was appropriate for the 'Polychaete reef' and 'Mussel beds, including blue and horse mussel' higher sensitivity habitats and the 'Intertidal soft sediments like sand and mud' lower sensitivity habitat to be scoped in for assessment.</p>

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	<p>NRW (A) agree with the Applicant's assessment that intertidal soft sediments like sand and mud and subtidal soft sediments (lower sensitivity habitats) are at risk of impact from the proposed activities and should be scoped in for detailed assessment in the North Wales waterbody.</p>	
170	<p>Detailed assessment</p> <p>NRW (A) agree with the Applicant's conclusion that it is unlikely for the maximum footprint of the activity of 0.055 km<sup>2</sup> to exceed 1% of any lower sensitivity habitat.</p> <p>NRW (A) agree with the conclusion of the Applicant's assessment that the proposed activity in the <i>offshore</i> environment is unlikely to cause any deterioration to the North Wales waterbody status or to any of the quality elements that are assessed to inform the status.</p>	<p>The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the offshore elements of the Mona Offshore Wind Project are unlikely to cause any deterioration to the status of the North Wales waterbody or to any of the quality elements that are assessed to inform this status.</p>
171	<p>We note the mitigation measures proposed (para 1.5.1.5; detailed in Volume 2, Chapter 2: Benthic subtidal and intertidal ecology of the Environmental Statement) to lessen the likelihood of negative impact on the areas of higher sensitivity habitat (<i>S. alveolata</i> and blue mussel habitat); namely the active siting of the boundary extent of the proposed works away from these habitats. These mitigation measures should be captured in the conditions of the Marine Licence to ensure they are enforced.</p>	<p>The Applicant notes NRW (A)'s response and acknowledges the advice regarding capturing the mitigation measures associated with avoidance of higher sensitivity habitat (e.g. <i>S. alveolata</i> and blue mussel habitat) in the conditions of the Marine Licence. This will be mitigated through measures outlined in the offshore construction method statement. This is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment to approval of a final offshore construction method statement will be secured within the standalone NRW Marine Licence.</p>
172	<p>Further assessment and clarity required</p> <p>NRW (A) do not agree with the Applicant's conclusions in relation to the impact on the biology of the proposed activity in the nearshore environment.</p> <p>The Applicant has not made it clear if cable protection will be required on the HDD exit pits. If it is required, the impact to benthic ecology caused by the presence of cable protection in the shallow water nearshore zone has not been assessed for impacts from changes to physical processes (wave transformation processes, sediment transport and deposition).</p>	<p>Please refer to the Applicant's response to NRW (A) in Row 157 above.</p>
173	<p>Biology - fish</p> <p>NRW (A) agree with the Applicant's assessment that the proposed works have no potential to cause a deterioration in the waterbody</p>	<p>The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the Mona Offshore Wind Project would have no potential to cause</p>

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	status or prevent the North Wales water body from meeting its objectives with respect to fish, nor will they impact the fish measures or improvement activities (where applicable) for the North Wales waterbody.	a deterioration in the waterbody status or prevent the North Wales water body from meeting its objectives with respect to fish.
174	<p>Water quality</p> <ul style="list-style-type: none"> <li>water clarity, temperature, salinity, oxygen levels nutrients or microbial patterns continuously for longer than a spring-neap tidal cycle (approximately 14 days)</li> </ul> <p>NRW (A) agree with the Applicant's assessment that water quality quality-elements are at risk of impact from the proposed activities and should be scoped in for detailed assessment in the North Wales waterbody.</p>	The Applicant notes NRW (A)'s response and welcomes its agreement that it was appropriate to scope in the 'water clarity, temperature, salinity, oxygen levels nutrients or microbial patterns' supporting elements for assessment.
175	<p>Detailed assessment</p> <p>Based on the modelling of the sediment plume and the expected rate of sedimentation, NRW (A) agree with the Applicant's assessment that the proposed works have no potential to cause a deterioration in the waterbody status or prevent the North Wales water body from meeting its objectives with respect to water quality.</p>	The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the Mona Offshore Wind Project would have no potential to cause a deterioration in the waterbody status or prevent the North Wales water body from meeting its objectives with respect to water quality.
176	<p>Phytoplankton</p> <p>NRW (A) agree with the Applicant's assessment that phytoplankton should be assessed for impact from the proposed activities and should be scoped in for detailed assessment in the North Wales waterbody since the waterbody has been classified as moderate for this quality-element.</p>	The Applicant notes NRW (A)'s response and welcomes its agreement that it was appropriate to scope in the 'phytoplankton' supporting element for assessment.
177	<p>Detailed assessment</p> <p>NRW (A) agree with the Applicant's conclusions that as the effects of an increase in SSC are modelled to be temporary, short-term and intermittent over a 14-day spring/neap tidal cycle, there is unlikely to be any impact on the growth of phytoplankton from the proposed activity.</p>	The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the Mona Offshore Wind Project would have no potential to cause a deterioration in the waterbody status or prevent the North Wales water body from meeting its objectives with respect to phytoplankton growth.
178	Harmful algae	The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the North Wales water body does not have a history of harmful algae.

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	NRW (A) agree with the Applicant's assessment of the available data that the North Wales waterbody does not have any history of harmful algae blooms and so detailed assessment is not required.	
179	Release or use of chemicals which are on the EQSD list We note that the Applicant's assessment (based on the information provided) states that the proposed activity will not involve the release of any chemicals on the EQSD list of priority and priority hazardous or other polluting substances other than bentonite (the impact of which does not require detailed assessment).	The Applicant notes NRW (A)'s response.
180	However, this is not consistent with the contaminant analysis results of the sediment sampling locations ENV141 and ENV143 (OCC141 and OCC143) presented in the Benthic Subtidal and Intertidal Ecology Technical Report, which show an exceedance of the CEFAS Action Level 1 threshold for arsenic (Volume 6, Annex 2.1: Benthic subtidal and intertidal ecology technical report). The Applicant's assessment is therefore accurate only for samples taken within the assessed WFD waterbodies, and additional clarity should be given to highlight that the data used in the WFD compliance assessment were relatively limited in their spatial applicability compared with the entire benthic subtidal and intertidal ecology study area.	<p>The Applicant notes NRW (A)'s response and acknowledges that the spatial extent of sediment sampling results used to inform the scoping process in Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2) does not coincide with the entire benthic subtidal and intertidal ecology study area.</p> <p>Assessment of sediment contamination results in Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2) considered sediment samples collected within the North Wales water body (i.e. a subsample of the benthic subtidal and intertidal ecology study area). This is because the location of these samples was relevant to the spatial extent stipulated by the '<i>Clearing the Waters for All</i>' guidance (Environment Agency, 2023), which requires consideration of "<i>activities in the marine environment up to 1 nautical mile out to sea</i>".</p> <p>However, the Applicant has engaged with NRW (A) to agree the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the assessment out to 12 nm of the impact of chemical contamination mobilisation shows no likely deterioration of WFD waterbodies as a result of the activities associated with the Mona Offshore Wind Project.</p>
181	Request for further information and further assessment NRW (A) request confirmation of the location of these sampling locations in relation to the 12nm seaward extent (measured from the landward extent at MHWS) of the North Wales waterbody that should be under consideration for chemical contaminants. We	Please refer to the Applicant's response to NRW (A) in Row 180 above.

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	<p>reiterate that the assessment of chemical contaminants for WFD should extend to 12nm.</p> <p>We advise that if these sampling locations are sited with 12nm of the waterbody's landward extent, the results of the contaminant analysis should be considered in the assessment of impact for WFD compliance.</p>	
182	<p>Release or use of chemicals which are on the EQSD list (continued)</p> <p>NRW (A) advise that accidental release of contaminants should be scoped in for detailed assessment.</p> <p>NRW (A) welcomes the commitment of the Applicant to produce a EMP post-consent, and a MPCP to be conditioned within the TA ML (and dML) as outlined in Marine Licence Principles Document [J9]. We advise the Applicant that at present there is minimal detail on the plan provided in para 1.2.2.6. We advise that NRW (A) should be consulted, in writing, on the suitability of the EMP and MPCP ahead of commencement of activities to ensure the proposed mitigation is sufficient.</p>	<p>The accidental release of contaminants will be mitigated by measures outlined in the PEMP and a MPCP. This is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment to approval of a final PEMP and MPCP will be secured within the standalone NRW Marine Licence.</p> <p>With regards to accidental release of contaminants, no chemicals on the Environmental Quality Standards Directive (EQSD) list will be used as part of the Mona Offshore Wind Project. However, on accidental release of sediment-bound contaminants, please refer to the Applicant's response to NRW (A) in Row 180 above.</p>
183	<p>Further assessment required</p> <p>We advise the Applicant should scope in the potential for accident spills and pollution events for detailed assessment or provide comprehensive details of the proposed mitigation measures ahead of consent, which would allow for this impact source to be scoped out before assessment.</p>	<p>The Applicant notes NRW (A)'s response. However, the WFD assessment presented in Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2) was undertaken in the context of mitigation measures being secured and in place. As such accidental spills and pollution events were scoped out as these will be mitigated by measures outlined in the PEMP and a MPCP. This is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence.</p> <p>The Applicant also highlights that the requirement to scope in the potential for accident spills and pollution events has not been raised previously, either within the NRW (A) Scoping Response (presented within Appendix 2 of the Mona Offshore Wind Project Scoping Opinion (J8)) or during the consultation process for the Mona Offshore Wind Project Preliminary Environmental Information Report (PEIR). This is evidenced in the Consultation Report (E3), the Consultation Report Appendices (E3.1), the Technical Engagement Plan (E4) and the Technical Engagement Plan Appendices (E4.1, E4.2 and E4.3).</p>

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184	<p>Disturbance of sediment with contaminants above Cefas Action Level 1</p> <p>NRW (A) advise that disturbance of sediment with contaminants above CEFAS Action Level 1 should be scoped in for detailed assessment.</p> <p>The Applicant states that sediment sampling was not undertaken in the North Wales waterbody so “<i>disturbance of sediment with contaminants above Cefas Action Level 1</i>” could not be ruled out (document F6 2.2 para 1.6.1.5). The Applicant further states that site-specific analysis of sediment-bound contaminants was subsequently undertaken, and no contaminants were found to exceed Cefas Action Level 1 at any sampling locations within the North Wales water body.</p>	<p>At the time of preparation for the WFD assessment submitted as part of the PEIR, sampling for chemical analysis of sediment contamination had not been undertaken within the Mona Offshore Cable Corridor and Access Areas, which partially overlaps with the North Wales water body. Sediment contamination was therefore scoped in for assessment in the WFD assessment submitted as part of the PEIR as a precautionary measure, due to this lack of site-specific information.</p> <p>Site-specific sampling for chemical analysis of sediment contamination was subsequently undertaken within the Mona Offshore Cable Corridor and Access Areas. Since no sites out to 1 nm returned results indicating contamination above Cefas Action Level 1, according to the ‘<i>Clearing the Waters for All</i>’ guidance (Environment Agency, 2023), this would ordinarily mean that a detailed assessment of sediment contamination would not be required. However, sediment contamination was scoped in for detailed assessment in the WFD assessment submitted as part of the Environmental Statement (Volume 6, Annex 2.2: Water Framework Directive Coastal Waters Assessment (F6.2.2)) to maintain continuity with the PEIR.</p> <p>Full details of site-specific sediment sampling and chemical analysis results for the Mona Offshore Wind Project are presented in Volume 6, Annex 2.1: Benthic subtidal and intertidal ecology technical report (F6.2.1). Furthermore, the Applicant has engaged with NRW (A) to agree the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the assessment out to 12 nm of the impact of chemical contamination mobilisation shows no likely deterioration of WFD waterbodies as a result of the activities associated with the Mona Offshore Wind Project.</p>
185	<p>Request for further information</p> <p>NRW (A) request the information supporting this statement is made available and is specifically referred to in the Applicant's compliance assessment for WFD.</p>	<p>Full details of site-specific sediment sampling and chemical analysis results for the Mona Offshore Wind Project are presented in Volume 6, Annex 2.1: Benthic subtidal and intertidal ecology technical report (F6.2.1) where the location of sampling sites is also illustrated.</p>
186	<p>INNS</p> <p>NRW (A) acknowledge the commitment of the Applicant to produce an Offshore Environmental Management Plan (EMP) and a Marine</p>	<p>The Applicant notes NRW (A)'s response and welcomes acknowledgement of the commitment to produce a PEMP and a MPCP to prevent the spread of INNS from the Mona Offshore Wind Project. The PEMP will include an MPCP and measures to minimise the potential spread of INNS. This commitment is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring</p>

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	Pollution Contingency Plan (MPCP) to prevent the spread of INNS from the proposed activities.	Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence.
187	Request for further information The Applicant has not assessed the specific risk of vessel movement during the construction, operation and maintenance of the proposed development. We advise that consideration of the impacts of vessel movements are included in the EMP and mitigation is proposed for the North Wales waterbody, with particular emphasis on highly invasive carpet seasquirt <i>Didemnum vexillum</i> in Holyhead port if this port is proposed as a port of operation for any vessels involved with the proposed project.	Please refer to the Applicant's response to NRW (A) in Row 158 above.
188	5. Scoping and Detailed Assessment: Clwyd Hydromorphology NRW (A) agree with the Applicant's assessment that the proposed works have no potential to prevent the Clwyd water body from meeting its objectives with respect to hydrology or morphology (Hydromorph), nor will they impact the Hydromorph measures or improvement activities (where applicable) for the Clwyd waterbody.	The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the Mona Offshore Wind Project would have no potential to cause a deterioration in the status of the Clwyd waterbody, or prevent the Clwyd water body from meeting its objectives with respect to hydromorphology.
189	Biology - habitats NRW (A) agree with the Applicant's assessment that the proposed works have no potential to prevent the Clwyd water body from meeting its objectives with respect to biological habitats, including WFD higher or lower sensitivity habitats.	The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the Mona Offshore Wind Project would have no potential to cause a deterioration in the status of the Clwyd waterbody, or prevent the Clwyd water body from meeting its objectives with respect to biological habitats.
190	Biology -fish NRW (A) agree with the Applicant's assessment that the proposed works have no potential to prevent the Clwyd water body from meeting its objectives with respect to fish, nor will they impact the fish measures or improvement activities (where applicable) for the North Wales waterbody.	The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the Mona Offshore Wind Project would have no potential to cause a deterioration in the status of the Clwyd waterbody, or prevent the Clwyd water body from meeting its objectives with respect to fish.
191	Water quality NRW (A) advise that within the Applicant's assessment water quality quality-elements should be considered at risk of impact from the	The Applicant notes NRW (A)'s response. Please refer to the Applicant's response to NRW (A) in Row 192 below.

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	<p>proposed activities. We advise that they should be scoped in for detailed assessment in the Clwyd waterbody.</p>	
192	<p>Request for clarity and further assessment</p> <p>The Applicant states that the resuspension of sediment resulting from the proposed activities would result in an increase of suspended sediment concentration in the waterbody (F6 2.2; table 1.16 pg 24). The Applicant further states that the suspended concentration of sediment would not disperse in the Clwyd waterbody away from the activity footprint but then conclude that this is unlikely to affect the water quality of the Clwyd waterbody. We advise that the Applicant should refer to their assessment of SSC in their Environmental Statement and refer to or include the relevant information and its assessment to support their detailed assessment of this impact on the Clwyd Waterbody. We also advise that the Applicant consider the Zol of the proposed activity in considering extent and magnitude of impact.</p>	<p>The Applicant disagrees with NRW (A)'s characterisation of the key risk issues and justification presented in Table 1.16 of Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2).</p> <p>It has already been established at this point in Volume 6, Annex 2.2: WFD Coastal Waters Assessment (F6.2.2) that the footprint of all activities associated with the Mona Offshore Wind Project would occur entirely outside the Clwyd water body. The text discusses resuspension of sediment in the water <i>column</i> (not water body) and highlights that potential impacts are anticipated to be localised (i.e. outside the Clwyd water body) and short lived. The text goes on to state that “SSC <i>would not disperse to a significant level outside the footprint of the activities</i> [which are located outside the Clwyd water body] <i>and is therefore unlikely to affect water quality in the Clwyd water body</i>”. The text does not state “...that the suspended concentration of sediment would not disperse in the Clwyd waterbody away from the activity footprint...”.</p> <p>With regards to signposting to the assessment of SSC in the Environmental Statement, the first row of Table 1.16 states that “A full assessment of sediment displacement is presented in Volume 2, Chapter 1: Physical processes of the Environmental Statement, and an assessment of the potential effects of increased SSC upon benthic ecology receptors is presented in Volume 2, Chapter 2: Benthic subtidal and intertidal ecology of the Environmental Statement.”</p>
193	<p>Phytoplankton</p> <p>NRW (A) advise that we do not agree with the conclusions of the Applicant that the proposed activity (or its Zol) could have no effect on the Clwyd waterbody, but further advise that this has no material impact on how phytoplankton should be assessed for the purpose of WFD compliance assessment.</p> <p>NRW (A) advise that with regard to the Clwyd waterbody, the proposed activity and the Zol of the activity is not in a waterbody with a phytoplankton status of moderate, poor or bad, and detailed assessment of the impacts of the proposed activity are not required for phytoplankton.</p>	<p>The Applicant notes NRW (A)'s response and welcomes the agreement that the phytoplankton supporting element does not require detailed assessment.</p>
194	<p>Harmful algae</p>	<p>The Applicant notes NRW (A)'s response and welcomes its agreement with the conclusion that the Mona Offshore Wind Project would have no potential to cause</p>

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	NRW (A) agree with the Applicant that the Clwyd waterbody does not have a history of harmful algae and that there is no requirement for detailed assessment of this quality element.	a deterioration in the status of the Clwyd waterbody, or prevent the Clwyd water body from meeting its objectives with respect to harmful algae.
195	<p>Release or use of chemicals which are on the EQSD list</p> <p>NRW (A) agree with the Applicant's assessment that the proposed activity will not involve the release of any chemicals on the EQSD list of priority and priority hazardous or other polluting substances other than bentonite (the impact of which does not require detailed assessment).</p> <p>NRW (A) agree with the Applicant's assessment that accidental release of contaminants can be scoped out from detailed assessment for the Clwyd waterbody.</p>	The Applicant notes NRW (A)'s response and welcomes its agreement that the release or use of chemicals which are on the EQSD list would not require scoping in for further assessment.
196	<p>Disturbance of sediment with contaminants above Cefas Action Level 1</p> <p>NRW (A) agree with the Applicant's assessment that disturbance of sediment with contaminants above Cefas Action Level 1 can be scoped out of detailed assessment for the Clwyd waterbody.</p>	The Applicant notes NRW (A)'s response and welcomes its agreement that disturbance of sediment with contaminants above Cefas Action Level 1 would not require scoping in for further assessment for the Clwyd water body.
197	<p>INNS</p> <p>NRW (A) agree with the Applicant's assessment of no potential to introduce or spread INNS within the Clwyd waterbody as there is no proposed activity or vessel activity within the waterbody.</p>	The Applicant notes NRW (A)'s response and welcomes its agreement that there is no potential to introduce or spread INNS within the Clwyd waterbody, and that the Mona Offshore Wind Project would have no potential to cause a deterioration in the status of the Clwyd waterbody, or prevent the Clwyd water body from meeting its objectives with respect to INNS.
198	<p>6. WFD Regulations Protected Areas</p> <p>NRW (A) agree with the Applicant's assessment that WFD protected areas should be assessed for impact from the proposed activities and should be scoped in for detailed assessment. We agree with the assessment that these areas should include the Y Fenai a Bae Conwy/Menai Strait and Conwy SAC and the Bae Lerpŵl/Liverpool Bay SPA.</p>	The Applicant notes NRW (A)'s response and its agreement that it was appropriate for Y Fenai a Bae Conwy/Menai Strait and Conwy SAC and Bae Lerpŵl/Liverpool Bay SPA to be scoped in for assessment.
199	NRW (A) question the validity of the conclusion that the construction, operation and maintenance and decommissioning of the Mona Offshore Wind Project offshore export cables and landfall works will not cause deleterious impact to the status of the North Wales Water body protected areas.	The Applicant notes NRW (A)'s overall conclusion in Row 150 above which states that NRW (A) "...support the assessment conclusion in F6.2.2 that the proposed works will not cause deterioration to the water quality of either of the water bodies considered... nor the individual elements of these water bodies" which appears to contradict this statement.

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		The Applicant disagrees with this comment and provides further clarification to this in the response in Row 200 below.
200	NRW (A) advise the numerically modelled Zol is appropriate to determine the extent of impact of the proposed activity in transitional and coastal waterbodies and the Zol should be used for assessment rather than limiting it to 2 km of the footprint of the activity itself. In the marine environment, waterbodies are hydrologically linked and so impact pathways are less constrained than in other surface waters. The proposed activity presents a high risk of causing deterioration to the status of these protected areas, warranting an extension of the spatial area to be considered for impact beyond 2 km.	<p>The Applicant notes NRW (A)'s response; however the Applicant disagrees with the statement that the Mona Offshore Wind Project presents a high risk of causing deterioration to the status of protected areas within the 2 km Zol, which would include Y Fenai a Bae Conwy/Menai Strait and Conwy SAC, Bae Lerpwl/Liverpool Bay SPA, Abergele (Pensarn) bathing water. The Applicant has engaged with NRW (A) to agree the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the Zol based on physical processes numerical modelling is appropriate and sufficient. To this end, the Applicant understands that NRW (A) has no further concerns or queries relating to the spatial extent of the Zol, and is satisfied that the Mona Offshore Wind Project does not pose a risk to any protected areas within the Zol.</p>
201	Further assessment required NRW (A) advise the Applicant to include Rhyl, Rhyl East and, Kimnel Bay (sandy Cove) and Abergele (Pensarn) bathing waters sites for assessment of impact, rather than only assessing Abergele (Pensarn) as the assessment currently stands. The proposed activity presents a high risk of causing deterioration to the status of these protected areas, warranting an extension of the spatial area to be considered for impact beyond the 2 km considered by the Applicant.	<p>The Applicant notes NRW (A)'s response, however the Applicant disagrees with the statement that the Mona Offshore Wind Project presents a high risk of causing deterioration to the status of the Rhyl, Rhyl East, Kimnel Bay (Sandy Cove) and Abergele (Pensarn) bathing waters.</p> <p>With regards to scoping in additional bathing waters for detailed assessment, please refer to the Applicant's response to NRW (A) in Rows 159 and 200 above. Additionally, the Applicant has engaged with NRW (A) to agree the best approach to address their concern on this matter, and WFD Coastal Waters Assessment supporting information (S_D3_13) has been submitted alongside this response document.</p> <p>The Applicant has had further discussion with NRW (A) in regard to this matter and NRW (A) has agreed with the Applicant's conclusions that the Zol based on physical processes numerical modelling is appropriate and sufficient. To this end, the Applicant understands that NRW (A) has no further concerns or queries relating to the spatial extent of the Zol, and is satisfied that the Mona Offshore Wind Project does not pose a risk to any protected areas (including bathing waters) within the Zol.</p>
202	We advise the Applicant should assess the potential for an elevated concentration of suspended sediment at the bathing waters monitoring points. Consideration could be given to timing the	The Applicant notes NRW (A)'s response, however highlights that bathing water status is determined by analysis of the presence/concentration of <i>Escherichia coli</i> and intestinal enterococci faecal indicator organisms, and that short-term water

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	<p>proposed works so they do not coincide with the bathing waters monitoring season (May to September). We further advise that the impacts of accidental spillage of contaminants should be factored in for consideration and assessment of the impacts on bathing waters.</p>	<p>turbidity (i.e. elevated SSC) would not be a determining factor in classification of bathing water status.</p> <p>The WFD assessment presented in Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2) was undertaken in the context of mitigation measures (discussed at section 1.2.2 therein) being secured and in place. As such accidental spills and pollution events were scoped out as these will be considered within the PEMP. The PEMP will include an MPCP, chemical risk assessment, and waste management and disposal arrangements will be mitigated by measures outlined in the PEMP and a MPCP. This is set out in the Mitigation and Monitoring Schedule (J10 F04). The Mitigation and Monitoring Schedule and Marine Licence Principles Document (J9 F04) demonstrate that the Applicant anticipates this commitment will be secured within the standalone NRW Marine Licence.</p>
203	<p>In combination effects</p> <p>NRW (A) note that in-combination effects have been assessed (Habitats Regulations Appropriate Assessment) for the European protected areas hydrologically linked directly to the North Wales waterbody that lie within 2 km of the proposed activity, and that no combined impacts have been identified. We support this conclusion but advise that in-combination effects must also be assessed for impact to WFD waterbody status.</p>	<p>The Applicant notes NRW (A)'s suggestion that cross-referencing to the relevant section of the HRA Stage 1 Screening Report (E1.4 F02) would provide adequate compliance with regulations.</p> <p>However, given that no combined impacts were identified within the HRA in-combination assessment (section 1.5 of the HRA Stage 1 Screening Report (E1.4 F02)), the suggested change would not alter the outcome of the assessment presented in Volume 6, Annex 2.2 WFD Coastal Waters Assessment (F6.2.2).</p>
204	<p>Further assessment required</p> <p>Other activities in a water body have the potential to act in-combination with the proposal under consideration, for example by adding to or magnifying its effects, or by increasing the risk of deterioration of a quality element. An assessment of the potential in-combination effects of the proposal on WFD waterbody status and the impact on the likelihood of a waterbody meeting its objectives is required, however we note this has been carried out under the HRA in-combination assessment (Document E1.4 (MOCNS-J3303-RPS-10025), section 1.5 (Approach to the in-combination assessment), pg 439). We therefore suggest that cross-referencing to the relevant section in this document would be sufficient to address this issue and provide adequate compliance with regulations.</p>	
205	<p>8. Decommissioning - Offshore</p> <p>We acknowledge the commitment in F1.3 to produce a Decommissioning Programme under section 105 of the Energy Act</p>	<p>This is noted and welcomed by the Applicant.</p>

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	2004 to be approved by the Secretary of State for the Department of Energy Security and Net Zero (DESNZ).	
206	When a decommissioning programme is produced for consultation, NRW (A) advise that the programme should retain all decommissioning options (maintain, full removal, and partial removal) so that all options can be fully assessed and refined closer to the time of decommissioning itself. NRW (A) reserves its position until a draft plan is submitted at which point we will provide further advice.	It is the Applicant's intention to secure decommissioning activities through a separate standalone Marine Licence at the relevant time. The scope of decommissioning works will take account of best practice and new technologies available at the time of submission including the various decommissioning options as well as the relevant legislation and guidance.
207	We welcome the clarity provided by the Applicant, in the DCO documentation (PDA-008) with respect to the intention for decommissioning activities to be secured through a separate standalone Marine Licence at the relevant time. We agree with this approach and request that NRW (A) are consulted, in writing, at the relevant time.	It is the Applicant's intention to secure decommissioning activities through a separate standalone Marine Licence at the relevant time. The scope of decommissioning works will take account of best practice and new technologies available at the time of submission including the various decommissioning options as well as the relevant legislation and guidance.
208	<p>9. Mitigation and Monitoring Schedule and Marine License Principles</p> <p>Through the DCO process, we have advised that the Applicant conducts a thorough review of the <i>Mitigation and Monitoring Schedule</i> (J10) and the <i>Marine Licence Principles</i> (J9 F04) documents in order to ensure that all conditions are accurately captured across all relevant documentation and consenting regimes.</p>	The Applicant continues to keep the Mitigation and Monitoring Schedule (J10 F04) and the Marine Licence Principles Document (J9 F04) under review and is updating these documents as required.
209	<p>1. There remain a number of (minor) discrepancies between the documents that may result in confusion and uncertainty as to the extent of measures that may be secured in respective consents (DCO and TA ML). We continue to advise that the Applicant undertakes a full review of these documents so as to provide assurance that measures are appropriately captured. It is important that all relevant documents are consistent and contain accurate reference to all proposed mitigation, monitoring and plans as described in the application documents and agreed with interested parties. We note from review of the <i>Marine Licence Application</i> form (A1) that page 5 explains the use of the terminology Mean Low Water (MLW) and Mean High Water (MHW) compared to Mean Low Water Springs (MLWS) and Mean High Water Springs (MHWS). However, we note that</p>	This point was discussed at the DCO hearing on 24th October and the Applicant explained that the confusion has arisen because MHWS and MLWS are not shown on the base OS mapping used for the Mona application plans. The Applicant is working on a solution to this which it will confirm at for Deadline 5 of the DCO Examination and will provide any necessary update to the standalone NRW Marine Licence application following that. The Applicant wishes to make it clear that the identification of MLW/MHW and MLWS/MHWS does not affect any of the assessments undertaken or the scope of the standalone NRW Marine Licence and the DCO, including the deemed Marine Licence.

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	<p>the DCO application documents and the TA ML application docs use MLWS and MHWS. We note that the A1 states that “Any discrepancy between MHW and MHWS at this location is likely to be small” but that this statement is not supported. We request clarification with respect to interchangeability of this terminology and any implications for the assessments and relevant licences).</p>	
210	<p>10. Designated Landscapes 10.1 Detailed Comments</p> <p>Our landscape advice relates to the Isle of Anglesey (IoA) National Landscape (NL), Eryri National Park (ENP), and the Clwydian Range and Dee Valley (CRDV) NL, and the statutory purpose of these designations to conserve and enhance their natural beauty. For the purposes of this advice, these designations are referred to collectively as Statutory Designated Landscapes (SDLs).</p> <p>Transmission assets proposed as part of the Mona Offshore Windfarm Project comprise:</p> <ul style="list-style-type: none"> <li>• up to 4 x export cables,</li> <li>• 3 x interconnector cables, and</li> </ul> <p>4 x offshore substation platforms (OSPs).</p>	The Applicant notes NRW (A)'s response.
211	<p>The export and interconnector cables would not impact on landscape or visual receptors within SDLs because they would typically be buried beneath the seabed, and at landfall in Llanddulas, the export cables would be buried from seaward of MLWS up to the onshore Transition Joint Bays (TJBs). The TJBs would be backfilled and reinstated once construction is completed.</p>	The Applicant notes NRW (A)'s response.
212	<p>The four OSPs would be located within the Mona Array Area and have the potential to impact on landscape and visual receptors within SDLs. The main structure of the OSPs would have a maximum height of 70m above Lowest Astronomical Tide (LAT), a maximum length of 80m and maximum width of 60m. The maximum height of lightning protection and ancillary structures on the OSPs, e.g. helideck, is 90m above LAT. The OSPs would be subject to regular operations and maintenance visits.</p>	The Applicant notes NRW (A)'s response.

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213	The OSPs are shown together with the wind turbines on the wirelines and photomontages (visualisations) prepared by the Applicant <sup>3</sup> . The OSPs are not shown on the cumulative wirelines <sup>4</sup> and the reason for this omission is not known.	Within the cumulative wirelines (S_D3_15), the OSPs have been modelled as wind turbines. This is also the case for other offshore wind developments. This is because their location, within both the Mona Array Area and in other offshore wind developments, is not known.
214	We have been unable to find the layout of the OSPs used for the preparation of the visualisations and it is understood their location would not be defined until the detailed design stage post-consent. However, if located within the Mona Array Area, as is proposed, the OSPs would be located at a minimum distance of approximately 29km from the loA NL, 36km from ENP, and 41km from the CRDV NL. Based on the visualisations, it is assumed the OSPs would be distributed throughout the Array Area rather than being concentrated in one location and therefore at least some of the OSPs are expected to be located beyond these distances and out of sight at certain viewpoints within the SDLs.	As per section 3.23 of the Marine Licence Principles Document (J9 F04), it is anticipated that the standalone NRW Marine Licence will require submission of a Project Layout Plan to the Licensing Authority for written approval prior to the commencement of Licensed Activities.
215	As shown on the Applicant's visualisations, OSPs are expected to be visible in conditions of good visibility from viewpoints (VP) within the loA NL (e.g. VP4: Bwrdd Arthur trig point) and ENP (e.g. VP 33 Summit of Conwy Mountain). However, due to the distances involved relative to the scale of the structures proposed, the OSPs would not be expected, individually, to generate significant adverse effects on receptors within these landscapes, nor the CRDV NL.	The Applicant notes NRW (A)'s response.
216	In combination with the proposed wind turbines within the Mona Offshore Windfarm Project, the OSPs would add an additional industrial element, adding additional clutter to the wider seascape. However, the OSPs would be a minor component in comparison to the scale and number of turbines proposed, and therefore, in relation to receptors within SDLs, the combined effect would not be significantly greater than identified in our comments for the wind turbines, nor would the OSPs impact upon any additional receptors to those impacted by the wind turbines. Please refer to our Written	The Applicant notes and welcomes NRW (A)'s position that the OSPs would be a minor component in any impacts upon the wider seascape, and that the combined effect would therefore not be significantly greater than identified for the Mona Offshore Wind Project generation assets alone.

<sup>3</sup> APP-106 to APP-111.

<sup>4</sup> APP-112

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	<p>Representations submitted as part of the DCO Examination process for the Mona Offshore Wind Project (<a href="#">REP1-056</a>) for further detailed comments in relation to the wind turbines.</p>	
217	<p>11. Materials and Waste</p> <p>NRW (A) notes that the final <i>Site Waste Management Plan</i> (J26.9) will be approved by the LPA. We agree with this approach and consider that waste will be appropriately managed. NRW (A) should be consulted, in writing, on the final <i>Site Waste Management Plan</i> as part of the Code of Construction Practice (J26).</p>	<p>The Applicant welcomes the response and confirms that NRW (A) will be consulted on the final <i>Site Waste Management Plan</i> as part of the discharge of the final Code of Construction Practice under Requirement 9 of the Draft Development Consent Order which has been submitted as part of the DCO Application.</p>

## 1.3 References

- Benhemma-Le Gall, A., Graham, I. M., Merchant, N. D. and Thompson, P. M. (2021). Broad-Scale Responses of Harbor Porpoises to Pile-Driving and Vessel Activities During Offshore Windfarm Construction. *Frontiers in Marine Science*, 8. DOI:10.3389/fmars.2021.664724.
- Coull, K.A., Johnstone, R, and Rogers, S.I. (1998) Fisheries Sensitivity Maps in British Waters. UKOOA Ltd: Aberdeen.
- Ellis, J., Milligan, S., Readdy, L., Taylor, N. and Brown, M. (2012). Spawning and nursery grounds of selected fish species in UK waters, Centre for Environment Fisheries and Aquaculture Science (CEFAS). CEFAS Science Series Technical Report pp.56.
- Elmegaard, S. L., Teilmann, J., Rojano-Doñate, L., Brennecke, D., Mikkelsen, L., Balle, J. D., Gosewinkel, U., Kyhn, L. A., Tønnesen, P., Wahlberg, M., Ruser, A., Siebert, U. and Madsen, P. T. (2023). Wild harbour porpoises startle and flee at low received levels from acoustic harassment device. *Scientific Reports*, 13 (1), pp.16691. DOI:10.1038/s41598-023-43453-8.
- Environment Agency (2023) 'Clearing the Waters for All' Guidance. Water Framework assessment: estuarine and coastal waters. Available: <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>. Accessed November 2024.
- Fewtrell, J.L., and McCauley, R.D. (2012) Impact of air gun noise on the behaviour of marine fish and squid. *Marine Pollution Bulletin*, 64(5), 984-93.
- McCauley, R.D., Fewtrell, J., Duncan, A.J., Jenner, C., Jenner, M.N., Penrose, J.D., Prince, R.I.T., Adhitya, A., Murdoch, J., and McCabe, K. (2000) Marine Seismic Surveys – A Study of Environmental Implications. *Apnea Journal*, 692-707.
- Mona Offshore Wind Ltd. (2024a) Mona and Natural Resource Wales (Advisory) Offshore SoCG. Available: [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-000871-S\\_D1\\_12\\_Mona\\_NRW\(A\)%20\(advisory\)%20Offshore%20SoCG.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-000871-S_D1_12_Mona_NRW(A)%20(advisory)%20Offshore%20SoCG.pdf). Accessed October 2024.
- Mona Offshore Wind Ltd. (2024b) Appendix to Response to Written Representations: NRW (A). [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-001035-S\\_D2\\_3.2\\_Mona\\_Appendix\\_Response%20to%20WRs%20NRW\(A\).pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-001035-S_D2_3.2_Mona_Appendix_Response%20to%20WRs%20NRW(A).pdf). Accessed October 2024.
- Natural Resources Wales (2024) WRITTEN SUBMISSION FOR DEADLINE 1. Available: [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-000854-Natural%20Resources%20Wales\\_Written%20Representations.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-000854-Natural%20Resources%20Wales_Written%20Representations.pdf). Accessed October 2024.
- Pearson W.H., Skalski, J.R., Skulkin, S.D., and Malme, C.I. (1994). Effects of seismic energy releases on the survival and development of zoeal larvae of Dungeness crab (*Cancer magister*). *Marine Environmental Research*, 38, 93-113.
- Popper, A.N., Hawkins, A.D., Fay, R.R., Mann, D., Bartol, S., Carlson, T., Coombs, S., Ellison, W.T., Gentry, R., Halvorsen, M.B., Lokkeborg, S., Rogers, P., Southall, B.L., Zeddies, D.G., and Tavolga, W.N. (2014) ASA S3/SC1.4 TR-2014 Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report prepared by ANSI-Accredited Standards Committee S3/SC1 and registered with ANSI. Springer and ASA Press, Cham, Switzerland.