



PLANNING ACT 2008

RELEVANT REPRESENTATION

AQUIND INTERCONNECTOR

MMO REF: DCO/2018/00016

PINS REF: EN020022

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1. Title of project

- 1.1. On 6 January 2020, the Marine Management Organisation (the “MMO”) received notice under section 56 of the Planning Act 2008 (the “2008 Act”) that the Planning Inspectorate (“PINS”) had accepted an application made by AQUIND Limited (the “Applicant”) for a development consent order (the “DCO Application”) (MMO ref: DCO/2018/00016; PINS ref: EN020022).
- 1.2. The DCO Application includes a draft development consent order (the “DCO”) and an environmental statement (the “ES”). The draft DCO includes, at Schedule 15, draft Deemed Consent under Part 4 (Marine Licensing) of the Marine and Coastal Access Act 2009 (the “Deemed Marine Licence”).
- 1.3. The DCO Application seeks authorisation to construct and operate an electricity interconnector with a net transmission capacity of 2000 megawatts between France and the UK (the “Project”).
- 1.1. The Project would comprise a range of terrestrial and marine developments with several work items that have the potential to impact on the UK marine area as defined in Section 42 of the Marine and Coastal Access Act 2009 (the “2009 Act”). The MMO’s focus is to ensure that an adequate assessment of potential impacts to the marine area has been undertaken and that appropriate mitigation measures to address potential impacts are identified and secured before consent for the Project is given.

2. Scope of these representations

- 2.1. The MMO was established by the 2009 Act to make a contribution to the achievement of sustainable development in the marine area and to promote clean, healthy, safe, productive and biologically diverse oceans and seas. The UK Government’s Marine Policy Statement forms the framework for the MMO’s management of the marine area.
- 2.2. This document comprises the MMO’s initial comments in respect of the DCO Application in the form of a relevant representation. This is without prejudice to any future representations the MMO may make about the DCO Application throughout the examination process. This is also without prejudice to any decision the MMO may make on any associated application for consent, permission, approval or any other type of authorisation submitted to the MMO either for the works in the marine area or for anything else.
- 2.3. These representations comprise:
 - a summary of the MMO’s initial key issues – **section 3**
 - details of the MMO’s pre-application involvement – **section 4**
 - the MMO’s initial comments on the marine policy and planning context – **section 5**

- the MMO's initial comments on the licensing requirements of the 2009 Act – **section 6**
 - the MMO's initial comments on the draft DCO and draft Deemed Marine Licence – **section 7**
 - the MMO's initial comments on the Environmental Statement – **section 8**
 - contact details for officials within the MMO – **section 9**
- 2.4. Due to the volume of material presented in the DCO Application, it may be that the Applicant has presented information relating to issues raised in these representations that the MMO has not yet come across following its initial assessment of the DCO Application. The MMO will continue to consider the DCO Application and reserves the right to add to, amend or withdraw, from time to time, part or all of these representations.

3. Summary of issues

- 3.1. The MMO has undertaken an initial review of the DCO Application. At this time, the MMO highlights the following main issues:
- The MMO disagrees with the inclusion of Arbitration process as set out in the draft DCO.
 - The definition of '*maintain*' as stated in the DCO and associated DML requires clarification.
 - There are a number of points to clarify within the ES relating to dredging and disposal, particularly the specifics of what proportion of material dredged will be used as backfill, before an appropriate assessment of disposal sites can be conducted. At this point, it's unclear whether a new disposal site needs to be designated. There are inaccuracies in the interpretation of the sediment contaminant data relating to PCBs and the MMO request that the applicant rectifies these points.
 - The level of risk to herring spawning is uncertain and cannot be fully determined. Consequently, precautionary approach should be adopted and the MMO recommends mitigation in the form of a seasonal restriction on seabed preparation and cable laying activities between 1st November and 31st January. Improved and refined data will allow the MMO to ascertain if, and to what extent, site-specific mitigation is required.
 - The underwater noise assessment provided in Chapter 10 of the ES is vague in places, and the evidence to support the conclusions is lacking. Further information is requested from the applicant, as outlined in section 8.

3.2. The MMO will seek to engage with the Applicant with a view to resolve all the issues in the hope that agreement on all points can be achieved in the course of Examination.

3.3. A more detailed explanation of the issues is presented in the following sections.

4. Pre-application consultation

4.1. During the pre-application stages of this application the applicant has engaged with the MMO on a number of occasions. Notably, the MMO has been provided with the opportunity to review and comment on draft versions of the Section 42 Preliminary Environmental Information Report (PEIR), and Deemed Marine Licence (DML).

5. Policy and planning

5.1. In examining the DCO Application, PINS is required to have regard to the Marine Policy Statement and any relevant marine plan.

5.2. The MMO is the marine plan authority for the English inshore and offshore regions. In this regard, the MMO confirm that, as proposed, the Project will be undertaken within the South East Inshore Marine Plan Area.

6. Licensing requirements of the 2009 Act

6.1. Section 66 of the 2009 Act sets out which activities in the UK marine area require a marine licence. In broad terms, this includes any activity which involves the deposit or removal of articles or substances below the level of mean high water springs, unless a relevant exemption applies.

6.2. Section 81(1) of the 2009 Act sets out an exemption for activities undertaken in the course of laying or maintaining an offshore stretch (defined in Section 81(4) as being beyond the seaward limits of the territorial sea) of an 'exempt cable' (as defined in Section 81(5) below). Further, activities such as clearance dredging and side-casting of sandwaves undertaken to facilitate the laying of a cable would reasonably be considered to be undertaken in the course of laying a cable and may not require a licence beyond 12 nautical miles.

6.3. Under Section 81(5)1 of the 2009 Act a submarine cable is exempt unless it is a cable constructed or used in connection with:

- the exploration of the UK sector of the continental shelf;
- the exploitation of natural resources of that sector;
- the operations of artificial islands, installations and structures under UK jurisdiction; or
- the prevention, reduction or control of pollution from pipelines.

6.4. For Nationally Significant Infrastructure Projects ("NSIPs"), a DCO may include provisions deeming a marine licence for licensable activities taking place in the

marine area. Alternatively, applicants may seek a marine licence directly from the MMO.

6.5. In the present case, the MMO understands that the Applicant is seeking consent for all licensable activities via deemed consent within the draft DCO, the Deemed Marine Licence.

6.6. The MMO has reviewed the DCO Application documents and sets out in the following table all works related to the Project which have so far been identified as to be carried out in the UK marine area. The MMO also refers to points 6.2 and 6.3 above, in relation to the offshore section of the cable, which may be exempt. The MMO would also highlight that any other activities which may be below Mean High Water Springs (MHWS) must be brought to our attention. The works identified so far are:

Works No and description	Details of works in the marine area
Work No. 6	Marine high-voltage direct current (HVDC) cables within the Order limits seaward of MHWS and landward of Mean Low Water Springs (MLWS) between Work No. 5 and Work No. 7 including where required works to facilitate horizontal directional drilling (HDD).
Work No. 7	Marine HVDC cable works consisting of – (a) marine HVDC cables of up to 109 kilometres (each cable circuit) between the UK exclusive economic zone with France and Works No. 6 including where required works to facilitate HDD; and (b) up to 4 temporary HDD entry/exit pits; and (c) a temporary work area for vessels to carry out intrusive activities.
Further associated development within marine environment	In connection with such Works Nos. 6 to 7 and to the extent that they do not otherwise form part of any such work, further associated development within the meaning of section 115(2) of the 2008 Act comprising other works as may be necessary or expedient for the purposes of or in connection with the relevant part of the authorised development and which fall within the scope of the work assessed by the environmental statement and the provisions of this licence, including but not limited to – (a) temporary cable burial equipment trials; (b) cable protection; (c) the removal of material from the seabed required for the construction of Work Nos. 6 and 7 and the disposal of up to 1,754,000m ³ of inert material of natural origin at disposal site reference [xxxx] within the extent of the Order limits seaward of MHWS produced during the Works; (d) the construction of crossing structures over cables that are crossed by the marine HVDC cable; and

	(e) such other works as may be necessary or expedient for the purpose of or in connection with the construction or use of the authorised development and which do not give rise to any materially new or materially different environmental effects from those assessed as set out in the environmental statement.
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- 6.7. The above Further associated development within marine environment section point (e) “other works” should include consideration of works such as unexploded ordnance (UXO) investigations and detonations and ongoing additional cable protection works which do not give rise to any materially new or materially different environmental effects from those assessed as set out in the environmental statement.
- 6.8. In order for any of the above activities to be included in the Deemed Marine Licence, the Applicant needs to clearly demonstrate through the environmental impact assessment (“EIA”) process that the environmental impact of all licensable activities has been assessed and, where required, mitigated.

7. Draft Development Consent Order (DCO) and draft Deemed Marine Licence (DML)

- 7.1. Part 1 General Provisions, Citation and commencement - Interpretation: The wording “*in respect of any other works comprised in the authorised development beginning to carry out any material operation*” is not sufficiently precise and has the potential to include works which have not been properly assessed and which may impact upon the environment prior to the approval of appropriate methodologies. The MMO recommends that these words are removed from the section, or clarification is provided by the applicant.
- 7.2. Part 1 General Provisions – Interpretations: The definition of land states: “*land*” includes land covered by water, any interest in land or right in, to or over land;” The definition of “land” as set out above could be interpreted as intertidal area, i.e. *land covered by water*. This sentence should be amended to clarify that it relates to land above MHWS.
- 7.3. The MMO does not consider that installation of new cable protection post-construction falls within the definition of ‘maintain’. Additional cable protection to be laid during the operation of the cable following cable repair must be included as a separate ‘work’ and defined in the interpretations.
- 7.4. In relation to maintenance activities, it is recommended that an outline Operations and Maintenance plan is provided as part of the application and as a certified document. This plan should detail what operations and maintenance is assessed in the ES and references to the appropriate section of the ES.
- 7.5. Part 2 Principle Powers - Power to maintain authorised development 5 (1): See MMO comment at 7.3 regarding the definition of “*maintain*”.

- 7.6. Part 4 Supplemental Powers - Protective work to buildings: Article 18 (1) states: *“Subject to the following provisions of this article, the undertaker may at its own expense carry out such protective works to any building lying within the Order limits as the undertaker considers necessary or expedient.*
(2) Protective works may be carried out—
(a) at any time before or during the carrying out in the vicinity of the building of any part of the authorised development; or
(b) after the completion of that part of the authorised development in the vicinity of the building at any time up to the end of the period of five years beginning with the day on which that part of the authorised development is first opened for use.”

The applicant must clarify that this Supplemental Power relates to buildings on land only i.e. above MHWS.

- 7.7. Part 4 Supplemental Powers - Authority to survey and investigate the land: 19(1) States: *The undertaker may for the purposes of this Order enter on any land within the Order limits landwards of MLWS or which may be affected by the authorised development within Works Nos. 1 to 5 (inclusive) and—*
(a) survey or investigate the land;
(b) without prejudice to the generality of sub-paragraph (a), make trial holes in such positions on the land as the undertaker thinks fit to investigate the nature of the surface layer and subsoil and remove soil samples;
(c) without prejudice to the generality of sub-paragraph (a), carry out ecological or archaeological investigations on such land, including the digging of trenches; and
(d) place on, leave on and remove from the land apparatus for use in connection with the survey and investigation of land and making of trial holes.

The MMO confirm that its jurisdiction extends to MHWS, and includes the area above MLWS/MLW up to MHWS. Therefore some of the activities set out such as trenching, and digging of trial holes, may be a licensable activity and would require approval from the MMO.

- 7.8. Part 5 Powers of Acquisition - Statutory undertakers: 33(1)(c) states: *“Subject to the provisions of Schedule 13 (Protective provisions), the undertaker may—*
(a) acquire compulsorily or acquire new rights or impose restrictive covenants over the land belonging to statutory undertakers within the order limits landwards of MLWS and described in the book of reference;
(b) extinguish or suspend the rights of, remove, alter, renew, relocate or reposition the apparatus belonging to statutory undertakers over or within the Order limits landwards of MLWS; and
(c) construct the authorised development in such a way as to cross underneath or over apparatus belonging to statutory undertakers and other like bodies within the Order limits landwards of MLWS.”

The MMO confirm that its jurisdiction extends to MHWS, and includes the area above MLWS/MLW up to MHWS. Therefore some of the activities set out above may be a licensable activity and would require approval from the MMO.

- 7.9. Part 7 Miscellaneous and general - Felling or lopping of trees and removal of hedgerows: See 7.7 and 7.8 regarding the term “*landward of MLWS*”.
- 7.10. Part 7 Miscellaneous and general – Arbitration: Article 45 proposes that any difference shall be referred to and settled in arbitration in accordance with the rules set out.
- 7.11. In comparison to previously approved articles for arbitration, Article 45 sets out significantly different conditions and timeframes, which the MMO does not consider to be acceptable. The MMO notes that arbitration provisions tend to follow model clauses and be confined to disputes between the applicant/beneficiary of the DCO and third parties e.g. in relation to rights of entry or rights to install/maintain apparatus. The MMO does not consider that it was intended to apply such provisions to disagreements between the undertaker and the regulator, and strongly questions the appropriateness of making any regulatory decision or determination subject to any form of binding arbitration as set out by Article 45.
- 7.12. When the MMO was created by Parliament to manage marine resources and regulate activities in the marine environment, the Secretary of State delegated his/her functions to the MMO under the 2009 Act. As both the role of the Secretary of State (in determining DCO applications) and the role of the MMO (as a regulator for activities in the marine environment) are recognised by the Planning Act (PA) 2008, the responsibility for the DML passes from the Secretary of State to the MMO once granted. The MMO is responsible for any post-consent approvals or variations, and any enforcement actions, variations, suspensions or revocations associated with the DML.
- 7.13. It was not the intention of Parliament to create separate marine licensing regimes following different controls applied to the marine environment. In fact, one of the aims of the PA 2008 is the provision of a ‘one stop shop’ for applicants seeking consent for a National Significant Infrastructure Project (NSIP). The new regime allows for the applicant to choose whether to include a DML issued under the 2009 Act within the DCO provision, or apply to the MMO for a stand-alone licence covering all activities in the marine environment. In any case, it is crucial that consistency is maintained between DMLs granted through the provision of a DCO, and Marine Licences issued directly by the MMO independent of the DCO process.
- 7.14. It is the MMO’s opinion that the referral to arbitration in situations where ‘difference’ may arise, is contrary to the intention of Parliament and usurps the MMO’s role as regulator for activities in the marine environment. Considering the draft DML, the MMO believes that the ‘differences’ to which arbitration would be applied are those situations in which the MMO is required to give further consent or approval. These situations appear to arise when small re-determinations of aspects of the marine licence process have to take place.
- 7.15. Generally, the MMO considers these to be technical determinations that fall properly to the MMO to make, (as the expert regulator in this field and the body created by Parliament for this purpose), and that MMO’s determinations in this regard should not be open to challenge through an arbitration process. Furthermore, once the DCO is granted, the DML falls to be dealt with as any other Marine Licence, and any

decisions and determinations made once a DML is granted fall into the regime set out in the 2009 Act. Any decisions or actions the MMO carries out in respect of a DML should not be made subject to anything other than the normal approach under the 2009 Act. To do so introduces inconsistency and potentially unfairness across a regulated community. In the case of any disagreement which may arise between the applicant and the MMO throughout this process, there is already a mechanism in place within that regime to challenge a decision through the existing appeal routes under Section 73 of the 2009 Act. The MMO feels it is inappropriate to take such decision relating to post-consent issues with a DML outside of the normal mechanisms available to challenge such decisions, and to apply arbitration.

- 7.16. The arbitration process as set out in Article 45 describes a private process and requires the agreement that all discussions and documentation will be confidential and not disclosed to third parties without written consent. The MMO would like to highlight that the regulatory decisions, and indeed any challenges through the existing mechanisms should be publically available and open to scrutiny. In many cases, members of the public or other stakeholders may wish to make representations in relation to post-consent matters. Ordinarily, their views would be considered by the MMO and they would have the opportunity to follow up and challenge the decision making e.g. through the MMO complaints process, by complaint to the Ombudsman, or by Judicial Review. A private arbitration to resolve post-consent disputes would reduce transparency and accountability.
- 7.17. The MMO considers that Article 45 would shift the MMO's decision making responsibility from the hands of the regulator with primary responsibility for administering the marine licensing regime to an independent arbitrator. This would be contrary to the intention of Parliament set out in the 2009 Act and would potentially usurp the MMO's role as a regulator. The MMO therefore requests that the MMO is explicitly not subjected to these provisions, in line with the recommendation of the Planning Inspectorate in their proposed changes to the draft DCO for the Hornsea Three Offshore Wind Farm (Relevant Representation PD-017: The Examining Authority's Schedule of Changes to the draft DCO).
- 7.18. Schedule 1 Authorised Development - Work no 6 and Work no 7 (a): These Works include the wording "*..including where required works to facilitate HDD*". The wording used does not accurately describe what works are required to facilitate HDD. The MMO recommends that all intertidal activities, including a full methodology of HDD work, is set out in an Intertidal Works plan, which should set out full methodology of HDD, programme of works and proposed vehicular access routes. The Plan should be submitted no less than 6 months prior to proposed Intertidal works, and works will not commence until the Plan has been gained written approval from the MMO.
- 7.19. Schedule 1 Authorised Development - Work no 7 (a) temporary cable burial equipment trials. The MMO would advise that any cable burial equipment trials that involve a licensable activity will need to be properly assessed and approved by the MMO. Details required for any assessment must include as a minimum, methodology, location and spatial length of trial burial.
- 7.20. Schedule 1 Authorised Development: Work no 7. Reference is made to "*disposal site reference [xxxx]*". The MMO would advise that a unique reference number will be

allocated once a disposal site has been designated by Centre for Environment, Fisheries and Aquaculture Science (Cefas). The applicant must ensure that the disposal site reference number is included in the final draft of the DCO.

- 7.21. Schedule 1 Authorised Development - Work no 7: The sentence at the top of page 40 appears to include a superfluous word, namely “is”.
- 7.22. Schedule 2 Requirements - Interpretation (5): This article states “*Unless otherwise provided in this Order, where a Requirement relates to a specific Works (or a part thereof) and it specifies “commencement of development, it refers to the commencement of development in relation to those Works only.”*” The MMO considers the term “commencement of development” to mean the commencement of the whole project. Therefore the MMO suggests that an alternative form of wording is used for commencement of specific Works.
- 7.23. Schedule 2 Requirements - Time limits 2(2): This article states the following: “*The undertaker will provide to each local planning authority in whose area the authorised development is located landwards of MLWS written notice of commencement not less than 5 working days prior to the proposed date on which the authorised development is commenced.*” The MMO advises that the area landwards of MLWS may in part include the area that falls within the MMO’s jurisdiction, i.e. the area up to MHWS. The definition of “*local planning authority*” is explicitly stated in the draft DCO Definitions section as having the same meaning as in the 1990 Act. Therefore the article does not provide either implicitly or explicitly the requirement to notify the MMO of commencement of development. The MMO therefore requests that this sentence is redrafted so that to include reference to the MMO as a relevant planning authority.
- 7.24. Schedule 2 Requirements – Restoration of land used temporarily for construction: See 7.23 of this document. The MMO requests that this sentence is redrafted so that to include reference to the MMO as a relevant planning authority.
- 7.25. Schedule 3 Procedure for approvals, consents and appeals - Applications made under a Requirement (1): The Appeals procedure set out in this section allows for a decision period of 40 working days (i.e. 8 weeks), after which the discharging authority must make a decision. Where the discharging authority requests further information from the undertaker, the request must be made within the decision period, and any decision must be made up to 40 working days following submission of the further information from the undertaker. The MMO must state that determinations can take more than 8 weeks when documents submitted by an undertaker are of insufficient quality to be discharged or approved. The MMO cannot be held to account for delays in such circumstances. The MMO therefore requests that reference to a time limited decision period is removed.
- 7.26. Schedule 3 Procedure for approvals, consents and appeals - Further Information: See 7.25 above regarding time limits. Whilst the MMO will endeavour to facilitate the discharge of a document, including undertaking consultation if required, the MMO cannot be bound by time limits. The MMO therefore requests that reference to a time limited decision period is removed.

- 7.27. Schedule 3 Procedure for approvals, consents and appeals - Appeals 3(b): See 7.25 of this document. The MMO cannot be held to account in instances where there is insufficient information to discharge a document. Therefore the MMO considers that failing to make a decision within a set period of time, i.e. a “decision period” is not sufficient grounds for appeal.
- 7.28. Marine licence Part 1 - Licenced marine activities 1(1): See MMO comment at 7.3 regarding the definition of “maintain”.
- 7.29. Schedule 15 Deemed marine licence Part 1 - Details of Licensed Marine Activities 2(8) states “*any other works comprised in the preparation of the seabed for the Works*”. The MMO considers that this sentence is not sufficiently precise, and could have the effect of consent being given for licensed activities that have not been properly assessed. The sentence should include; pre-lay grapnel run and removal of discrete items of debris, splicing and clumping of disused cables and side-casting. It should not include mass flow excavation and dredge and disposal activities.
- 7.30. Schedule 15 Deemed marine licence Part 1 – Additional cable protection during operations can be included in the DML but the distinction between this and cable protection during laying needs to be clear. They both need to be assessed in the ES.
- 7.31. Schedule 15 Deemed marine licence Part 2 Conditions - Design Parameters (1): The MMO recommends that the maximum protection volume is stated in the table.
- 7.32. Schedule 15 Deemed marine licence Part 2 - Pre-construction surveys 3(3): This states that the MMO shall determine an application for approval of proposed pre-construction design specification document within 8 weeks of submission. The MMO must state that determinations can take more than 8 weeks when documents submitted by an undertaker are of insufficient quality to be discharged or approved. The MMO therefore requests that this stipulation be amended to show that pre-construction surveys must be submitted a minimum of 8 weeks prior to the planned commencement of works.
- 7.33. Schedule 15 Deemed marine licence Part 2 - Pre-construction surveys 3(3): The pre-construction conditions do not include a requirement to provide details of micro siting around biogenic or geogenic reef features identified as part of the pre-construction monitoring required by condition 10 (1). A requirement to provide and gain approval of a micro siting report to detail any micro siting identified as a result of this monitoring should be included. The micro siting report must also include consideration any potential areas subject to disposal as well as cable installation.
- 7.34. Schedule 15 Deemed marine licence Part 2 - Pre-construction plans and documentation 4 (d)(iii): Waste management and disposal arrangements. The MMO recommends that dredge and disposal arrangements, including a detailed methodology are submitted as a separate Dredge and Disposal Plan document.
- 7.35. Should dredging not commence within 3 years from the date of sampling, additional contaminant analysis may be required. The MMO recommends that a condition be inserted in the DML to address this eventuality.

- 7.36. Schedule 15 Deemed marine licence Part 2 - Pre-construction plans and documentation 5(4): See 7.28 of this document. The MMO cannot be held to account in instances where there is insufficient information provided to discharge a document. Therefore the MMO considers that failing to make a decision within a set period of time, i.e. a “decision period” is not sufficient grounds for appeal.
- 7.37. Schedule 15 Deemed marine licence Part 2 - Chemicals, drilling and debris: Reference is made to “*disposal site reference [xxxx]*”. The MMO would advise that a unique reference number will be allocated once a disposal site has been designated by Cefas. The applicant must ensure that the disposal site reference number is included in the final draft of the DCO.
- 7.38. Schedule 15 Deemed marine licence Part 2 – Post construction surveys 10: The benthic assessment included in the ES will not remain valid for the lifetime of the project and it is recommended that new benthic surveys are undertaken prior to installation of rock protection for cable repairs to ensure that any required mitigation for protected habitats such as *Sabellaria* reef can be properly secured at the time. Benthic surveys should be carried out every 5 years and the method statement should be agreed with the MMO prior to construction.
- 7.39. Schedule 15 Deemed marine licence Part 2 - Cable burial management plan 11(1)(c): Reference is made here to submission of “any additional cable protection”. The MMO seeks clarity as to whether this refers to additional cable protection that has been laid during installation, or proposals of additional cable protection to be laid during operation. A distinction should be made between the two in the DCO.
- 7.40. Schedule 15 Deemed marine licence Part 2 – UXO Activities. The MMO would require the conditions be included to notify the relevant authorities before the commencement of each instance of any UXO activities. The relevant authorities are; the MMO, UK Hydrographic Office (UKHO) and HM Coastguard.
- 7.41. Schedule 15 Deemed marine licence Part 2 – UXO Activities. The MMO would require that a condition be included so that the Undertaker must submit the exact locations and dates of detonation of explosives to the Marine Noise Registry, in order to satisfy the 'Close-out' requirements of the Registry, at 6 month intervals from the commencement of detonation of explosives.
- 7.42. Schedule 15 Deemed marine licence Part 2 – UXO Activities. The MMO would require that a condition be included in order for the Undertaker to submit a Marine Mammal Mitigation Protocol (MMMP) must be submitted to the MMO for approval a minimum of 4 months prior to the commencement of licensed Unexploded Ordnance (UXO) detonation.
- 7.43. Schedule 15 Deemed marine licence Part 2 – UXO Activities. The MMO would require that conditions be included to limit the detonation threshold to 260 kg net explosive quantity (NEQ) and to limit the number of detonations to one per day.
- 7.44. Schedule 15 Deemed marine licence Part 2 – Cable Protection Activities. The MMO would require that conditions be included to notify the relevant authorities (MMO and UKHO) and local mariners before commencement of the activities. Additionally, a

condition should be included to notify the MMO following completion of these activities.

- 7.45. Schedule 15 Deemed marine licence Part 2 – Cable Protection Activities. The MMO would require that a condition be included stipulating that cable protection maintenance activities must not extend for longer than 10 years from the date of completion of the cable laying activities. Additionally, there should be a condition stipulating that cable protection activities must not compromise existing and future safe navigation.
- 7.46. Schedule 15 Deemed marine licence Part 2 – Cable Protection Activities. The MMO would require that a condition be included to submit a post construction phase cable protection plan must be submitted to the MMO for approval a minimum of 6 weeks prior to the commencement of any cable protection works required during the operational phase.
- 7.47. Schedule 15 Deemed marine licence Part 2 – Cable Protection Activities. The MMO would require that a condition be included so that unless otherwise agreed with the MMO, the licence holder must submit International Hydrographic Office (IHO1A) approved sonar or Multi Beam Echo Sounder survey data to the MMO and UKHO, confirming the final clearance depths over the protected cables.
- 7.48. The mitigation schedule summarised in Chapter 6.6 includes relevant references to the DML, however, it is noted that the Applicant has incorrectly referenced Schedule 19, rather than Schedule 15.
- 7.49. The MMO consider that the level of risk to herring spawning is uncertain (see 8.50 of this document) and cannot be fully determined on the basis of information provided. Consequently, precautionary approach should be adopted and the MMO recommends mitigation in the form of a seasonal restriction condition within DML prohibiting any seabed preparation and cable laying activities between 1st November and 31st January.

8. Environmental Statement

8.1. Benthic Ecology

- 8.2. The MMO consider that the benthic ecological features (species and habitats) that may potentially be affected by the proposed project have been adequately characterised via desk-based literature and maps, together with targeted geophysical and ecological surveys of the marine cable corridor.
- 8.3. The MMO consider that the information provided in the ES documents represents a suitable impact assessment based on the information previously presented in the PEIR for the project. The MMO did not identify any notable issues within the PEIR document in relation to this topic.

- 8.4. Through the specifically acquired in situ data pertaining to the benthic biota and associated seabed conditions and the mapping of known designated areas, the applicant has suitably identified species and features of concern.
- 8.5. The mitigation measures proposed for the project within the ES documents all appear suitable. The MMO do not foresee any additional measures that might be considered to further minimise impacts to the benthic ecology. The measures outlined include micro-routing of the cable route to minimise impacts to any Annex I reef features and ensuring no disposal of dredged material will be undertaken in the vicinity of areas of brittlestar beds.
- 8.6. A list of other projects within the wider vicinity of the Project that have the potential to give rise to a cumulative effect on benthic receptors has been considered (Appendix 8.4 - document reference 6.3.8.4). This included major projects (offshore wind farms, interconnector cables, oil and gas), aggregate dredging projects, dredging and disposal projects and coastal projects.
- 8.7. The “Future baseline” sub-section within Chapter 8 represents a rather subjective assessment of this topic. While the MMO agree that the baseline situation presented within the chapter represents the current situation, it is difficult to, and would require a robust dataset together with targeted numerical assessments, assess whether this may be reflective of previous conditions and/or can be used to infer future baselines.
- 8.8. There is a tendency of some of the text within Section 8.6 (Chapter 8) to be subjective and to subtly trivialise impacts. For example, boulder clearance **will** (not ‘likely to’ as is currently stated) remove or displace cobbles, pebbles or small boulders (sub-section 8.6.4.20). Further, statements such as “*the fine sediments that exist naturally in this environment ensure that any species present are already naturally tolerant to a reasonable degree of suspended sediment concentration (SSC)*” are speculative and unquantifiable and the uncertainty in predicting impacts should ideally be highlighted. For example, this statement is dependent on whether the fine sediments already present naturally get suspended into the bottom waters (thereby expose the biota to elevated SSC). However, the MMO do not consider a revision to the text within the ES to be necessary as such subjectivity is often an inherent component of predicting potential impacts.
- 8.9. The MMO considers that all such activities that have relevance to benthic ecology are adequately covered within the ES.
- 8.10. **Dredge and Disposal**
- 8.11. The applicant has confirmed via the MMO Results Template, that SOCOTEC were the contracting laboratory for all analyses (Metals, tins, hydrocarbons and polychlorinated biphenyls). SOCOTEC are appropriately validated by the MMO for all of these analyses. However, the applicant does not appear to have rectified the specific concern that no clarification has been made relating to the contracting laboratory for the PSD analysis for the benthic survey. This should be clarified.

- 8.12. The applicant has noted the following in 7.4.3 (Chapter 7): “Coarse sediment has a limited affinity for sorption of chemical contaminants and therefore sediment contamination would not be expected to pose a significant risk in the offshore areas of the route given the PSD results.”
- 8.13. The point above is an acceptable premise, so long as PSD data are provided to verify that the proposed work area is appropriate. Appendix 6.3 details the grain size statistics and Appendix 8.1 details the findings of the Benthic Ecology Survey Report. Figure 1 (below) displays a map detailing the PSD of the sampling grab locations. From the location of grab station 12 up to station 23, sediment is classified as either sandy gravel or, in one instance, muddy sandy gravel. The MMO consider this acceptable evidence that sediment in the offshore segment of the cable corridor (approximately 50 km from the shore) is sufficiently coarse such that additional sample contaminant analysis is not, at this time, required.

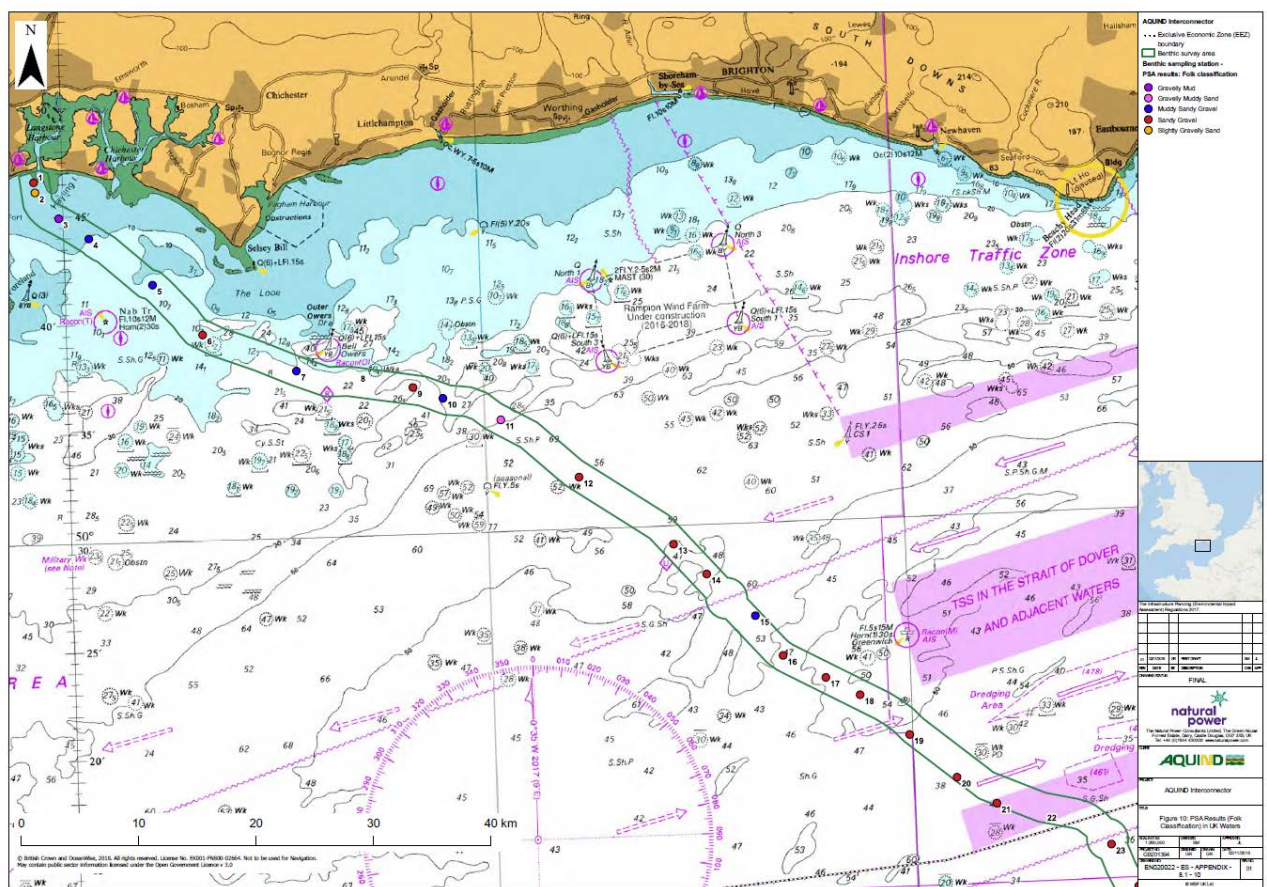


Figure 1. Benthic baseline PSA results based on Folk Classification. No grabs returned from sampling stations 8 and 22. (taken from Figure 9, Benthic Ecology Survey Report)

- 8.14. In the nearshore section of the cable corridor, grab samples show a mixture of sandy gravel, gravelly mud and slightly gravelly sand, but are predominantly muddy sandy gravel. This indicates that material from the nearshore section is less consistently coarse than the offshore section. Table 1 (below) details the coordinates of the sampling locations of the sediment contaminant analysis; in order to compare how they represent the nearer shore section of the cable corridor.

8.15. It is apparent from this table that there is some likely overlap between the benthic survey locations and the sediment contaminant locations. However, it is not clear which benthic survey stations were tested for sediment contaminant analysis. The MMO Results template submitted by the applicant lists sample names by a number, though it is unclear whether these relate to the benthic survey samples as the references of the benthic sample locations are alphanumeric i.e. VC001. The applicant should clarify which benthic survey locations were tested for contaminant analysis. Once this has been clarified, we are able to determine the ‘cutting point’ of where contaminant analysis stops, and exemption due to particle size begins.

Table 1. Sample contaminant analysis locations by coordinates (decimal degrees)

Latitude	Longitude
50.702650	0.886800
50.716800	0.875683
50.728900	0.865217
50.713417	0.915350
50.722550	0.945017
50.728517	0.974517
50.738617	1.016350
50.754200	1.030583
50.769717	1.033950
50.777617	1.035317

8.16. The applicant states the following (7.5.3): “*The majority of the Poly-Chlorinated Biphenyls (‘PCB’) were below the limit of detection and none of the stations exceeded Cefas AL 1 for total PCBs*”. It is unclear how the applicant has determined this statement, as the dataset they provide shows that only seven PCBs were tested for. The AL1 for total PCBs is based on the sum total of all 25 identified PCBs, and, as such, the applicant’s statement cannot be confirmed. It is likely that the applicant is referring to the AL1 for the ICES seven identified PCBs of concern, though this should be clarified. In 7.6.3.18, the applicant also claims that “*No contaminants in any samples exceeded Cefas AL 2*”. This is also not possible to confirm. Clarification should also be sought as to why only a select number of PCB congeners were tested for.

8.17. No mitigation measures are proposed but this is considered acceptable at this time. However, should dredging not commence within 3 years from the date of sampling, additional contaminant analysis may be required.

8.18. Should a disposal site be designated, the MMO recommend that conditions are included in the DML which adequately reflect the OSPAR disposal of dredged sediment requirements. Specifically:

- Sediment must only be disposed of at Disposal Site X (Disposal site code = AAXXX) [please note that “X” and “AAXXX” are exemplary only].

8.19. The MMO also recommend that a condition concerning OSPAR returns data submission is included.

- 8.20. The applicant has not provided necessary information to designate the new sites. The applicant must provide either a shapefile or confirmed set of coordinates, particularly given that the applicant intends to both use jetting – displaced sediment from which will likely remain in the local environment, and trailer suction hopper (TSHD) – which is likely to require transport to a separate disposal site. As such, the MMO requests clarification from the applicant in the form of proposed shapefiles detailing their preferred location/s. The applicant does provide map figures, however, disposal site designation requires data to be provided in an electronic format (i.e. a KML or CSV file) to the MMO and the application consented by the SoS before Cefas would designate the site.
- 8.21. The MMO also request clarification as per previous comments relating to the proportion of disposal material that will be considered “backfill”, i.e. material that will be removed to allow cable placement and then re-deposited atop the cable for burial, as, to our assessment of the documents proposed, it is unclear to what extent this will be the case. It is likely that a designated disposal site will not be required for material considered backfill.
- 8.22. If material is however not considered backfill, then Cefas is hesitant to designate the area proposed by the applicant as a disposal site, i.e. the near entirety of the cable corridor beyond the 3km WFD limit, largely as material will remain within the local environment. There is a concern that subsurface material (i.e. sediment dredged from depths below 1m) will be mixed with upper layers of sediment and then deposited on the sea surface, however, the MMO consider this risk to fall under the consideration for “remobilisation of contaminated sediments”, which the applicant has fully considered.
- 8.23. Previous Cefas advice (Andrew Griffith, 10th May 2019) notes that material from the HDD landfall station may require a separately designated disposal to sediment from the cable corridor. From the documents provided for this consultation, it is unclear why this is the case. Should the reasoning be that material is likely to be of a finer composition, then it may be appropriate for the applicant to use an existing disposal site. Further, it is unclear whether this site will be dredged by jetting or TSHD. The applicant needs to provide further clarification.
- 8.24. There are a number of points requiring further clarification, particularly the specifics of what proportion of material dredged will be used as backfill, before an appropriate assessment of disposal sites can be conducted. At this point, it is unclear whether a new disposal site needs to be designated. There were inaccuracies in the interpretation of the sediment contaminant data relating to PCBs and the MMO request that the applicant rectifies these points.
- 8.25. **Coastal Processes**
- 8.26. The existing environment has been characterised appropriately within Chapter 6 Physical Processes. Data Sources are summarised in Section 6.5.2, with “*studies that are particularly relevant and form the focus of the desk-based assessment*” presented in Tables 6.3. The existing environment is summarised in Section 6.5. The MMO consider this to be an appropriate characterisation of the baseline environment.

- 8.27. In addition, a coupled hydrodynamic and wave model was developed to support the assessment (The “AQUIND Interconnector Modelling Suite” (AIMS model)). The development of the AIMS, including a description of model setup, validation and calibration, is presented in Appendix 6.2.
- 8.28. PEIR consultation responses are presented in Table 2 of Appendix 6.1. The MMO are satisfied that issues previously raised during the PEIR process have been addressed in the documents reviewed.
- 8.29. The potential impacts from construction, operation (including repair and maintenance) and decommissioning of the proposed development identified for assessment are:
- Physical disturbance to seabed geology and morphology through alteration of bedform features and impacts on local flow patterns;
 - Impacts to local sediment regimes through impacts on local flow patterns and local increases in SSC; and
 - Impacts upon coastal and marine processes and the sediment transport regime.
- 8.30. Based on the worst-case design envelope of the proposed development presented in Table 6.15, these impacts broadly fall under the following subheadings which have been used for the impact assessment:
- Increase in suspended sediment concentrations;
 - Morphological change and alteration of bedforms; and
 - Obstruction to flow, scour around structures and impact on nearfield flow.
- 8.31. Based on existing data, it is anticipated that during operation, an indicative worst-case failure rate of the marine cables is one repair every 10 – 12 years. During potential repair works, it is anticipated that the relevant section of the marine cable will be recovered using methods similar to those employed during construction, whilst any potential repair work would likely be of shorter duration and smaller in extent than during the construction stage. The options for decommissioning would include consideration of leaving the marine cable *in situ*, removal of the entire marine cable or removal of sections of the marine cable. Similarly, the corresponding potential impacts resulting from decommissioning are considered to be equivalent to or lesser in nature than those considered for construction activities. Consequently, the potential impacts arising during operation and maintenance (including repair and replacement of the marine cable) and decommissioning are considered, in the worst case, to be equivalent or potentially lower than those associated with construction.
- 8.32. The MMO agree with this approach and the potential impacts on coastal to physical processes identified and assessed.
- 8.33. Potential impacts are described and assessed in Section 6.6.4. Potential impacts on coastal and physical processes during construction were assessed as:
- *Increase in suspended sediment concentrations:*
Overall, potential impacts on coastal processes and physical process due to increases in SSC are considered to be of **minor to moderate** significance, due to

the dynamic nature of the nearshore and coastal environment and the likely dispersal of suspended sediments in the offshore region.

- Morphological change and alteration of bedforms:
Overall, potential impacts on coastal processes and physical process due to bedform features, seabed sediments and local morphology resulting from morphological change and alteration of bedforms is considered to be **negligible** as all potential impacts are local to seabed features and the marine cable corridor.
- Obstruction to flow, scour around structures and impact on nearfield flow:
Overall, potential impacts on flow and scour resulting from obstruction to flow, scour around structures and impact on nearfield flow is considered to be of **minor to moderate** significance as all potential impacts are local to seabed features and the marine cable corridor.

8.34. A summary of significant inter-project impacts (i.e. interaction and combination of the individual impacts identified for each topic specific EIA) is provided in Chapter 29, where the identified topic-specific impacts on receptors can be more readily be drawn together to identify all likely significant impacts on a particular receptor. In addition, potential cumulative impacts associated with other planned or consented projects in the wider vicinity of the proposed development are presented in Section 6.7 and summarised in Table 6.19. A full list of projects within the wider vicinity that have been considered as having the potential to give rise to a cumulative impact on the physical environment are presented in Appendix 6.4. The residual cumulative impact is assessed as **not significant**. The MMO agree with this conclusion.

8.35. No specific “*Operation and Maintenance Plan*” is presented within the documents reviewed, however “*Marine Cable Operation and Maintenance*” is briefly described in Section 3.5.9. Although the marine cables have been designed so that routine maintenance is not required during the proposed developments operational lifetime, the Applicant accepts that unplanned repair works may be required (worst-case failure rate of the marine cables is one repair every 10 – 12 years based on available data), due to the following events:

- Mechanical/electrical failure of components within the cables;
- Exposure of, or damage to, the cables as a result of fishing activities and/or vessel anchoring; and
- Exposure of cables due to changes in seabed morphology (e.g. areas of free spanning) or changes in hydrodynamics (e.g. increase in bed erosion due to dredging works in the vicinity of the marine cables).

8.36. Overall, as the methods employed during operation and maintenance (including repair and replacement of the marine cable) would be similar to those employed during construction, and, as activities are likely to have a lesser spatial and temporal impact in comparison with construction activities, the potential impacts arising during operation and maintenance are considered to be equivalent or potentially lower than those associated with construction and are therefore adequately covered by the ES.

8.37. It is noted that plastic fronded mattresses are being considered as one potential non-burial cable protection method (Table 3.3). The MMO's preference is for the avoidance of the introduction of plastic into the marine environment as far as possible.

8.38. The Applicant states that *"to dredge the HDD pits (which are located at inshore shallow water sites) a backhoe dredger is likely (although a MFE [Mass Flow Excavator] may potentially be used) to be used in combination with a barge to transport the material to an area suitable for disposal"*. It is recommended that the use of MFE is minimised as far as practical, especially within the nearshore zone, in order to reduce impacts associated with increased suspended sediment concentrations.

8.39. Based on the Rochdale Envelope employed in the assessment and the results of the modelling studies presented in the ES, the MMO considers the potential impacts of the proposed development on coastal and physical processes are not anticipated to be significant.

8.40. **Fish Biology and Fisheries**

8.41. The characterisation of the existing environment is generally appropriate and adequate to inform the assessment of impacts for most species. However, there are inaccuracies in some sections of the ES, and there is a lack of data to inform the habitat assessments for sandeel and herring. These discrepancies affect the overall confidence that can be made in the assessment conclusions. The MMO have provided further comments regarding the assessment of impacts for these species in the sections below.

8.42. There are some inaccuracies and contradictions in the description of herring spawning habitat which reduce the confidence in the conclusions for the assessment of impacts to herring.

8.43. Table 9.4 of Chapter 9 Fish and Shellfish states that herring spawning grounds are located 5.8 km from the cable corridor. However, as can be seen in Figure 9.3, the cable corridor passes through the Downs herring spawning ground depicted by Coull et al. (1998). Later, in sections 9.6.4.16 and 9.6.4.18, it is also stated that the marine cable corridor *"does not pass through the herring spawning areas identified by Coull et al. (1998) and Ellis et al. (2012)"* which again is incorrect.

8.44. The report then recognises that the cable corridor passes through areas where high herring larval densities have been found:

- i. 9.5.3.19 *"it can be clearly seen that the UK Marine Cable Corridor passes through areas of 'low' herring larvae density (within 12nmi limit), 'low to medium' (beyond 12 nmi), as well as, a small area of 'high' herring larvae density (near the European Economic Zone (EEZ))."*;
- ii. 9.5.3.22 *"None the less the 10-year data set does support the information provided in the South Marine Plan and clearly show that the Marine Cable Corridor passes through areas where high herring larvae densities occur in some years."*

- 8.45. A contradictory statement is also made regarding the approach to assessing impacted areas:
- i. In Section 9.6.4.18 it states that; *“In order to assess the potential impact of temporary habitat disturbance/loss on herring spawning, it is often tempting to assess the size of the impacted area’ against the total spawning habitat, however, this is not possible for several reasons”*;
 - ii. However, in Section 9.6.4.20 the report then contradicts this statement by attempting to assess the size of impacted area; *“The area of ‘low’ spawning potential within the South Marine Plan occupies an area of 2335 km² , of this the worst-case prediction is a habitat disturbance to 2.24 km² (0.1 % of this area). Of the low to medium defined area (totally 4443.7 km²) only a worse case of 0.44 km² of habitat disturbance may occur (0.01 % of the area). Of the area defined as ‘high’ spawning potential (area of 480.2 km²) a maximum 1.26 km² may be disturbed (0.06 % of this area).”*
- 8.46. Whilst the report recognises that the marine cable corridor passes through areas of high herring larval densities and that the substrate in these areas is suitable for herring spawning, the conclusions for potential impacts to herring made in Table 9.13 for temporary habitat disturbance/loss, suspended sediment and smothering, entrainment/removal of eggs and larvae are all assessed as ‘Not significant’. The justification for this appears to be based on the quantification of the total area of spawning habitat affected, an approach which is not supported by Cefas fisheries advisors (point 16 of advice dated 9th April 2019) and has been recognised by the applicant in Section 9.6.4.18.
- 8.47. The International Herring Larvae Surveys (IHLS) maps and herring spawning potential map presented in figures 9.6 are taken from the South Marine Plan (2018). This provides a broad overview for the whole south coast region but are not of a suitable scale to inform management and mitigation for specific areas. The South Marine Plans have not been informed by site-specific Particle Size Analysis (PSA) data but by broadscale British Geological Survey (BGS) data.
- 8.48. Coverage of PSA data along the cable corridor is sparse and does not extend into the secondary impact zone. Nonetheless, the data show that in the areas where high larval densities are known to occur, the seabed substrate consists of sandy gravel, making it the ‘preferred’ sediment type on which herring may spawn. The PSA data used to inform the characterisation of sandeel and herring spawning habitats are limited and no samples were collected beyond the cable corridor, i.e. in the secondary impact zone influenced by sediment plumes.
- 8.49. As noted in Table 9.11, seasonal restrictions on marine aggregate extraction in the vicinity of the marine cable corridor have been applied to the marine licences for Areas 478, 473, 474, 475 and 461, specifically to mitigate against impacts to herring spawning between months of November to February (January to February for Area 478). Please note, the MMO believe that the information presented in Table 9.11 regarding the seasonal restriction at Area 478 is incorrect ‘No dredging Jan-Feb inclusive’. Condition 5.2.34 of the Marine Licence for Area 478 sets out the monitoring

requirements at Area 478, for benthic ecology and herring spawning potential. In particular:

- Condition 5.2.5 refers to the restriction of dredging activity between 1st December to 31st January to the areas dredged over the preceding 9 months, limiting the number of cargoes to 10 per month equating to no more than 50,000 tonnes per month for this period.
- Condition 5.2.11 refers to an on-board screening ban from the 1st January to the 31st February in order to protect spawning herring during this period.

- 8.50. As seabed preparation and cable installation activities result in comparable impacts as those arising from aggregate extraction (i.e. temporary habitat disturbance/loss, suspended sediment and smothering, entrainment/removal of eggs and larvae), the same mitigation for herring is appropriate for both activities. Accordingly, as the assessment is currently presented, the MMO would recommend that seasonal mitigation is required to protect spawning herring from the impacts of seabed preparation and cable laying activities for those areas that have been shown to have suitable sediments for spawning herring and high larval densities. However, the MMO recognise that it would be impractical to apply such a mitigation measure to the DML unless it can be applied to the specific area of concern (rather than the whole project area), i.e. areas of the project where high larval densities and suitable sediments are found.
- 8.51. In its current form, the assessment of impacts to herring and their spawning grounds is not robust enough to inform whether site-specific mitigation measures are required. Whilst the relevant information has been included, the applicant has presented this as a suite of maps including; spawning and nursery ground maps, PSA data and IHLS data. Thus, as the individual data sets have not been provided together in one map, it is difficult to interrogate and interpret to ascertain the level of potential risk to herring.
- 8.52. Furthermore, improved refined data is required to identify at a site-specific level the potential risk to herring spawning from the proposed works. As the data are presented currently it cannot be determined whether mitigation is appropriate, where the highest levels of herring larval density are located in relation to the cable route and other activities, and how and if mitigation could be applied spatially.
- 8.53. To help better inform the assessment, it is recommended that the applicant provides if possible, a layered pdf which includes the following data layers that can be turned on and off:
- a) ICES rectangles labelled with designation (including subdivisions e.g. 1:54 cells as depicted in RPS, 2013)
 - b) IHLS larval density data <11mm (newly hatched yolk sac larvae) for the 10-year data set in m² (please see recommendations for presentation of IHLS data below).
 - c) Cable corridor and EEZ median line
 - d) Historical herring spawning ground data (coull et al., 1998)
 - e) PSA data categorised according to Folk (1954) and MarineSpace (2013) classification categories

- f) Aggregate licence Areas 478, 473, 474, 475 and 461 (to ensure any mitigation measures that may be recommended subsequently are consistent with activities in the vicinity of the interconnector). Also include French extraction sites Saint Nicolas West and Saint Nicolas East for completeness

- 8.54. Additionally, it would also be beneficial if the Applicant was able to provide more detail on the proposed method of cable installation. Information such as whether different methods may be used for different sections of the cable route, if rock armouring (or any cable protection) would potentially be required in herring spawning areas, where cable joints will be located and how many cable joints might be anticipated i.e. if there is an expectation that the cable will be laid in sections and how long those sections are likely to be. This would provide a better understanding of potential impacts in herring spawning areas and would enable Cefas advisors to ascertain and determine the level potential risk to herring spawning. In addition, this additional information would also assist on ascertaining whether, and to what extent, mitigation would be required including whether any recommended restrictions should be to specific areas of the cable e.g. from one cable joint to another.
- 8.55. Furthermore, it would also be useful to understand from the Applicant that, if following the provision of further information requested above, mitigation is recommended, which type of mitigation would be more suitable and feasible for the project, i.e. is the applicant able to accommodate not undertaking cable preparation and installation activities altogether in this area, during the months of November to February inclusive or would a spatially applied mitigation be a more workable solution.
- 8.56. Other clarifications and expectations previously raised on this matter at PEIR stage have been suitably addressed and limitations in the use of data sources have been recognised.

Recommendations for the presentation of IHLS data

- 8.57. Southern North Sea and eastern English Channel (SNS) IHLS surveys are conducted as three separate sampling events survey; one in the 3rd quarter of each year undertaken by the Netherlands between 16-31 December, and two in the 1st quarter of each year; between 1-15 January undertaken by Germany, and between 16-31 January undertaken by the Netherlands.
- 8.58. It is understood that Downs herring spawning activity in northern parts of the spawning grounds occurs later in the season compared to those grounds further south in the English Channel, please see Annex 1 for examples of this taken from ICES (2014 and 2016) which demonstrate the variations in larval abundance according to the periods in which surveys were carried out.
- 8.59. Considering this, the MMO recommend that 10 years of IHLS data should be presented by consolidating the three IHLS survey periods (i.e. 16-31st December 2008-2018, 1-15th January 2008-2018 and 16-31st January 2008-2018).

- 8.60. Presenting the data in separate temporal periods will enable identification of when peak larval densities typically occur in the vicinity of the Project site and may also assist in refining the duration of any recommended seasonal restriction.
- 8.61. Species of concern including those of ecological and conservation importance have been correctly identified, and species-specific assessments have been undertaken where appropriate.
- 8.62. For the reasons outlined above, the MMO are not content that the mitigation proposed will be adequate to mitigate impacts to herring as the assessment is not robust in its current form. Further interrogation of data sources is needed, and a discussion with the applicant concerning the timing and location of specific sections of the cable laying activities is needed.
- 8.63. The industry standard embedded mitigation measures for the project, described in Section 9.6.2, are appropriate;
- The use of cable burial techniques which minimise the area of seabed affected.
 - Disposal of dredged material is restricted to beyond KP21 of the Marine Cable Corridor.
 - Adoption of plans and procedures for marine pollution prevention, risk reduction and waste management to eliminate and mitigate potential pollution risk. These procedures are outlined in the Marine Outline CEMP.
 - To reduce any potential effect of electro-magnetic fields (EMF) on sensitive species, cables will be buried between 1 to 3 m below the seabed, with a minimum cable target depth of 1m, Minimising the use of non-burial cable protection to reduce the effect of permanent habitat loss
- 8.64. However, as per the comments above, it is recommended that additional information is provided given that the assessment is currently not sufficiently robust. As the level of risk to herring spawning is uncertain and cannot be fully determined, precautionary approach should be adopted. Consequently, mitigation to reduce the likelihood of impacts to spawning herring is required in the form of a seasonal restriction on seabed preparation and cable laying activities between 1st November and 31st January. The additional information outlined in 8.62 will allow Cefas advisors to ascertain if, and to what extent, site-specific mitigation is required.
- 8.65. The ES has addressed most of the points raised at the PEIR stage in relation to cumulative effects and has discussed the relevant impacts including inter-project, temporary habitat disturbance/loss, temporary increase in suspended sediment and smothering, noise and vibration, EMF, permanent habitat loss for benthic dwelling and spawning species including sandeels, black sea bream and elasmobranchs. The species-specific cumulative assessment for herring is welcomed, though it is noted that all potential effects have been assessed as not significant. Confidence in this conclusion can be determined once the additional information relating to the herring assessment is provided.

- 8.66. The activities within the operation and maintenance plan are adequately covered within the ES chapters and the impacts of the activities (disturbance to and loss of habitat, EMF and permanent habitat loss) have been assessed appropriately.
- 8.67. **Shellfish**
- 8.68. Relevant data sources have been used such as the landings data from the MMO database. ICES survey data has also been used but there is no reference as to which surveys and to which gear types this data refer. This needs to be clarified.
- 8.69. The commercial fishing environment has been characterised appropriately. The applicant has clearly shown the high value of commercial shell fishing to the area impacted by the proposal as well as the seasonal aspects of the fishery.
- 8.70. Only one issue was raised during the PEIR process relating to shellfish and shellfish commercial fisheries. *“Consideration should be made in the ES for the temporary or permanent displacement of fishing effort (e.g. scallop dredging) which is currently a contentious issue within the Channel region in terms of access to alternative grounds.”* This issue has been addressed for the English side in the ES (see: document ES – Vol 1 – Chapter 12 Commercial Fisheries, Paragraph 12.5.3.19 & 12.5.3.19). The contentious issue (referenced above) within the Channel is a disagreement over access to highly productive scallop ground in French waters. Since this concern was raised, the scallop fishing industries in the UK and France have resolved the disagreement therefore it is no longer considered an area for concern. There are therefore no outstanding issues from the PEIR process.
- 8.71. The applicant has correctly identified the species present at the proposed site as well as the potential impacts faced by these species.
- 8.72. The MMO are satisfied with the conclusions reached regarding the significance of these impacts on potential shellfish receptors. None of the impacts were found to cause significant negative impacts to shellfish species, as such, there are no proposed specific mitigation measures required relating to shellfish species. Embedded mitigation is the only measure proposed in relation to shellfish species. This is adequate given that there are no negative significant impacts anticipated from the works.
- 8.73. The applicant has correctly identified all potential impacts which may affect commercial shellfishes.
- 8.74. The MMO do not agree with some of the levels of impact significance being assigned to shell fishing activities. Impacts created from the proposed works are likely to have a greater than assigned impact on both potting boats (static gear) and those working inshore. However, the MMO do believe that the mitigation measures suggested are adequate and do demonstrate a willingness to communicate with commercial shell fishers through the proposed Inshore Fisheries Working Group.
- 8.75. The applicant has fully listed projects taking place within the wider vicinity of the proposed project. Each potential impact identified earlier is reassessed in line with any cumulative impact that may be caused by interactions with other projects.

- 8.76. All activities with the operation and maintenance plan are adequately covered with in the ES chapters (Chapter 9 Fish and Shellfish & Chapter 12 Commercial Fisheries).
- 8.77. In document 6.1.9 ES – Vol 1 – Chapter 9 Fish and Shellfish under section 9.5.3.4, the wording states that there are 24 shellfish species identified in 30E8 & 30E9 but 28 shellfish species identified in 30E8 alone. This should be clarified.
- 8.78. In document 6.1.9 ES – Vol 1 – Chapter 9 Fish and Shellfish, Table 9.3 could be presented more clearly. The MMO would suggest grouping species within the table for example: Shellfish, Pelagic Fish, Demersal Fish, Elasmobranch's etc.
- 8.79. In document 6.1.9 ES – Vol 1 – Chapter 9 Fish and Shellfish, Table 9.4 has unclear presentation. Common cuttlefish is one category and Cuttlefish & Bobtail squid is a separate one. The MMO consider that it would be best to label one category as Cuttlefish and the other as Bobtail squid. Cuttlefish and Bobtail squid are not biologically similar or of similar value therefore should not be considered together. Cuttlefish is not speciated for fish markets and therefore does not need to be for this graphic (Table 9.4).
- 8.80. In document 6.1.9 ES – Vol 1 – Chapter 9 Fish and Shellfish 9.5.4.9. has a minor presentational error – the MMO would advise changing 'commercial fish' to 'commercial shellfish' to better reflect the topic being discussed.
- 8.81. In document 6.1.9 ES – Vol 1 – Chapter 9 Fish and Shellfish, point 9.6.4.9 states that king scallop are capable of evading predators by swimming and relates this to avoidance of dredging gear. It is factually correct that king scallop can avoid prey by moving, however it is important to highlight that they can only move very short (1-2m) distances before exhaustion. Therefore, the ability of the king scallops to move should not be used as justification for their ability to manoeuvre away from oncoming dredging equipment.
- 8.82. **Underwater Noise**
- 8.83. The MMO defer to Natural England for comments on whether the existing environment for marine mammals has been characterised appropriately and whether relevance data sources have been used.
- 8.84. During the MMO's review of the scoping report, it was noted the potential impacts of increased anthropogenic noise from geophysical survey and positioning equipment which emits sound e.g. sonars, sub-bottom profilers, and potential UXO removal was to be scoped in for assessment.
- 8.85. However, increased anthropogenic noise from geotechnical investigations, seabed preparation, route clearance, cable lay and burial was proposed to be scoped out of the ES, on the basis that the maximum impact ranges were likely to be small (< 30 m for drilling, suction dredging and cable laying; ≤140 m for trenching; <100 m for rock placement). The impacts of increased vessel noise were also proposed to be scoped out for similar reasons and that sound from vessels was unlikely to significantly add to existing noise levels from vessels in the Channel.

8.86. It was recommended that the potential impacts of increased anthropogenic noise from geotechnical investigations, seabed preparation, route clearance, cable lay and burial on marine mammals were scoped in for further assessment. It was acknowledged that whilst the risk of significant impact on marine mammals is likely to be low, the anthropogenic noise resulting from such activities should be given consideration. Chapter 10 Marine Mammals and Basking Sharks states the following (para 10.3.1.1):

“As detailed within Chapter 5 Consultation, a Scoping Opinion was received by the Applicant from the Planning Inspectorate (‘PINS’) on 7 December 2018. The Scoping Opinion comments from PINS and key consultees in relation to marine mammals and how they were addressed is set out in Table 1 of Appendix 10.1 (Marine Mammals and Basking Sharks Consultation Responses) of the ES Volume 3 (document reference 6.3.10.1). Key items that were addressed included:

- *PINS commented that the justification provided in the Scoping Opinion regarding scoping out increased vessel noise, collision with vessels, anthropogenic noise from geotechnical surveys, HDD works, seabed preparation and cable installation activities, and Electromagnetic Fields (‘EMF’) was insufficient. PINS requested that an assessment should be undertaken, where significant effects are likely. Further information relating to these potential impacts and justification for scoping them out was provided in Preliminary Environmental Information Report (‘PEIR’) Chapter 10. Confirmation that this information/justification was considered to be sufficient was received during post-PEIR consultation (see Section 10.3.4 and the Consultation Report (document reference: 5.1)).”*

8.87. The MMO defer to Natural England for comments on whether the applicant has correctly identified the marine mammal species of concern. The following element (impacts) have been scoped into the assessment (further details are provided in Table 10.3):

- Increased anthropogenic noise from geophysical survey and positioning equipment which emits sound (relevant to the construction and operational phases);
- Associated HDD work: Increased anthropogenic noise from potential vibro-hammering at the marine HDD location (KP 1.0 – KP 1.6) if the HDD direction is offshore to onshore (relevant to the construction phase only); and
- Associated HDD work: Increased anthropogenic noise from potential sheet piling at three onshore HDD entry point locations (including Landfall) located around Langstone Harbour (includes the scenario if the Landfall HDD direction is onshore to offshore) (relevant to the construction phase only).

8.88. Of relevance, section 10.3.5.2 states that *“these potential impacts, which all relate to increased anthropogenic noise, are only relevant to marine mammals and have not been assessed for basking sharks or marine turtles because they are not sensitive to underwater noise changes (e.g. Wilson and Wilding, 2017). Therefore, it is considered that there is no potential for significant effects on these species (basking sharks and marine turtles)”*. It should be noted that although the sensitivity to

underwater noise changes is assessed as ‘*not sensitive*’ for basking sharks on the MarLin website, the confidence in this assessment is ‘*Low*’ and that there is little available information on sound detection in this species (*Cetorhinus maximus*).

- 8.89. No mitigation is proposed for marine mammals. Para 10.8.1.1 of Chapter 10 states: “*As no significant effects have been identified, no additional mitigation measures are required or proposed in relation to the effect on marine mammals, basking sharks and other marine megafauna*”. However, for any UXO detonations, mitigation in the form of bubble curtains and/or Marine Mammal Observers are likely to be required.
- 8.90. Regarding cumulative effects, 18 projects were considered to have the potential for temporal overlap with the Proposed Development. These included the AQUIND Interconnector in French EEZ and French Territorial Waters, the IFA2 Interconnector (operational phase surveys), eight aggregate dredging projects, two dredging and disposal projects, and six coastal projects. However, according to para 10.7.1.9, “*the scale and nature of these 18 projects meant that any potential cumulative effects were unlikely to be significant (i.e. no potential for onset of auditory injury, and any disturbance is predicted to be temporary). Therefore, no projects were progressed to a detailed cumulative effects assessment (i.e. Stages 3 and 4) for marine mammals*”.
- 8.91. The MMO is of the opinion that the underwater noise assessment provided in Chapter 10 is vague in places, and the evidence to support the conclusions is lacking. For example, Table 10.4 provides a summary of typical SPLs (sound pressure levels) and frequency ranges of typical types of geophysical survey and positioning equipment likely used for the Proposed Development. The report states that “*this information has been taken from typical equipment specification sheets*”, however references should be provided here.
- 8.92. Further, the report states that these source levels are “*generally given as SPLs*” but what does SPL mean – is this rms or peak? The metrics here should be clarified.
- 8.93. Of relevance, Para 10.6.4.19 states that complete installation of the trestles and casings will take ten 12-hour shifts per duct (this includes vessel repositioning, setting up the trestles and driving them into the seabed and then setting up the casings on the trestles, welding the casings together and then driving them into the seabed). There will be long breaks (9-10 weeks) between the vibro-hammering at each duct.
- 8.94. In terms of the assessment of potential vibro-hammering at the marine HDD location, it is not appropriate to simply convert noise levels in air to noise levels in water, see para 10.6.4.21: “*Noise levels in air do not equal noise levels in water. This is due to differences in reference standards (dB re 1 μ Pa in water versus dB re 20 μ Pa in air) and acoustic impedance (the characteristic impedance of water is about 3600 times that of air). However, conversions of dB from air to water can be made and an SPL of 90 dB in air is considered to be equivalent to an SPL of 152 dB re 1 μ Pa in water*”. Again, no metrics are stipulated.
- 8.95. Para 10.6.4.22 further states that “*given the estimated sound levels, there is no potential for lethal effects (threshold is levels exceeding 240 dB re 1 μ Pa; Parvin et al., 2007), physical injury (threshold is levels exceeding 220 dB re 1 μ Pa; Parvin et al., 2007) or auditory injury (see Table 10.8 below) from the potential vibro-*

hammering even at source. These effects (lethal effects, physical injury and auditory injury) are therefore considered to be not significant". Table 10.8 shows the NOAA (2018) marine mammal noise exposure criteria for non-impulsive sources (which is appropriate). However, the PTS onset thresholds shown in the table are based on the cumulative sound exposure level thresholds (SEL_{cum}) over a 24-hour period (again the metrics are not stated in the report). Thus, it does not appear as though the cumulative sound exposure has been appropriately considered.

9. Contact details

9.1. The MMO would prefer electronic communication and requests that this is issued to the following contacts:

9.2. First contact:

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Marine Management Organisation

19 February 2020