Cyfoeth Naturiol Cymru
Natural Resources Wales

Ein cyf/Our ref: SC1812

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4th December 2018

Dear Mr Russell,

SCREENING AND SCOPING OPINION UNDER THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2007 (as amended)

WAVE DRAGON WALES

I am writing further to your request for a screening and scoping opinion, dated 31st August 2018, made in accordance with The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) ("The Regulations").

The purpose of the Environmental Impact Assessment (EIA) screening procedure is to determine whether the proposed works require an Environmental Impact Assessment and submission of an Environmental Statement (ES). The purpose of the scoping procedure is to determine what information should be provided in the ES.

In reaching our Screening Opinion we have considered the proposed works against Schedule A1 and A2 of the above regulations. In reaching our scoping opinion we have had regard to the information provided in the Wave Dragon Scoping Report V2, dated 31st August 2018, and considered the requirements of Schedule 3 of the Marine Works Regulations. We have also consulted with the bodies that we consider have an interest in the project by reason of their environmental responsibilities, or local or regional competences, as required by the above regulations, and had regard to their comments.

Screening Opinion

It is our opinion that the works fall within the categories of project listed within Schedule A2, Paragraph 20, “Installations for hydroelectric energy production” of the above regulations, and therefore must be considered in terms of its size, nature and location having regard to the relevant criteria listed in Schedule 1 of the above regulations.

We have carefully considered the views of the consultation bodies alongside the criteria as set out in Schedule 1 of the regulations, and have determined, based on the information provided; that the project has the potential to have a significant effect on the environment and therefore a statutory Environmental Impact Assessment is required.

We have come to this conclusion on the basis of the likely significant impacts of the project, specifically with regard to:

The potential significant effects of development under the project in relation to the matters set out in paragraphs 1 and 2, having regard in particular to the impact the proposed devices may have on the safety of navigation, the location of the development being with the West Wales Marine candidate SAC and in close proximity and with the potential to affect several other designated sites and European Protected Species.

Scoping Opinion

This letter sets out the additional information that we consider necessary to be included and/or assessed in the ES for this Project.

Please note our scoping opinion is based on the information available to us at this time. The information provided is not a definitive list of the ES / EIA requirements and further information may be required following an application for this project, to ensure a full assessment is carried out.

This Screening and Scoping Opinion will be provided to all those bodies that were consulted and will be publicised on our website and on our Public Register.

The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended)

Scoping Opinion (SC1812)

Summary of the proposal

The full Wave Dragon project will have a total capacity of up to 28MW generating capacity through the deployment of seven 4MW-scale Wave Dragon wave energy converter devices. This scoping opinion is for the test deployment for a period of up to 40 months, of a single unit only with a generating capacity of 3 MW. The units have been referred to as Wave Dragons by the developer in the Scoping Report and will be similarly referred to in this Opinion.

The project includes the following components:

- The main super-structure, which is 15 meters in vertical height, with a width of 107 meters and a depth of 75 meters. A variable draft which will always be less than 13 meters. The total weight is 22,000 metric tons. The structure is built from steel and reinforced concrete.
- Two 107 meter long wings extending the total width of the device to 230 meters.
- The Super Structure will house no more than 12 turbine-generators of approximately 250 kW each
- The 250 kW generators on board shall have a voltage between 350 V and 690 V and can either be of induction asynchronous type or permanent magnet synchronous type. (Grid connection transformers shall not be installed on board in this phase of the project.)
- The device will house a control room, which will house the control equipment and auxiliary systems as well as working areas for personnel. The device is fully automated, but will be capable of housing an onboard crew.
- The Central Mooring Buoy will have a volume less than 100 cubic meters and will be anchored to the seabed by up to 10 anchors. (likely to be between 5 and 8). The Mooring Buoy and the anchors will be connected by standard mooring chains in combination with fibre ropes.
- The Mooring anchors will be of a standard Steel anchor type.
- Four Navigational Buoys will be deployed.
- A wave-rider buoy may also be deployed to help monitor wave heights.
- An umbilical connection to the sea bed may be installed and connected to the Wave Dragon device to test the technology. This will not be grid connected.

Location

The proposed site is located approximately 25 kilometers south west of the mouth of the Cleddau Estuary. Figure 1 below (taken from the scoping report) shows the rectangular area in red as the proposed location.

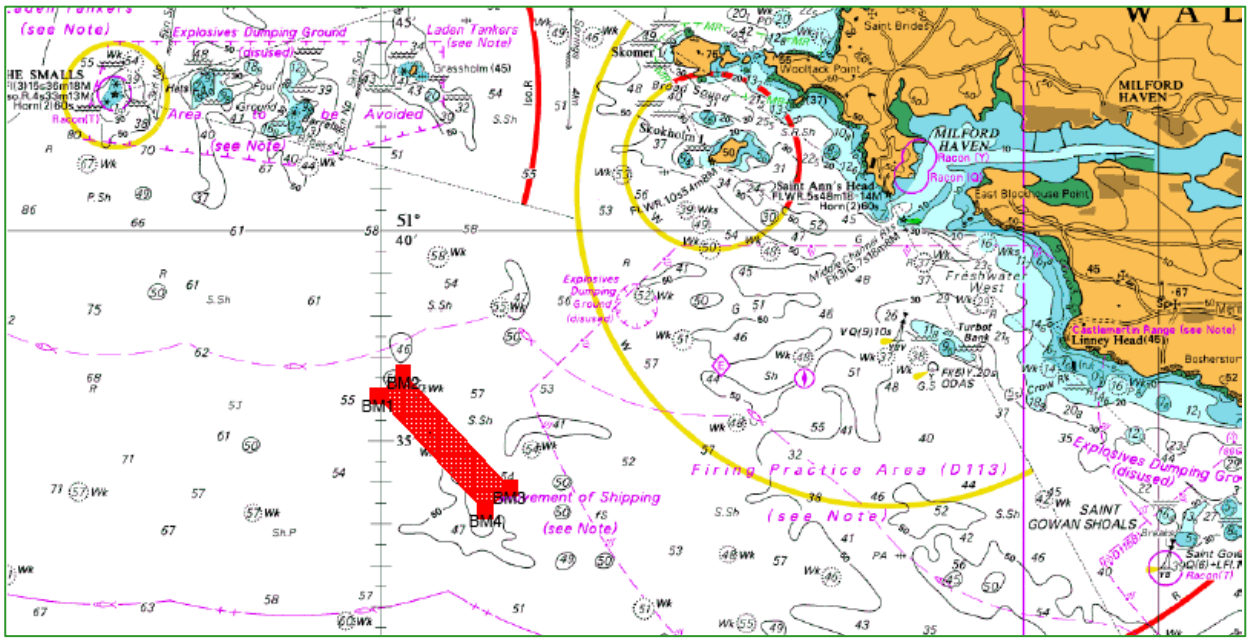

Figure 1 Proposed location

Consultation Responses Received

In considering the scoping report, NRW Permitting Service (PS) consulted with various consultation bodies. The consultation bodies that responded are listed below:

- Natural Resources Wales Technical Experts (NRW TE)
- Maritime and Coastguard Agency (MCA)
- Royal Yachting Association (RYA)
- Trinity House Lighthouse Service (THLS)
- Ministry of Defence
- Chamber of Shipping
- Pembrokeshire County Council
- Welsh Government
- Royal Society of the Protection of Birds (RSPB)

1. General comments

1.1. Marine and coastal guidance produced by NRW that may provide useful information to help with your project is available here:https://naturalresources.wales/guidance-and-advice/business-sectors/marine/marine-and-coastal-guidance/?lang=en

1.2. The ES submitted must demonstrate consideration of the points raised in this scoping opinion. It is recommended that a table is provided in the ES summarising the scoping opinion comments and how they are addressed in the ES.

1.3. The need for the project is not explained. The ES Must include details about why the project is being undertaken, for example, if the the project is derived from Government Policy, nor is there an explanation of any alternatives considered. This is a requirement set out in Schedule 3 and regulation 12 of the Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2017, which includes the following aspects that are not in the scoping report:

- a description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale).
- The impact of the project on climate and the vulnerability of the project to climate change
- Transboundary effects
- Vulnerability of the project to risks or major accidents or disasters

2. Executive Summary

2.1. A non-technical summary must be provided with the ES.

3. Introduction

3.1. NRW PS note that Wave Dragons are described as floating devices more akin to a vessel than to any other renewable technology. NRW PS do not consider Wave Dragons as vessels and note that the Wave Dragons are not self propelled.

3.2. It is noted that the scoping report is for the deployment of one 3MW device only with no electrical connection.

4. Project Location

4.1. The planned site location overlaps with a Welsh Marine Plan Shipping Strategic Resource Area (SRA). You must demonstrate how the two can co-locate.

5. Project Description

5.1. The project description does not include sufficient information about the construction of the device including the carbon footprint of construction, or its launching and towage to its deployed location. The ES must include these details.

5.2. The ES must include a clear description of all aspects of the proposed development. For the construction stage this should include:

- land use requirements;
- site preparation;
- the duration and phasing of programme; construction materials; methods and activities associated with each phase; siting of construction compounds (including on and any off site); lighting equipment/requirements;
- an estimate of residuals and emissions by type, quantity, composition and strength (including water, air and soil pollution, noise, vibration, light and heat radiation) during

the construction phases of the development together with measures to mitigate emissions which should be incorporated where appropriate in an outline Construction Environmental Management Plan “CEMP” to be submitted with the ES;

- the number, movements and parking of construction vehicles (including Plant & Machinery etc., Heavy Goods Vehicles “HGV”, Light Goods Vehicles “LGV” and staff) should be clearly indicated in the ES which should be accompanied by an outline Construction Traffic Management Plan “CTMP”. Transport site access routes for construction traffic and any vehicles carrying abnormal loads in connection with the development on the public highway should also be clearly indicated within the ES as part of the CTMP;
- emissions - water, air and soil pollution, noise, vibration, light, heat;
- maintenance activities throughout the duration of the construction phase including land management having regard to ecological, landscape and human receptors.

5.3. The ES must make the duration of the project and decommissioning of the project clear. The Scoping report advises that the project duration is between 12 – 40 months but does not clarify whether this includes decommissioning.

5.4. A standard mooring buoy and the anchors will be connected by standard mooring chains in connection with fibre ropes. Further consideration must be given to the risk of the device becoming detached from its anchor/mooring and becoming a hazard to navigation.

6. Site Selection

6.1. There is concern regarding the impact the proposed devices may have on the safety of navigation, particularly collision/contact, changes to vessel routing and reduction in navigable space (and any resulting increase in the frequency of encounters), any constraints placed on recreational, commercial and fishing vessels operating in or transiting the area and access ports and harbours. It is noted that Figure *2.4C Shipping Vessel Density and Shipping Routes* identifies that at least five shipping routes pass through the potential site and would be directly impacted by its placement.

6.2. The Environmental Statement must provide details on the possible impact on navigational issues for both commercial and recreational craft, specifically:

- Collision Risk,
- Navigational Safety,
- Visual intrusion and noise,
- Risk Management and Emergency response,
- Marking and lighting of site and information to mariners,
- Effect on small craft navigational and communication equipment,
- The risk to drifting recreational craft in adverse weather or tidal conditions,
- The likely squeeze of small craft into the routes of larger commercial vessesl.

6.3. A Navigational Risk Assessment (NRA) must be included in the ES in accordance with MGN 543 (and MGN 372) and the MCA Methodology for Assessing the Marine Navigation Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI). This NRA should be accompanied by a detailed MGN 543 Checklist which can be downloaded from the MCA website: https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping.

6.4. MGN 543 Annex 2 requires that hydrographic surveys must fulfil the requirements of the International Hydrographic Organisation (IHO) Order 1a standard, with the final data supplied as a digital full density data set, and survey reports to the MCA Hydrography Manager. Failure to report the survey or conduct it to Order 1a might invalidate the Navigational Risk Assessment if it was deemed not fit for purpose.

6.5. The shipping and navigation study must include radar and manual observations in addition to AIS data to ensure vessels of less than 300gt are captured. Casualty information from the MAIB and RNLI would also be good data sources, in establishing the risk profile for the area.

6.6. Consideration needs to be given to the implications of the site size and location on Search and Rescue (SAR) resources and Emergency Response Co-operation Plans (ERCOP) for both construction and operation phases. Any additional Search and Rescue requirements, as per MGN 543 Annex 5, need to be agreed at the approval stage and recorded in a SAR checklist.

6.7. The cumulative and in combination effects require consideration, in particular regarding shipping routes, and the proximity of other activity or proposed developments in the area will require a detailed assessment to be considered in the ES.

6.8. Any application for safety zones will need to be carefully assessed and additionally supported by experience from the development and construction stages.

7. Technology Description

7.1. The mooring arrangements for any floating turbines should be carried out in accordance with the MCA and HSE Guidance '*Regulatory expectations on moorings for floating wind and marine devices*', which also include Third Party Verification. This document is also available via following link https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping.

7.2. Consideration must be given to how the site and/or device will be marked with marine aids to navigation in accordance with the general principles outlined in IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) Recommendation O-139 on the Marking of Man-Made Offshore Structures as a risk mitigation measure. In addition to any permanent marking required, additional aids to navigation such as buoys may be necessary to mitigate the risk posed to the mariner, particularly during the construction phase. All marine

navigational marking, which will be required to be provided and thereafter maintained by the developer, will need to be addressed and agreed with Trinity House. This will include the necessity for the aids to navigation to meet the internationally recognised standards of availability.

8. Underwater Noise

8.1. Noise during construction has been discounted as it is implied that it will be constructed in Milford Haven quayside. But the installation may require foundation laying/anchoring which might produce noise. It isn't clear what levels of noise will be produced during this stage although it is anticipated that it will be relatively risk free (non-injurious). Some noise during operation (and construction) from vessels is anticipated but again at levels that are not significant.

8.2. The noise assessment needs to be put into context of the NOAA/NMFS 2018 injury thresholds/criteria and Behavioural/disturbance categories. Indicative source levels (peak, presumably impulsive noise) have been presented but it isn't clear how the assessment would appear for continuous noise or Sound Exposure Levels (cumulative). This information would probably confirm our understanding that noise injury impacts are benign and not significant, but we are not clear on the level of disturbance that might result as this isn't presented in a standard way –the dBHT metric is used instead which makes it difficult to make cross comparisons with other developments in Welsh waters that haven't used that metric. While the dBHT metric is useful, standard units must be used as well e.g. SPL, SEL, RMS etc. The information on ambient noise measurements is welcomed to provide context for the anticipated noise levels from construction/operation.

8.3. Wave Dragon Wales advised that they did not require us to seek advice from external advisors regards the Scoping Report and underwater noise at this stage. NRW PS advised that external advisors will be consulted on receipt of a marine licence application specifically with regard to underwater noise and vibration. Should we receive advice indicating the ES is insufficient in terms of considering impact on these matters there may be a delay to the determination of an application whilst these matters are addressed.

9. Impact Pathways

9.1. The information provided in Chapter 5 – Impact Pathways, whilst substantial is not sufficient to fully inform the potential significant effects.

9.2. In general this section is quite high level which has made it difficult to determine what impact pathways have been scoped in or out for certain species and habitats. In addition these are not clearly linked to the stages of the development. It may be easier to collate this information in the form of a table or matrix in the subsequent ES.

9.3. The report clearly identifies a number of pathways for potential harm in relation to features of the European designated sites. While there is some attempt to

discuss and assess impact this is not done with clear reference to the conservation objectives of the designated sites.

9.4. **5.2.1 Annex 1 Habitats** – A list of designated habitats and species has been provided in this section but with no detail on whether these features have been scoped in or out of any future assessment. Due to the location of the proposed device outside of Pembrokeshire Marine SAC we suggest that the following features can be scoped out:

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Atlantic Salt Meadow
- Sea Caves
- Lagoons
- Large Shallow Inlets and Bays
- Shore Dock
- Otter

9.5. In addition we consider that the following designated sites can also be scoped out:

- Carmarthen Bay and Estuaries SAC (due to distance from the site)
- Cardigan Bay (with the exception of marine mammal species features

9.6. Due to potential far field effects subtidal reef and sandbanks must be considered further as well as mobile species features.

9.7. The scoping report does not include the Skomer, Skokholm and the Seas off Pembrokeshire Special Protection Area (SPA) which the proposed site falls entirely within. These sites must be included in the ES. Further information on this site can be found on the designated sites pages of NRW's website here.

9.8. **5.4.1 – Birds.** At this stage there is currently insufficient detail to inform an assessment of potential impacts to marine birds. The reference to case studies from wind farms has little relevance here given the vast difference in technology design and operation. The suggestion of further bird surveys in section 6.5 is welcomed in order to inform a future assessment of potential impacts on bird species. It is recommended that further bird surveys be agreed with NRW prior to commencement.

9.9. It is essential to establish the presence of vulnerable species of seabird. All species of seabirds need to be considered as part of the screening process for the EIA and HRA. Possible adverse impacts may be applied to a range of birds (including seabird features of SSSIs and SPAs) both breeding and non-breeding populations over a wide area of search.

9.10. The scoping area for the EIA should be denoted by mean-maximum foraging ranges from seabird SSSIs and SPAs. Thaxter et al (2012) initially set the standard of

mean-maximum foraging ranges based on seabird tracking data. However, further tracking data has become available, in particular from the Future of the Atlantic Marine Environment (FAME) and Seabird Tracking and Research (STAR) projects.

9.11. Seabird biotelemetry is a fast moving field and so the scoping should not preclude the fact that more data on foraging range are likely to become available throughout the timespan of the assessment and this data should be considered in the final assessment. However, during the initial scoping phase we recommend that reference be made to the FAME/STAR data. Some seabird tracking data is available via the following link: https://rspb.maps.arcgis.com/apps/Cascade/index.html?appid=d6c3aa1ec7184a2895a01cebf451c7b3&utm_source=rspb.org.ukseabirdtracking&utm_medium=shorturl

9.12. At least 2 years of bird survey effort is required, covering all seasons and including both breeding and non-breeding populations. In addition to bird surveys, a desk study should be completed (see above link for FAME and STAR data). Bird data should be sourced from the Pembrokeshire county recorder (https://birdsin.wales/counties/pembroke/). This will be especially beneficial for later phases of the project that will require terrestrial bird data, although seabird data may be limited.

9.13. It will be important to identify the extent of the offshore site and provide a defined site boundary and appropriate buffer as a basis for undertaking baseline surveys. Co-ordinates must be provided defining the site boundary and buffer zone. The indicative site location labelled as Milla Fjord Site Area (depicted in the location map figure 1.2.2), is insufficient as it does not specify a study area or an area of search.

9.14. Owing to the distance of the development site from the shore, boat based or aerial surveys will be required, in accordance with Guidance on Survey and Monitoring in Relation to Marine Renewables Deployments in Scotland Volume 4: Birds (Scottish Natural Heritage, 2011).

9.15. Possible adverse impacts have been identified for a range of marine wildlife including the entrapment and underwater collisions of seabirds. These operational risks may need further consideration through robust modelling. Guidance is available from SNH and we would recommend that further advice be sought from NRW TE on this matter. It is also important to consider appropriate mitigation measures to reduce impacts to seabirds.

9.16. **5.4.2 Marine Mammals** – On the whole, we consider that the main impact pathways have been identified but suggest that the applicant also consider effects on prey, marine mammal habitat loss/changes, collision with device and entanglement with tether lines (see SNH report here). The type of catenary mooring that Wave Dragon intends to use is considered one of the higher risk designs for entanglement, and while a single device is unlikely to pose a high risk, an array (7 devices) would increase the chances of entanglement. Additional impact pathways must be

considered by using the following tool https://www.gov.scot/Topics/marine/Licensing/marine/tool

9.17. **5.4.5 Fish** - The project lies within spawning and nursery areas for various fish species, as identified in Ellis, 2010. The footprint of the device on the seabed consists of no more than 10 anchors. Although in areas of potential nursery and spawning grounds, the footprint of the device is small and not likely to impact on these life stages for fish species which use the area.

9.18. The Scoping Report states that "*A cage will also be fitted around the turbines as a fence to stop marine debris (nets, wood, containers etc) and larger fish, birds or mammals from entering the hydro turbines and potentially causing damage to either themselves or the turbines*." Further information would be needed on what the mesh size of the cage is and what fish sizes will be vulnerable to turbine impacts. There is therefore a pathway for fish impacts which needs to be considered within any future assessment as small to medium size fish may be impacted. It appears from the project description that fish in the upper part of the water column have the potential to pass through the turbines which could result in injury or mortalities. The impact should be explored for fish types likely to be vulnerable such as juvenile fish, pelagic fish and fish undergoing diel migration.

9.19. **5.6 Coastal processes** – This section provides a brief overview of the potential impacts on physical processes. Although there is likely be some modification of flow and localised scour from the anchors and mooring chains this is considered to be of minimal concern due to the lack of designated benthic habitats in proximity to the proposed site. Of more importance is the removal of wave energy from the device itself and how this effects development of the wave field in the lee of the device. A reduction in energy may affect near shore sediment transport in shallower coastal areas in the lee of the device. Although this may only be a small scale impact for a single device the likelihood is that this will increase with an array scale deployment. An assessment of how this device will impact upon sediment distribution must be included in the ES.

9.20. Landscape: proximity to the Pembrokeshire Coast National Park landscape needs to be considered. The scoping should treat landscape as a potential receptor and consider whether there are intervisibility impacts.

9.21. Lighting: is not really covered in the description of the project but is referenced elsewhere in the supporting information. This could have a visual impact on migratory Manx shearwaters and on the night sky. The ES must describe how the lighting used on the device will not have a negative impact on nightime movements of Manx Shearwaters. The information included in the ES must include type of lighting device's used.

9.22. **5.4.7.3.6 Pollution to water** – NRW PS welcome the inclusion of a pollution control plan to be implemented prior to the installation phase. In addition to the

control of spillages, an incident response plan must also be included for eventualities such as operational vessel collisions and mooring failure.

10. Pre-deployment environmental assessment

10.1. **6.2.2 - 2013 Initial Site Survey** - Multi-beam bathymetry surveys have been undertaken at the site in 2013, 2014 and 2018. Although the coverage isn't complete in all years it gives a good overview of the seabed type and substrate. We suggest that in addition to plotting the data for individual years they are also compared (particularly between 2013 and 2018) to show how mobile the sand waves are in this area which will support the physical processes assessment for any future application.

10.2. **6.3.1 Sediment Sampling** - The inclusion of sediment sampling in 2014 to confirm the seabed type is welcomed, however it seems that samples were only collected for half of the site. If the device is to deployed outside of the area where sampling has been undertaken, then sediment sampling must be expanded to cover the full area as we presume the individual device could be deployed anywhere within the application area.

10.3. **6.5.1 Survey Schedule** – The survey schedule is quite confusing as a number of different receptors have been included in this section with limited information on the timing, frequency and duration of the different surveys. We appreciate that some may overlap i.e. bird surveys with marine mammal and could be conducted simultaneously. We agree that a minimum of 2 years of ornithological and marine mammal surveys should be conducted in order to inform an environmental statement. It is recommended that the survey plan and schedule is agreed with NRW TE prior to implementing the survey.

10.4. For potential impacts to fish species, NRW PS consider that a desk-based study is sufficient to provide a baseline of important fish habitats in the project area, followed by the establishment of a list of sensitive species to be considered in an EIA, in agreement with NRW TE (e.g. pelagic, diel migration, designated migratory species, Section 7 species etc.). The outcomes of the EIA will aid to refine the likelihood of impacts to fish from the device but NRW PS also advise that consideration is taken at this stage on monitoring measures to evaluate rates of fish passage and mortalities through the turbines. This is due to the novel nature of the device but also to inform impacts on future larger arrays, where potential fish impacts may prove more significant than a single device and a strong evidence base may be required.

11. Cultural Heritage

11.1. Cultural Heritage does not appear to be mentioned in the scoping document and there is no evidence that this topic has been "scoped" out as part of the screening or scoping exercise. Whilst it is noted that there are no designated heritage assets in the vicinity of the proposed development area, there is a clear potential that undesignated heritage assets are located there (see for instance Figure 2.1.1b:

Shipwreck in the scoping report). We are also mindful of the recent West Coast Palaeolandscapes Survey led by Birmingham University which identified significant submerged Palaeolithic and Mesolithic landscapes close to the proposed Wave Dragon site. Consequently it is our opinion that the current scoping fails to consider the potential for the development to have an adverse impact on the cultural heritage and that this topic will need to be included in any environmental impact assessment that is produced.

11.2. The Royal Commission on the Ancient and Historic Monuments of Wales is the primary source of information for marine historic assets. It is noted that the locations of historic wrecks and submerged vessels are likely to be imprecise and therefore it cannot be assumed that the locations provided on maps are accurate. The study needs to take account of this and consider potential for submerged archaeological remains and vessels.

11.3. The work required to determine the magnitude of impact of the development on the historic environment will need to be assessed using professional judgement by a competent expert. It is strongly recommended that this work should be undertaken applying industry standards by a Member of the Chartered Institute for Archaeologists (CIFA) or CIFA registered organisation.

11.4. The Royal Commission on the Ancient and Historic Monuments should be consulted for advice regarding the choice and application of survey techniques suitable for establishing the potential for maritime heritage impacts.

11.5. It may also be useful for the methodology and techniques, along with the bibliography used to produce Fitch S & Gaffney V2011 West Coast Palaeolandscapes Survey to be considered. Along with the guidance given in Gregory, D. & Manders, M. (eds), 2015: Best practices for locating, surveying, assessing, monitoring and preserving underwater archaeological sites, SASMAP Guideline Manual 2.

12. Policy and legislation

12.1. The scoping report does not identify appropriate legislative and policy requirements.

12.2. The scoping report fails to mention that the scoping opinion is submitted under the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended). This must be clarified in the ES.

12.3. The report fails to reference the Environment (Wales) Act 2016 and how the project contributes to the Sustainable Management of Natural Resources in Wales and further, how the project contributes to the achievement of the well-being goals in section 4 of the Well-being of Future Generations (Wales) Act 2015.

12.4. The following policy and guidance documents will need to be taken into account:

- Planning Policy Wales
- Conservation Principles for the Sustainable Management of the Historic Environment in Wales
- Welsh Government Technical Advice Note 24: the Historic Environment
- Welsh National Marine Plan

12.5. The report fails to identify how the project fits in with the UK Marine Policy Statement and does not consider the draft Welsh Marine Plan. NRW PS note that upon implementation of the Welsh Marine Plan, there will be no transitional provisions.

12.6. You should be aware that the Welsh Government are developing the Welsh National Marine Plan(WNMP) for the inshore and offshore Welsh marine plan areas. Once adopted, decision makers in determining an authorisation (such as a marine licence determined by NRW on behalf of The Welsh ministers) must take their decision in accordance with the plan unless relevant considerations indicate otherwise.

12.7. We currently expect the Welsh National Marine Plan to be finalised and adopted in 2019 so developers are encouraged to consider the draft plan in putting forward their proposals. The draft plan has recently undergone public consultation and along with the summary of consultation responses can be viewed via the following webpage: https://consultations.gov.wales/consultations/draft-welsh-national-marine-plan.

13. Geographical boundaries and approach to EIA

13.1. The scoping report does not consider the potential impacts to other European States. The ES must include details of potential impacts (if any) to other European States, consultation with other member states will be required during the determination phase if there are potential impacts. This may affect determination times. The ES must clarify whether or not there are any potential impacts.

14. Proposed EIA methodology

14.1. The Scoping Report did not contain the proposed methodology for how the EIA will be undertaken.

14.2. The completed ES must include a description of the likely significant effects of the project, whether direct, indirect, secondary, cumulative, transboundary, short-term, medium-term, long-term, permanent, temporary, positive and negative.

14.3. The ES must also include a description of the methods used to make the assessment of the significant effects and difficulties encountered in compiling the information, and uncertainties involved.

14.4. A description of measures to avoid, prevent, reduce or offset identified significant adverse effects, and proposed monitoring arrangements must also be included in the final ES.

14.5. The ES must include a description of the expected significant adverse effects of the project on the environment resulting from the vulnerability of the project to risks of major accidents or disasters

15. Human environment

15.1. NRW PS note that an assessment of the impact of the device on fishing, both commercial and recreational, is not included. The seas off Pembrokeshire are one of the UK's premier sport fishing destination for shark fishing. Consideration for how the location of this device could impact upon travel routes for both recreational angling vessels and commercial fishing vessels must be made.

15.2. We recommend that you have regular meetings with Fishing Industry representatives starting at the top with the Welsh Fisherman's Association, and also more localised groups. We recommend that you follow the Fishing Liaison with Offshore Wind and Wet Renewables (FLOWW) best practice guidance for fisheries liaison to ensure continued liaison with the fishing industry through the planning stages and all subsequent stages of the project (FLOWW, 2014) available at http://www.thecrownestate.co.uk/media/5693/floww-best-practice-guidance-for-offshore-renewables-developments-recommendations-for-fisheries-liaison.pdf.

16. Cumulative impacts and in-combination effects

16.1. Cumulative and in-combination effects are touched upon in chapter 5.4.3.5. The scoping appears to be limited to direct impacts within the near vicinity and it lacks a list of potential projects and plans for consideration. Relevant projects and plans for consideration may be found within:

- The Nationally Significant Infrastructure Projects register: https://infrastructure.planninginspectorate.gov.uk/projects/register-of-applications/
- The Developments of National Significance Register: http://gov.wales/docs/desh/publications/180312-dns-register-en.pdf (There is an additional project in the study area: 350MW land based green energy scheme – Egnedol Wales Ltd.)
- Planning Policy e.g. Local Development Plans, Transport Plans (National and Local) and National Policy Statements.
- An up to date list of marine licensable developments can be found at the following link: http://lle.gov.wales/catalogue/item/MarineLicences/?lang=en
- The proposed activities are in relatively close proximity to the proposed Greenlink Interconnector Cable route. Incombination effects of this must be

considered.

16.2. We also draw your attention to the Habitats Regulations Assessment for the Draft Wales Marine Plan which was published in December 2017. This was unable to rule out Adverse Effect on Integrity for multiple SPA, SAC and Ramsar sites and features. These conclusions should be taken into account when screening relevant plans or projects under the Habitats Regulations that could have an in-combination effect on those sites and when considering cumulative and synergistic effects under the Environmental Impact Assessment and Strategic Environmental Assessment Regulations.

16.3. Regard should also be had to Natural Resources Wales' emerging Area Statements (Marine and South West Wales Areas).

17. Summary

17.1. NRW PS's Scoping Opinion relate to a single device with no cable connections only. For future deployment of an array of devices and/or electrical connections will require further appraisal by EIA.

17.2. We encourage you to refer to the Crown Estate Technical Report: Wave and tidal enabling action: consolidation of wave and tidal EIA / HRA issues and research priorities (2014). This will provide guidance to addressing the key strategic EIA / HRA issues associated with wave and tidal stream arrays and identify strategic research priorities which individual developers may plan to undertake, or which could be addressed through a coordinated programme.

17.3. There has been no detail included of the methodology employed or developed to establish the level of environmental risk of the development to a range of receptors. The methodology used must take account of the sensitivity of the receptor, the exposure of the receptor to any effects caused by the proposed activity and the magnitude of the effects over and above the baseline condition, and with reference to the magnitude of natural variability in environmental conditions. It is therefore not possible for NRW PS to confirm conclusions in the scoping report. A detailed methodology must be included in the ES ideally including an established environmental risk assessment methodology/matrix to be used in the ES. It would be beneficial that the risk assessment methodology is agreed with NRW TE prior to carrying out the EIA.

17.4. NRW PS is unable to agree that potential effects have been correctly identified for all of the stages of the project (i.e. construction, operation and decommissioning). For example, for decommissioning it is stated "*Recovery of seabed revealed back to a state similar to that prior to introduction of the anchors and chains will probably depend largely upon the depth to which the anchors have settled during the operational period and the speed with which subsequently infilling sediment becomes similar to that of the surrounding areas. Given the highly mobile nature of the seabed this is likely to be relatively quick. Overall the impact is likely to be of very low magnitude and the overall significance negligible*". The ES must

explain how conclusions have been derived from all stages of the project, for example through reference to previous studies/schemes.

17.5. It is not clear what topics have been scoped in or out of the study and for what reasons. The scoping report appears to be missing sections on:

- Seascape and landscape
- Tourism and Recreation
- Ministry of Defence (MoD) Areas
- Aviation
- Other Sea users
- Shellfish
- Commercial fisheries
- Navigational safety
- Risk Management and emergency response
- Marking and lighting of site and information to mariners

17.6. References used appear to be from the 1990's to mid 2000's. You must ensure that the sources used are still valid and are the most up to date information available.

Yours sincerely

Marine Licensing Team
Natural Resources Wales

Cc: All Consultation Bodies