

SCOP-0036 - Orbital Marine
Power - Westray Tidal Array
- Westray Firth, Orkney

Consultation Responses

Crown Estate Scotland

Anna Shenton

From: [Redacted]
Sent: 24 January 2024 16:11
To: MD Marine Renewables
Subject: RE: SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney – Consultation on Request for Scoping Opinion – Response Required by 22 January 2024

Dear Emma,

Thank you for consulting Crown Estate Scotland regarding the Scoping Report recently submitted by Orbital Marine Power for the Westray Tidal Array project located in the Westray Firth, Orkney. Apologies for the late response to this consultation.

I can confirm that Orbital Project 5 Limited currently hold an Option Agreement with us for the area marked “Existing Westray South AfL” in Figure 1-1 of the Scoping Report. A cable corridor is still to be agreed as part of the Option. At present, the aggregated installed capacity associated with the Option Agreement is 30MW.

When determining projects to be considered in any cumulative impact assessment, Crown Estate Scotland’s Spatial Hub, available through our website – [Crown Estate Scotland Spatial Hub \(arcgis.com\)](https://arcgis.com), may prove to be a useful resource.

We have no further comments to make at this time.

Kind regards,
Caitlin

Caitlin Byers
Development Manager (Integration & Transition)
Crown Estate Scotland
[Redacted]

@crownestatescot

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EMEC

Anna Shenton

From: [Redacted]
Sent: 18 January 2024 17:04
To: MD Marine Renewables
Cc: [Redacted]
Subject: SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney – Consultation on Request for Scoping Opinion – Response Required by 22 January 2024

Categories: pdf, Saved in eRDM
Objective: -1

Dear Emma,

Thank you for sending this across to us.

I can confirm that EMEC have no comments.

Many thanks,

Amy Sutcliffe

Environment and Consents Officer
European Marine Energy Centre (EMEC) Ltd

T: [Redacted]
emec.org.uk • [blog](#) • [linkedin](#) • [twitter](#) • [youtube](#) • [facebook](#) • [privacy policy](#)

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Orkney Harbours

Anna Shenton

From: [Redacted]
Sent: 18 January 2024 11:02
To: MD Marine Renewables
Subject: RE: SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney – Consultation on Request for Scoping Opinion – Response Required by 22 January 2024

Categories: pdf, Saved in eRDM
Objective: -1

Classification: OFFICIAL

Hi

Good morning!

Further to your email below, of Friday 22 December, we have a nil response to this email.

Kind regards
Tanya

Marine Services and Transportation
Orkney Islands Council
Harbour Authority Building
Scapa, Orkney
KW15 1SD
[Redacted]



Historic Environment Scotland



By email to:

MD.MarineRenewables@gov.scot

Marine Directorate (Marine Renewables)
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Enquiry Line: [Redacted]
[Redacted]

Our case ID: 300054228
Your ref: SCOP-0036

12 February 2024

Dear Marine Directorate

[The Marine Works \(Environmental Impact Assessment\) \(Scotland\) Regulations 2017](#)
[The Electricity Works \(Environmental Impact Assessment\) \(Scotland\) Regulations 2017](#)
[Scoping Report](#)
[SCOP-0036 Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney](#)

Thank you for your consultation on the above scoping report, which we received on 22 December 2023. We have reviewed the details in terms of our historic environment interests. This covers world heritage sites, scheduled monuments and their settings, category A-listed buildings and their settings, inventory gardens and designed landscapes, inventory battlefields and historic marine protected areas (HMPAs). In this case our advice also includes matters relating to marine archaeology outwith the scope of the terrestrial planning system.

The relevant local authority archaeological and cultural heritage advisors will also be able to offer advice on the scope of the cultural heritage assessment. This may include heritage assets not covered by our interests, such as undesignated archaeology, and category B- and C-listed buildings. In this case, you should contact Paul Sharman on 01856 873535 (ext. 2535) or by email at paul.sharman@orkney.gov.uk

Scope of assessment

We understand that the development would comprise up to 70 tidal Orbital O2 turbines plus associated infrastructure including mooring anchors and cabling. Plate 4-1 in the Report shows that the turbines comprise a surface-floating hull up to 83m long and 4m wide, with two underwater “legs” that support and deploy the rotors. Each turbine unit would be anchored to the seabed at 4 points. The turbine units would float approximately 1.6m above the water surface and would be painted yellow with lights fitted to enhance visibility to other sea users.

We note that the final cable link from the array to land does not form part of this development proposal. The Westray Array will link to the adjacent EMEC site where an upgraded connection to the mainland is proposed subject to a separate application.



Scoping Report

While we welcome the inclusion of Marine Archaeology and Cultural Heritage in the Scoping Report we have some significant concerns about the supporting information provided and some of the conclusions drawn. The assessment of setting impacts on onshore heritage assets is particularly problematic. Further information on these issues is provided in the attached Annex but they can be summarised as follows –

- There is a heavy reliance on baseline information from previous studies some of which are poorly referenced and/or difficult to access, making it difficult to verify the conclusions drawn.
- Information for the study area used is limited and contradictory.
- It is not clear how the list of heritage assets identified in Table 9-8 relates to the study area.
- There is no obvious discussion of how the development could impact on the assets listed nor of how such impacts have been assessed for the Scoping Report.
- The conclusion that there would be no significant setting impacts on cultural heritage interests appears to be based on an unnamed and unreferenced study for another development.

The Scoping Report concludes that there will be no significant impact on marine archaeological and cultural heritage assets and that these interests can therefore be scoped out of future consideration within the EIA process. While we are content that physical impacts can be scoped out of the EIA process, the Scoping Report does not provide sufficient information to support this conclusion for setting impacts. **We therefore recommend that impacts on the settings of cultural heritage assets are scoped in to the EIA process. This should include cumulative setting impacts.**

Potential physical impacts

The Report concludes that there is minimal risk of physical impacts on marine archaeological deposits due to the nature of the seabed and tidal conditions within the development area. We are content with that assessment.

We welcome the commitment given in Section 4.5.2. of the Report to a mitigation strategy to address any residual risk of physical impacts comprising:

- The implementation of Archaeological Exclusion Zones (AEZs) where appropriate within which no development related activities will take place;
- Avoidance of anomalies of possible archaeological interest by micro-siting of design where possible;
- Further investigation of any anomalies that cannot be avoided by micro-siting of design (i.e. using a diver or Remote Operated Vehicle (ROV));
- Assessment of potential prehistoric deposits including geoarchaeological recording of core samples, deposit modelling and archaeological input into any future sampling programme/s; and
- The archaeological assessment of any further geophysical data.



- Preparation and implementation of a Written Scheme of Investigation (WSI) and Protocol for Archaeological Discoveries (PAD)

We agree that this would provide an acceptable standard of mitigation for a development where no physical impacts were expected. We recommend that the WSI and PAD are submitted with the EIA Report as supporting information. This would allow Marine Directorate to reach a fully informed opinion on the application.

Potential setting impacts

As noted above, we do not consider this topic has been addressed adequately in the Scoping Report. The Report lists a number of designated heritage assets on the surrounding islands which could experience impacts on their settings from the development but does not analyse this information any further. We recommend that a Zone of Theoretical Visibility model should be applied to identify those assets most likely to be affected by the development. The assets identified should then be subject to further consideration comprising a detailed assessment of their settings and the potential impact that the development could have on those settings.

We strongly recommend that our [Managing Change Guidance Note on Setting](#) is used to inform setting assessments. Further information on good practice in cultural heritage assessment can be found in Appendix 1 of the [EIA Handbook](#).

Potential cumulative impacts

We recommend that the potential for cumulative setting impacts from the proposed development in combination with other developments in the vicinity be assessed. This should assess the incremental impact or change when the proposed development is combined with other present and reasonably foreseeable developments.

Further information

Guidance about national policy relating to cultural heritage can be found on our website at <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/historic-environment-policy-for-scotland-heps/>.

We hope this is helpful and we would be happy to provide further information and advice to the applicants as they work through the EIA process. Please contact us if you have any questions about this response or require further information on any matter raised. The officer managing this case is Deirdre Cameron who can be contacted by phone on 0131 668 8896 or by email on Deirdre.cameron@hes.scot

Yours sincerely

Historic Environment Scotland



Annex

Scoping Report

We welcome the inclusion of an Archaeology and Cultural Heritage chapter in the Scoping Report but as noted above, we consider there are some significant issues with the assessment carried out.

Physical impacts

For physical impacts, we note that most of the information provided derives from existing records and information obtained from studies for the EMEC development at Falls of Warness rather than specific survey work undertaken for this application. As a result, much of that information is not specific to the development site. Normally, this lack of direct evidence would be problematic, but given the existing evidence for the rocky nature of the seabed and the strong tidal streams experienced across the development site we consider the archaeological potential of the development area is likely to be very low. Section 4.5.2. of the Report proposes suitable mitigation measures to address any residual risk of impacts on marine archaeological interests. We are therefore content that physical impacts on marine archaeology and cultural heritage can be scoped out of further consideration in the EIA process.

We recommend that the proposed Written Scheme of Investigation and Protocol for Archaeological Discoveries should be prepared and submitted in support of the EIA Report. This would allow suitable scrutiny of the proposed mitigation measures.

Setting Impacts

We have significant concerns about the treatment of setting impacts in the Scoping Report. The following list itemises the main issues –

- The Report outlines two different boundaries for a proposed study area. Para 9.3.1 states that a 5km study area extending beyond the boundary of the development has been used. Fig 9-3 illustrating cultural heritage assets in the vicinity of the proposals depicts a 1km study area around the development site. We cannot be certain which area has been used to inform the conclusions of the Report.
- The Report provides no rationale for the selection of the study area. We would expect the statement in 9.3.1. that a 5km boundary is “considered sufficient to capture all receptors marine archaeology and cultural heritage receptors that could potentially experience significant effects as a result of the Project” [sic] to be supported by further explanation and supporting evidence such as a Zone of Theoretical Visibility study applied to existing records relating to cultural heritage sites.
- Section 9.3.3.3 and Table 9-8 list the onshore heritage assets on the islands around the development area. The relationship between the sites listed and the study area is not explained.
- Section 9.3.3.3. also states that “it is anticipated that only heritage assets within the coastal regions of these islands may be affected”. These “coastal regions” are not defined and no rationale is offered for this anticipated conclusion.



- The report offers no assessment of the settings of any heritage assets, nor does it provide a general indication of the potential setting impacts that might arise from the development.
- Section 9.3.4. and Table 9-9 provide an assessment of potential impacts on cultural heritage. Setting impacts are assessed as follows –
“there are five Listed Buildings and 30 Scheduled Monuments on the coasts adjacent to the Project, whose setting may be affected. However, in terms of the archaeological study completed for the nearby EMEC Fall of Warness tidal demonstration site, it found that no onshore sites of archaeological interests would be impacted by the development and operations at the site, which is considered to also be applicable to the Westray Project.”
The archaeological study mentioned is not quoted or referenced and it is therefore impossible to check what was assessed and whether the conclusions are relevant to the current development. The Report does not explain how the results of the EMEC study can be considered applicable to a development of up to 70 turbines in a different area.
- The Report does not appear to have applied any further consideration to the impact of the development on the settings of cultural heritage assets beyond the adoption of the conclusion of the EMEC study. It does not outline any formal assessment process or methodology that could have been used to support or confirm the decision to scope out setting impacts.

Conclusion and recommendations

Physical impacts

We are content that the development has extremely low potential to cause significant physical impacts to marine archaeology or cultural heritage assets. We are also content that if they are properly implemented, the mitigation measures proposed should be sufficient to address any remaining risk of impact. We therefore agree that **physical impacts on cultural heritage interests can be scoped out of further assessment.**

Impacts on setting

We do not consider the Report provides an adequate assessment of the potential for impacts on the settings of cultural heritage assets. As a result, we consider **setting impacts on cultural heritage interests must be scoped in to the EIA. This includes cumulative setting impacts**

We recommend that heritage assets should be selected for detailed consideration using a Zone of Theoretical Visibility (ZTV) analysis. We expect all nationally designated assets within the ZTV to undergo an initial assessment to determine the potential for effects to their setting. This assessment should demonstrate a full appreciation of the setting of each heritage asset where potentially significant impacts are identified. This consideration should recognise that impacts may occur on views from, towards or across individual heritage assets as well as from potential changes to their experience. Our Managing Change guidance note on [Setting](#) provides further detail on this matter.



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Once setting impacts have been identified, the significance of those impacts should be assessed as part of the EIA process. We recommend this is done in accordance with the guidance provided in the [Environmental Impact Assessment Handbook](#). We would expect any significant effects identified to be mitigated as part of the EIA process.

The applicant should ensure that this work is carried out by suitably experienced and qualified experts as required by the EIA regulations.

Historic Environment Scotland

12 February 2024

Marine Directorate Planning

T: [Redacted]
Email: [Redacted]

Our ref: LOT-23-005

Your ref: SCOP-0036

06/02/2024

Dear Ms Lees

**SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney –
Consultation on Request for Scoping Opinion**

We have reviewed the application submitted and offer the following comment:

There are several aquaculture sites registered with Scottish Government's Marine Directorate (SGMD) located in the vicinity of the Westray Tidal Array in Westray Firth proposed by Orbital Marine Power (see appended map).

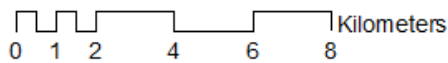
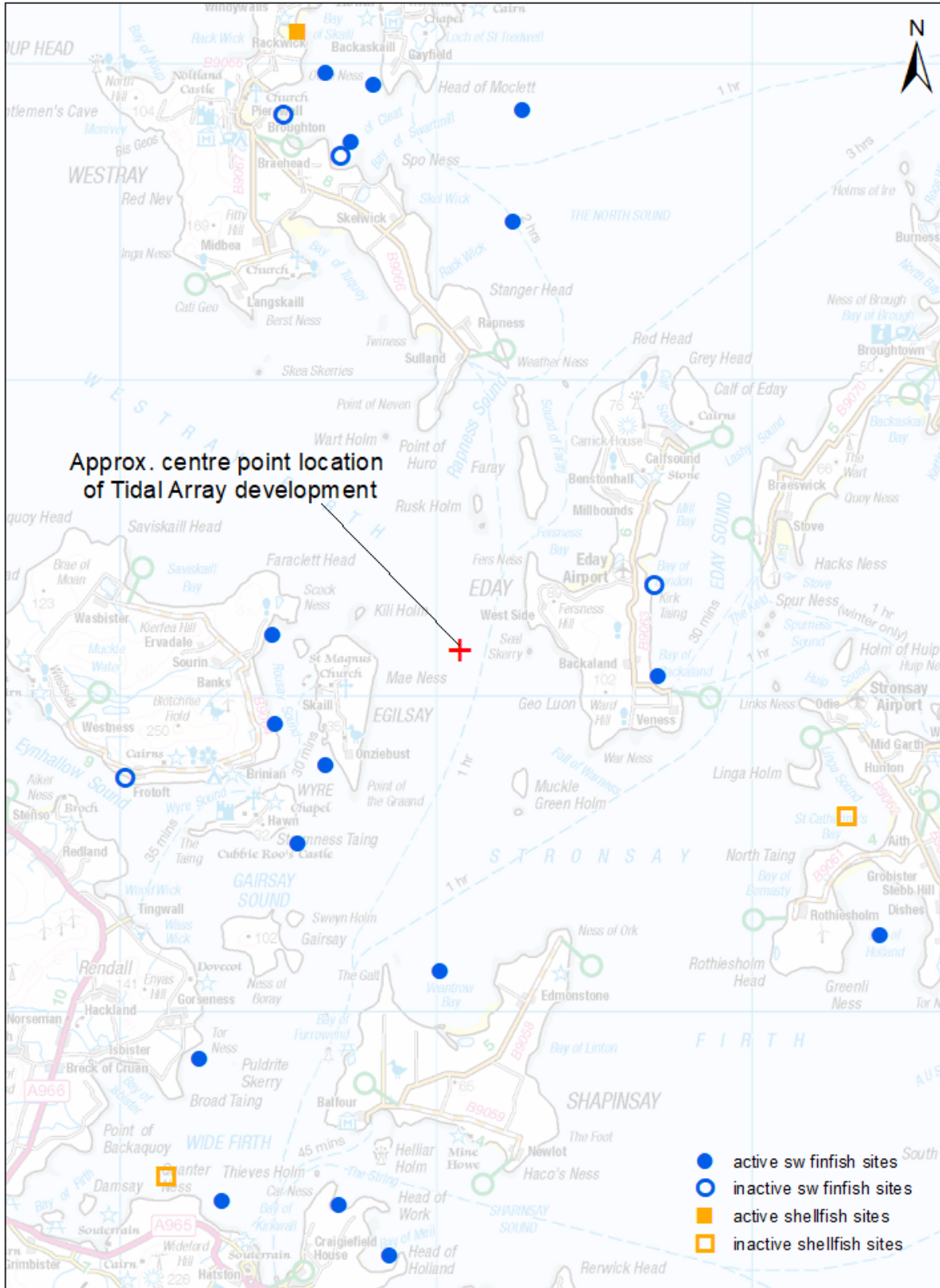
From the information provided in the scoping report on the proposed location of the development (pg 144) it would appear that the nearest aquaculture sites are located ~3.5km west of the north end of the development near Rousay. This site is an active marine pen Atlantic salmon site, operated by Cooke Aquaculture Scotland Ltd. There are also several other active marine pen Atlantic salmon sites in the vicinity as indicated on the appended map.

To our knowledge there are no proposed aquaculture sites currently in the planning system in this vicinity.

Yours sincerely

Aquaculture Planning
SGMD

Aquaculture sites in the vicinity of Orbital Marine Power proposed development of Westray Tidal Array at Westray Firth, Orkney



 **Scottish Government**
Riaghaltas na h-Alba

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Marine Analytical Unit

Westray Tidal Array

Marine Analytical Unit Response **Marine Directorate**

The Westray Tidal Array scoping report includes descriptions of a range of potential impacts. This response focuses only on the assessment of social and economic impacts. We recommend that a full Socio-Economic Impact Assessment be scoped into the Environmental Impact Assessment (EIA) report. We provide general advice on how to deliver this in Annex 1. The approach to SEIA should be proportionate to the size and generating capacity of the development.

1. Overview

1.1. Study area(s)

The study area for socio-economic impacts is defined within the scoping report as the Orkney Islands.

1.2. Data sources

We note the list of data sources used for the assessment. Please also see Annex 1 for further suggestions on data sources and research methodologies we expect to see in the EIA report. Please use the most up-to-date data sources.

1.3. Consultation, stakeholder engagement, and primary data collection

We noted the consultation activities that have been conducted to date, including the Marine Directorate License Operations Team, NatureScot, Orkney Islands Council and maritime stakeholders.

When assessing potential positive and negative impacts resulting from the development, please also engage with local communities. We hold that the engagement of local stakeholders is very important for the assessment of socio-economic impacts, as these communities might be directly impacted by the development (e.g. with regards to access to the islands). As described in the Annex 1, we recommend conducting a stakeholder mapping exercise to identify all potential stakeholders who might be affected by the development. These stakeholders need to be engaged for identification and assessment of potential impacts (e.g. creation of a working group with local community councils where magnitude and sensitivity of socio-economic impacts is discussed).

It is important not only to inform members of the general public about the development but also gather their views of how they might be affected (primary data collection). We recommend that potential socio-economic impacts are discussed with members of the general public and their assessment is fed into the EIA report.

We encourage the developer to engage trained social scientists with experience in qualitative methods to conduct research and primary data collection with communities to ensure that the social science research methods are designed and executed correctly so that the engagement is delivered in as ethical and meaningful way as possible.

A good example of community engagement can be found in West of Orkney OWF application [Environmental Impact Assessment Report - Volume 1 - West of Orkney Windfarm - West of Hoy, Orkney | Marine Scotland Information](#). An assessment can be robust whilst being proportionate.

2. Scoping of impacts

2.1. Overall approach to scoping

The scoping reports proposes to scope out:

- Local employment, business opportunities and economic output;
- Population changes, including increase and distribution;
- Pressure on demand for local housing and local services;
- Obstruction of tourism and recreational activities;
- Impacts on the economic value of tourism and recreational activities;
- Effects on mental health;
- Effects on education;
- Effects on economy.

We disagree with this approach and recommend that a full Socio-Economic Impact Assessment be scoped into the Environmental Impact Assessment (EIA) report. Please see Section 3 of the Annex 1 attached to this response for a full list of socio-economic impacts that need to be assessed during the EIA.

2.2. Economic impacts

With regards to economic impacts, the assessment should include consideration of:

- Direct, indirect and induced impacts
- Leakage, displacement and substitution effects
- Deadweight
- Cumulative impacts
- Sensitivity analysis to account for risk, uncertainty and optimism bias

There are a range of methodologies for calculating direct, indirect and induced impacts. These include the appropriate use of multipliers, a local content methodology, stakeholder involvement and expert opinion.

Modelling approaches should be realistic, based on robust data, and avoid over promising the economic impacts.

All prices should be presented in real terms (excluding inflation) and should state which year the prices represent.

2.3. Social impacts

In the EIA report, we expect to see how many and what kind of jobs are going to be created as a result of the project, whether this might cause an influx of workers during the different stages of the project; and what kind of social knock-on effects this might lead to (e.g. pressure on local services or housing). Given the relatively small population of Orkney Islands, even a small increase in population might have significant impacts, and it is important to assess how the project will impact local communities.

When considering social impacts, please describe how the project might impact access to the Orkney Islands and Westray. According to the Scottish Index of Multiple Deprivation, access is an important topic for consideration for the Orkney Islands. The scoping report mentions that passenger ferries operating in the Westray Firth might be affected by the project. Please consider how these ferries will be affected and whether this might lead to problems in accessing the islands for residents and visitors. It is mentioned in the scoping report that construction might take up to 18 months.

As mentioned above, in addition to conducting desk-based research in relation to potential socio-economic impacts, we would like you to engage local communities (local authorities, community councils, members of the general public, and any other relevant stakeholders) to discover how these stakeholders assess potential changes. Local communities' views are important when deciding how to mitigate potential negative impacts and maximise potential positive impacts resulting from the development.

Please describe any mitigation measures that will be put in place to address the potential negative impacts.

2.4. Impacts on tourism

Impacts on tourism and recreation are directly relevant to socio-economics. Therefore, we would like to see the assessment of socio-economic impacts on tourism in the EIA report. Please scope them into the socio-economics chapter.

2.5. Socio-economic impacts on fisheries

The scoping report suggests limited impact on fisheries but this finding should be tested with local fishing organisations. If there are significant local changes to

commercial fisheries, we would like to see the assessment of the knock-on socio-economic effects in the local communities affected. For example, if there is displacement leading to gear conflict, this could lead to drop in income and tensions within community.

3. Conclusions

We conclude that a full Socio-Economic Impact Assessment be scoped into the Environmental Impact Assessment (EIA) report. The approach to SEIA should be proportionate to the size and generating capacity of the development. We expect to see a detailed description of the methodologies used to assess economic and social impacts in the EIA, including specific details about the methodological approach taken and any key assumptions that underpin any estimates. This may be supplied in a technical annex if necessary. We recommend that in addition to consultation with regulatory and industry stakeholders, the developer engages with local communities to assess potential socio-economic impacts.

Annex 1: General Advice for Socio-Economic Impact Assessment

Marine Analytical Unit (MAU)

Marine Directorate

December 2023

This document sets out some suggestions for delivering socio-economic impact assessment drawing on the professional expertise of the Marine Analytical Unit (MAU), Marine Directorate.

Section 1. Some general best practice tips

- Take a proportionate approach to SEIA in line with the size and generating capacity of the development
- Consider offshore and onshore components of the development in the same assessment.
- Employ experts to design and carry out the assessment. The relevant expertise would include:
 - Social research and economist training, qualifications and experience
 - Familiarity and experience with appropriate methods for each discipline (including economic appraisal, social research methods such as surveys, sampling, interviews, focus groups and participatory methods)
- Consider potential secondary socio-economic impacts of any changes that affect the other relevant receptor groups covered in the wider EIA e.g. commercial fisheries, cultural heritage and archaeology and visual impacts.
- Include consideration of the cumulative impact of multiple offshore developments.
- Outline the rationale for scoping out impacts that are deemed to be minimal, including any evidence or analysis that has been used. If this is not provided it can be difficult for MAU to understand why impacts have been scoped out and we may suggest scoping them back in.

Section 2. Key components of a Socio-economic Impact Assessment

We set out below what we consider to be the key steps to an assessment. We recommend a combined approach so that social and economic impacts are covered together in the assessment, whilst acknowledging that different methodologies for social and economic impacts assessment are needed at certain stages, and that the two disciplines are distinct.

We wish to highlight the importance of stakeholder engagement throughout the assessment, and the use of social research methods (see Methods Toolkit referenced at the end of this Annex) to gather primary data and first hand perspectives from particular groups and communities that are affected. These are helpful in order to better understand the nature and degree of impacts that might be caused by changes that are expected occur. A change in itself may or may not bring about tangible impact, impacts may vary for different people or be perceived in different ways, are affected by individual values and attitudes, and conditioned by the context.

Stakeholder engagement and data collection can occur at a number of stages in the SEIA process and may involve similar methodologies but there are important differences to note. The primary aims of stakeholder engagement are to inform, consult or involve key stakeholders, and to communicate information and gather feedback. Data collection, in contrast is a more rigorous analytical process involving:

- Setting out a planned methodology in advance with clear objectives of what you wish to achieve through data collection
- Sampling strategies that take account of the demographic variations in the population and the need to include difficult to reach groups
- Robust methods to collect information from people in a neutral and unbiased way
- Awareness of how data will be analysed and reported on to obtain and disseminate robust conclusions
- Taking account of research ethics including informed consent, and data protection requirements under GDPR

The stages below are divided into the activities that we suggest are **before** the developer submits a request for a scoping opinion and those that are done **after** the scoping phase. We recommend an iterative approach which means that steps inform each other, information is built up over time, and some steps may be repeated or done in a different order.

The key steps should include:

Pre-scoping activities

- 1) **Getting started:** Employ economist and social research experts and work with them to develop a plan for the SEIA that sets out data requirements, and the proposed social and economic data collection and impact assessment methodologies, timescales, any data protection considerations, risk assessment and ethical issues that might arise from the work.
- 2) Develop a **detailed description** of the planned development and consider the project phases where socio-economic impacts might be experienced (covering development, construction, operation and maintenance and decommissioning phases). Start to map out potential socio-economic impacts and initial consideration of areas of impact on land that will need to be covered.
- 3) **Initial scoping of impacts:** develop a broad list of potential impacts informed by experts (including social researcher, economist, local representatives from key groups, community stakeholders and others).
- 4) **Define potential impact areas on land** taking into account locations and connections between activities. Different types of impacts may be experienced at different geographic levels, some in the area nearest the landfall or the nearest coastline to the development at sea, and others much further away (at Scotland level, UK level and internationally). The geographical scale at which social impacts are experienced may be different for social impacts compared with economic impacts. There may be multiple epicentres from which impacts radiate

including the site of the development, land-based areas such as landfall and grid connections, construction bases and places from which the development is visible. Activities that take place in the sea are also relevant for defining the impact area on land, for example the location of fishing activity and ports where fish are landed. The definition of the impact area will inform which communities and which sectors are included in the assessment and vice versa, so this exercise needs to be done iteratively with step 3, the initial scoping of impacts.

- 5) **Stakeholder mapping** is required to identify all the people, groups and stakeholders who may be affected by the development and is a first step in order to conduct effective stakeholder engagement. This exercise is informed by the definition of the impact area. A broad approach is recommended. Stakeholders are likely to include local communities, businesses, workers, other users of the sea, interest groups, community councils and so on.

Steps 4 and 5 may lead to a change in the list of potential impacts so this will need refined/checked.

- 6) **Stakeholder engagement (with those affected by the development, sea users, communities etc)** is a key requirement of SEIA that is done at different stages of the process. We recommend doing some initial stakeholder engagement before submitting the scoping report. Stakeholder engagement will fulfil a number of requirements:

- **Provide information about the development** so that those who might be affected are able to make an informed judgement about potential impacts
- **Present and refine list of potential impacts based on feedback** - identify impacts that are most relevant and add any additional ones that are identified
- **Collect initial data/ insights from stakeholders** on what potential socio-economic impacts (to be developed later)
- **Build relationships** with the community and key groups affected for later stages of the SEIA process so that they can understand the decisions making process and how they can influence it.

There are many **participatory methodologies** that can be used for effective stakeholder engagement that provide a deliberative space for community discussions.

This stage may also require the setting up of governance structures and a community liaison officer. **Early engagement** with those who might be affected is very important, as is meaningful and inclusive engagement where people feel that they are being listened to and that their feedback will be acted upon. It is important to set out clearly how stakeholder engagement is being done for the SEIA specifically.

- 7) **Gather contextual information** to develop a social and economic profile of the area prior to the development that will help with setting the baseline and impact

prediction, identifying potential industries and communities that might be affected and sources of data that can be used in the assessment. This might include primary data collection using social research methods (such as surveys, interviews, focus groups) as well as desk based analysis (of existing data sets such as fishing data, population data).

Primary data collection may occur alongside participatory activities (e.g. engagement events) but must be done in a rigorous and systematic fashion and the findings should be robustly analysed and incorporated into the SEIA. Impacts that are identified for the other receptors in the wider EIA may also have socio-economic consequences and so it may be important to include these in the SEIA.

8) Produce list of anticipated impacts to be covered in the scoping report

setting out the range of potential impacts that could occur, building on what has already been done using data and insights that have been collected from various activities described above. Details of the methods that have been used should be included to enable Marine Directorate to determine if the analysis is based on a robust and appropriate approach. Justification should be provided for any impacts that are scoped in or out. This could be based on suggestions made by stakeholders and the public during stakeholder engagement or an assessment based on the analysis of primary and secondary data.

It is helpful if the scoping report includes details on the approach to be used for the SEIA including methods for data collection, planned stakeholder engagement activities and data-sets to be used.

Post scoping activities for the SEIA

The scoping opinion will advise on the final list of socio-economic impacts to be assessed in the SEIA. This may require additional data collection/ social research to enable a more rigorous assessment of a narrower set of anticipated impacts. It may also require further stakeholder engagement in order to check the significance of impacts with different groups, and the acceptability of mitigation options.

The data and information that has been collected throughout the scoping phase will be used to conduct steps 9, 10 and 11 below.

9) Conduct baseline analysis to assess the situation in the absence of the development, to provide a point of comparison against which to predict and monitor change. Appropriate social and economic measures should be used for the baseline and cover relevant issues (see section 4 for suggested data sources). Key stakeholders and other interested parties including affected communities and sectors may be aware of baseline data to be included, and this can be explored in the participatory approaches described above. The findings from social research can also be included in the baseline. Note that baseline data can be presented in the scoping report but is also the first stage of the SEIA and so should be included in the SEIA report.

10) Predict impacts and assess their significance (otherwise known as impact appraisal or options appraisal): Through analysis, estimate the social and

economic changes and their expected impacts, considering any alternative development options and how significant the impacts might be. This is the core part of the assessment and forms the main part of the assessment report. Different methodologies and both primary and secondary data inform this part of the exercise.

Different phases of the development should be covered (development, construction, operation and maintenance) and also transitions between phases (if relevant).

The knock on socio-economic consequences of impacts in other parts of the EIA assessment should be assessed here, such as the impact on commercial fisheries, and impacts on related industries such as tourism could also be included.

It is important to consider distribution of impacts among different social groups (covering protected quality characteristics, socio-economic groups and geographic area where relevant to do so).

Economic impact appraisal should include consideration of:

- Direct, indirect and induced impacts
- Leakage, displacement and substitution effects
- Deadweight
- Cumulative impacts
- Sensitivity analysis to account for risk, uncertainty and optimism bias

There are a range of methodologies for calculating direct, indirect and induced impacts. These include the appropriate use of multipliers, a local content methodology, stakeholder involvement and expert opinion.

Modelling approaches should be realistic, based on robust data, and avoid over promising the economic impacts.

All prices should be presented in real terms (excluding inflation) and should state which year the prices represent.

11) Development enhancement, mitigation strategy and complete SEIA report.

There may be an opportunity for adaptation or other approaches to mitigate potentially adverse impacts and to maximise positive opportunities. This may include engagement with the community to develop a strategy for enhancing benefits and mitigating against impacts; or development of a Community Benefit Agreement (CBA). Again these activities should be done collaboratively with stakeholders where relevant and appropriate.

The SEIA report should clearly set out the methods used in the assessment, justification for decision made such as scoping certain impacts in or out of the assessment, and the approach to analysis. The report should cover the baseline analysis and results of the impact prediction or appraisal, and distributional

impacts . Social and economic impacts can be set out separately (where this makes sense) and together where they overlap.

It is good practice for the report to be reviewed by the people (i.e. the wider group of stakeholders and communities) who were involved in providing data for its production.

Section 3. Examples of different types of socio-economic impacts

In the literature social and economic impacts are defined in many different ways. Sometimes social and economic impacts are covered separately, whilst other sources refer to socio-economic impacts.

The following table sets out some commonly identified socio-economic impacts.

Examples of Socio-economic Impacts from Glasson 2017¹

1. Direct economic:

- GVA
- employment, including employment generation and safeguarding of existing employment;
- characteristics of employment (e.g. skill group);
- labour supply and training; and
- other labour market effects, including wage levels and commuting patterns.

2. Indirect/induced/wider economic/expenditure:

- employees' retail expenditure (induced);
- linked supply chain to main development (indirect);
- labour market pressures;
- wider multiplier effects;
- effects on existing commercial activities (eg tourism; fisheries);
- effects on development potential of area; and

3. Demographic:

- changes in population size; temporary and permanent;
- changes in other population characteristics (e.g. family size, income levels, socio-economic groups); and
- settlement patterns

4. Housing:

- various housing tenure types;
- public and private;
- house prices and rent / accommodation costs;

¹ Glasson J (2017a) "Socio-economic impacts 2: Overview and economic impacts" in Therivel R and Wood G (eds.), *Methods of Environmental and Social Impact Assessment*, Abingdon: Routledge

- homelessness and other housing problems; and
- personal and property rights, displacement and resettlement

5. Other local services:

- public and private sector;
- educational services;
- health services; social support;
- others (e.g. police, fire, recreation, transport); and
- local authority finances

6. Socio-cultural:

- lifestyles/quality of life;
- gender issues; family structure;
- social problems (e.g. crime, ill-health, deprivation);
- human rights;
- community stress and conflict; integration, cohesion and alienation; and
- community character or image

7. Distributional effects:

Distributional analysis is a term used to describe the assessment of the impact of interventions on different groups in society. Interventions may have different effects on individuals according to their characteristics such as income level or geographical location

- effects on specific groups in society (eg: by virtue of gender, age, religion, language, ethnicity and location); environmental justice

Section 4: Useful Data Sources for Socio-Economic Impact Assessments

Name	Summary	Link to Source
Statistics.gov.scot	Contains a wide range of data by local authority and other geographic breakdowns. Has a search by subject and area option.	statistics.gov.scot
Marine Economic Statistics, 2019	Annual economic statistics publication including GVA and employment data for marine economy sectors.	Scotland's Marine Economic Statistics 2019 - gov.scot (www.gov.scot)

Scottish Sea Fisheries Statistics, 2021	Provides data on the tonnage and value of all landings of sea fish and shellfish by Scottish vessels, all landings into Scotland, the rest of the UK and abroad, and the size and structure of the Scottish fishing fleet and employment on Scottish vessels.	Summary - Scottish Sea Fisheries Statistics 2021 - gov.scot (www.gov.scot)
Scottish Shellfish Farm Production Survey 2021	Statistics on employment, production and value of shellfish from Scottish shellfish farms.	Scottish Shellfish Farm Production Survey 2021 - gov.scot (www.gov.scot)
Scottish Annual Business Statistics 2020	Scottish Annual Business Statistics (SABS) presents estimates of employment, turnover, purchases, Gross Value Added and labour costs. Data are provided for businesses that operate in Scotland. Data are classified according to the industry sector, location and ownership of the business.	Scottish Annual Business Statistics 2020 - gov.scot (www.gov.scot)
Sub-Scotland Economic Statistics Database	The Sub-Scotland Economic Statistics Database provides economic, business, labour market and population data for Scotland, and areas within Scotland.	Sub-Scotland Economic Statistics Database - gov.scot (www.gov.scot)
Nomis Official Labour Market Statistics	Labour market statistics including data on employment, unemployment, qualifications, earnings etc.	Nomis - Official Labour Market Statistics (nomisweb.co.uk)
Economics of the UK Fishing Fleet 2020	Economic estimates at UK, home nation and fleet segment level for the UK fishing fleet. The estimates are calculated based on samples of fishing costs and earnings gathered by Seafish as part of the 2020 Annual Fleet Economic Survey.	Economics of the UK Fishing Fleet 2020 — Seafish

Scotland's Census, National Records of Scotland	Census data that provides information about the characteristics of people and households in the country.	Scotland's Census National Records of Scotland (nrscotland.gov.uk)
Scottish Index of Multiple Deprivation	Collection of documents relating to the Scottish Index of Multiple Deprivation - a tool for identifying areas with relatively high levels of deprivation.	Scottish Index of Multiple Deprivation 2020 - gov.scot (www.gov.scot)
The Green Book	HM Treasury guidance on how to appraise and evaluation policies, projects and programmes.	The Green Book: appraisal and evaluation in central government - GOV.UK (www.gov.uk)
The Magenta Book	HM Treasury guidance on evaluation. Chapter 4 provides specific guidance on data collection, data access and data linking.	The Magenta Book - GOV.UK (www.gov.uk)
Enabling a Natural Capital Approach (ENCA)	Supplementary guidance to The Green Book. ENCA resources include data, guidance and tools to help understand natural capital and know how to take it into account.	Enabling a Natural Capital Approach (ENCA) - GOV.UK (www.gov.uk)

Section 5: Further sources of guidance:

HM Treasury guidance on how to appraise and evaluate policies, projects and programmes: [The Green Book: appraisal and evaluation in central government](http://www.gov.uk)

Best practice in Social Impact Assessment according to the International Association for Impact Assessment: [Social Impact Assessment: Guidance for Assessing and Managing the Social Impacts of Projects](http://www.iaia.org)

The project A two way Conversation with the People of Scotland on the Social Impacts of Offshore Renewables (CORR/5536) has developed elements of a conceptual framework on social values that can be used to support and inform existing processes for assessing the potential social impacts of offshore renewables plans: [Offshore renewables - social impact: two way conversation with the people of Scotland](http://www.gov.scot)

Best practice guidance for assessing the socio-economic impacts of OWF developments: [Guidance on assessing the socio-economic impacts of offshore wind farms \(OWFs\)](http://www.gov.uk)

A toolkit of methods available to assist developers, consultants, and researchers carrying out socio-economic impact assessments: [Methods Toolkit for Participatory Engagement and Social Research - gov.scot \(www.gov.scot\)](http://www.gov.scot)

Maritime and
Coastguard Agency



Maritime &
Coastguard
Agency

Vinu John
Maritime and Coastguard Agency
UK Technical Services – Navigation
105 Commercial Road
Southampton
SO15 1EG
www.gov.uk/mca

Emma Lees

Marine Licensing casework officer
Marine Directorate – Licensing Operation Team
Scottish Government, Marine Laboratory
375 Victoria Road, Aberdeen, AB11 9DB

22 January 2024

Dear Ms Lees

REQUEST FOR SCOPING OPINION UNDER THE ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2017 FROM ORBITAL MARINE POWER - WESTRAY TIDAL ARRAY - WESTRAY FIRTH, ORKNEY.

Thank you for your email dated 22 December 2023 requesting comments on the scoping report provided by Orbital Marine Power for the Westray Tidal Array in the Westray Firth, Orkney. The MCA welcomes the opportunity to provide comments under the above Environmental Impact Assessment Regulations, and we would comment as follows:

We note that the project is a commercial scale development with approximately 70 Orbital O2 surface turbines with an expected total capacity of 170MW and grid connected at the EMEC Fall of Warness test site which is immediately to the Southeast of the proposed array area. The project team and their navigation consultants presented this project to the MCA and other key Shipping and Navigation stakeholders in October 2023. MCA had raised concerns regarding the scoping boundary as it is a large project consisting of multiple surface turbines which may cause an unacceptably high risk to navigation and will severely restrict vessels from navigating through the Westray Firth. The project team clarified that a wide area has been considered for scoping to enable micro siting within the site to accommodate potential receptors such as shipping and navigation. There are lifeline ferry routes operated by Orkney Ferries which run between Kirkwall- Northern Isles. The Shipping and Navigation chapter of the Scoping Report (section 9.2.1) clearly identifies the Westray Firth as a constrained area from a navigation safety perspective. In addition to regular life-line ferry services, the area has fishing activities, recreational traffic and commercial vessels including occasional transits of large passenger vessels.

We also believe that the scoping report should have included clear assessment of baseline traffic in the area based on the 2019 AIS data referred to in Table 9-3 for stakeholders to make a clear assessment of the traffic pattern in the area. Figure 9-5 shows lifeline ferries and recreational traffic, but this image severely underestimates the density of traffic over a period of time. We note within the table 1-1 that the project has undertaken site- boundary amendments after consultation with Orkney Ferries, we would have expected these details to be included within the shipping and navigation chapter to understand the refinements made and assess the overall navigation safety.

We understand that the applicant intends to submit a s.36 application along with a marine license application. We would expect the project to carry out a Navigational Risk Assessment as per the current MCA guidance, MGN654. The NRA should be accompanied by a detailed MGN 654

Checklist which can be found at: <https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping>

The Environmental Impact Report should supply detail on the possible impact on navigational issues for both commercial and recreational craft, specifically:

- Collision Risk
- 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 vessels
- Risk controls including those appropriate for deployment of device testing.

As mentioned within table 9-5 we understand the applicant intends to carry out a full MGN-654 complaint traffic survey by visual, RADAR and AIS from shore-based centre. We note, the applicant also intends to use long term (at least 12 months) AIS data to capture seasonal variations in the vessel traffic patterns. Attention should be given to strategically important lifeline ferry routes and special consideration should be given to the adverse weather routing in the area.

The layout should be planned in such a way to ensure maximum clearance to any vessel navigating through the array area at all states of weather/ tide. The layout should also be compliant with any additional navigation safety and/or Search and Rescue requirements, as per MGN 654 Annex 5, this will be agreed at the approval stage.

We note that the applicant intends to carry out a cumulative impacts assessment as per table 9-4 of the scoping report. This assessment should include other renewable developments in the vicinity particularly the EMEC Fall of Warness Tidal test site and their planned expansion.

Attention should still be paid to cabling routes and where appropriate burial depth for which a Burial Protection Index study should be completed. If cable protection measures are required e.g., rock bags or concrete mattresses, the MCA would be willing to accept a 5% reduction in surrounding depths referenced to Chart Datum. This will be particularly relevant where depths are decreasing towards shore. We understand the applicant intends to grid connect within the EMEC- Fall of Warness test site.

We note that the Orbital O2 tidal devices will be a cylindrical surface structure with rotors which will be lowered below the surface while in operation. Suitable arrangements should be made to ensure the deployments remain secure to the seabed for the met-ocean conditions expected in the area, with a programme of regular inspection and maintenance of the works in place. MCA expects a Third-Party Verification (see HSE/MCA Regulatory expectations guidance on moorings for floating devices) of the mooring arrangements for all floating devices will be required prior to construction to provide assurance that the moorings are suitable for the expected metocean conditions at the location, this will be a part of the marine license conditions.

MGN 654 Annex 4 requires that hydrographic surveys should 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 report 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.

We are mostly content with Table 9-4. However, Impact on vessel routeing (including poor weather routeing) should be scoped into the EIA and NRA. We feel that it is important to consider vessel routing along with the cumulative effect of the EMEC Fall of Warness test site, as there is potential for a significant reduction in the available sea room which could seriously compromise safe navigation in the Westray Firth.

We would recommend the applicant to undertake a Hazard Identification workshop with all relevant navigation stakeholders and regular users in the area. This will help in preparing the Navigation Risk Assessment and Hazard Log. Decisions relating to further risk controls and mitigation measures should be agreed in consultation with other interested parties to determine whether the ALARP status has been met for each risk.

On the understanding that the Shipping and Navigation aspects are undertaken in accordance with MGN 654 and its annexes, along with a completed MGN checklist, MCA is likely to be content with the approach. However, we believe that the scoping boundary as it stands does not ensure adequate sea room for safe navigation in the Westray Firth and potential boundary amendments might be needed prior to the application stage.

[Redacted]

Vinu John,
Navigation Policy Advisor
UK Technical Services - Navigation

MD-SEDD



E: [Redacted]

Emma Lees
Marine Directorate Licensing Operations Team
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

19 January 2024

Westray Tidal Array – Scoping Consultation

Marine Directorate advisers have reviewed the request from MD-LOT and provide the following advice.

Commercial fisheries

MD-SEDD are content that commercial fisheries can be scoped out of the EIA following consultation with industry that has determined no fishing activity is taking place within the project area. The project area is located in waters 30m and greater in depth, whereas industry has indicated that creel fishers tend to use the shallower waters outside of the project area.

Physical environment / coastal processes

The Marine Directorate has reviewed the physical processes focusing on changes in tidal and water column processes.

MD-SEDD broadly agrees with the potential impacts outlined in Table 7-2, but advise that two potential impacts be scoped into the EIA: 1) Changes in suspended sediment



concentrations due to installation activities and 2) Changes to coastal morphology during operation.

Changes in suspended sediment concentrations due to installation activities:

Limited evidence is presented here to justify scoping this out at this early stage. There is the Wyre and Rousay Sounds NCMPS close to the site where significant deposition of sediment could have adverse impact on designated features (e.g. seabed substrate for maerl).

The Marine Directorate advise this be scoped into the EIA. MD-SEDD recommend a plume dispersal model forced by numerical hydrodynamic model output be used to demonstrate the quick dispersal of drill sediments and to determine any potential impact the nearby Wyre and Rousay Sounds NCMPS.

Changes to hydrodynamic, waves and sediment transport regimes:

It is critical to scope this into the EIA, as planned, as there is likely to be some degree of near-field changes in velocity, water elevation and wave field. Wave current interactions may also be an important consideration. MD-SEDD advise this is investigated using a high resolution hydrodynamic model (2D barotropic would most likely be sufficient) of the region, and scenarios with and without tidal stream energy extraction (e.g. representation of tidal stream turbine devices) should be conducted.

Changes to coastal morphology:

MD-SEDD advise the impact of changing tidal and wave fields on coastal morphology be scoped into the EIA. No evidence/citations are presented to justify that effects are likely to be “small scale and localised”. MD-SEDD advise there is likely to be some degree of flow acceleration around the array of tidal stream turbines. This would be limited in extent, but might result in faster flows close to the surrounding coastline. Similarly, potential changes to the wave regime could extend to the coastline.

Impacts to designated features:

This is important to scope in and MD-SEDD advise hydrodynamic modelling should be used to demonstrate there would be no adverse effect on the NCMPS designated features: namely the geomorphology of the seabed and impact on kelp and maerl bed including potential changes to their seabed substrate.

Cumulative impacts:



MD-SEDD advise interactions with the wider EMEC site are also considered in the assessment.

In section 7.1.2 MD SEDD advise that the proposed conceptual model is insufficient on its own for a development of this size (70x 2 MW turbines), and advise that some degree of numerical hydrodynamic modelling is performed. The numerical model should be able to assess the change in flow and wave fields, and wave current interactions, resulting from the installation of the tidal farm, and the cumulative impacts and interactions with the EMEC development. MD-SEDD advise that the model should also be used to assess the dispersal of drilled sediments. The model should ideally be able to resolve individual wakes to some degree, with individual turbines represented/parameterised in the model, although farm scale parameterisation could also be sufficient if well justified. Changes to coastal morphology could be conceptually modelled.

Yours sincerely,

Renewables and Ecology Team

Marine Directorate – Science, Evidence, Data and Digital

Ministry of Defence

Anna Shenton

From: [Redacted]
Sent: 15 January 2024 10:48
To: MD Marine Renewables
Cc: [Redacted]
Subject: 20240115 SCOP-0036 Scoping Opinion Westray Tidal Array, Orbital Marine Power - Westray Firth, Orkney
Attachments: 20240112-SCOP-0036-Scoping_report.pdf

Good morning Emma

Thank you for your email below regarding SCOP-0036 request for scoping opinion Orbital Marine Power - Westray Tidal Array, Westray Firth Orkney. After our review, I can confirm that the MOD has no objections regarding this activity.

Kind regards

Anne McGarva


Anne McGarva | Assistant Safeguarding Officer

Defence Infrastructure Organisation

Estates | Safeguarding

DIO Head Office | St George's House | DMS Whittington | Lichfield | Staffordshire | WS14 9PY

[Redacted]

 Please consider the environment before printing this e-mail

NatureScot

Emma Lees
Scottish Government
Marine laboratory
375 Victoria Road
Aberdeen
AB11 9DB

13 February 2024

Our ref: CNS REN TP Westray

Dear Emma,

SCOP-0036 - REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 AND MARINE LICENCE APPLICATIONS FOR WESTRAY TIDAL ARRAY - ORBITAL MARINE POWER

Thank you for consulting NatureScot on the scoping report to inform the Environmental Impact Assessment (EIA) as part of a future application to be submitted by Orbital Marine Power for the Westray Tidal Array, and for agreeing to extend the response deadline.

Our advice on the natural heritage interests to be addressed with the EIA Report is outlined below.

Policy context

Working within the context of a climate emergency and a biodiversity crisis, we seek to provide advice that is enabling and secures the right development in the right place with most benefit for climate change reduction and that which avoids damage, and where possible, achieves enhancement and restoration of biodiversity.

As a statutory consultee, NatureScot works in support of the Scottish Government's vision for a Blue Economy with its six outcomes acting as focal points to ensure the marine environment supports ecosystem health, improved livelihoods, economic prosperity, social inclusion and wellbeing. We provide advice in the spirit of Scottish Government's ambition and its aims to balance the promotion of the sustainable development of offshore renewable energy, whilst protecting and restoring our biodiversity.

Proposal

The proposed development is located in Westray Firth, Orkney and includes a project design envelope approach - as such we recommend recent Scottish Government guidance on this approach¹. In summary, the proposal comprises:

- Up to 70 floating tidal stream O2 devices, with a minimum 130 m separation;
- Inter-array / umbilical cables between devices;
- A multi-anchor catenary mooring system with the potential for devices to share anchors.
- Up to five export cables from the O2 devices to the EMEC Fall of Warness transmission infrastructure;
- Scour protection;
- Navigation markers as required; and
- Consent for an operational period of 25 years.

There are a number of elements of the project design, which have not yet been outlined, e.g. cable routes, offsite holding locations (wet storage), routes for related vessel traffic, as well as other elements that have not been fully explained. This has limited our ability to provide detailed advice for inclusion in the EIA Report. We request that as these details become available these are checked with MD-LOT to understand whether there are any required changes to the scoping opinion to ensure that the supporting information submitted with the application is as informed as possible. We request clarity on the following aspects:

- Section 1.3 of the scoping report highlights a region in the south of the Project area, which overlaps with development ambitions for the EMEC Fall of Warness tidal demonstration site, termed the 'Westray Potential Overlap Area'. Our understanding is that this area may be surrendered to EMEC but at present has been included within this proposal. We would be keen to understand the timescales for when this may be resolved and how it will be addressed if kept.
- We note the intention to connect to the National Grid at the EMEC facility. It is stated in Section 1.3 that the "Westray Tidal Array Section 36 application will only include the offshore infrastructure, comprising the array area and subtidal interconnector cable(s) between the Westray development and the EMEC Fall of Warness tidal demonstration site." It also states that the project "will connect Westray to EMEC Fall of Warness in the marine environment" - no further detail is provided. Therefore, it is not entirely clear exactly where the connection will be made and whether there may be impacts to the intertidal area, for example. We advise that it is made explicitly clear in the application and supporting EIA Report exactly what infrastructure consent is being applied for and where, so that potential impacts can be sufficiently assessed.
- Section 1.3 highlights, in relation to the Westray Tidal Array transmission connection, that EMEC are currently seeking the necessary consents to extend their site. Our understanding is that the anticipated application for the EMEC facility is to extend the capacity of the tidal demonstration site to 50 MW. Therefore, it also is not entirely clear how the generating

¹ <https://www.gov.scot/publications/guidance-applicants-using-design-envelope-applications-under-section-36-electricity-act-1989/>

capacity of 170 MW for this proposal will be accommodated. We are concerned that entire project requirements for Westray Tidal Array will not be addressed as one consent application with supporting information.

- We understand from Section 4.1 that any new onshore infrastructure (at the EMEC site) will be applied for as a separate planning application under the Town and Country Planning (Scotland) Act. Our assumption is that this would be by EMEC. However, the information around transmission of electricity generated by the proposal and the associated grid connection is not very clear and we advise this should be clearly set out in the EIA Report so that a whole project assessment can be undertaken.

Content of the Scoping Report

We are disappointed with the quality of this scoping report. The narrative provided on impact assessment methods and tools for a number of receptors is predominantly high level. Advice that we have provided through ongoing engagement has not been reflected within the scoping report. Therefore, we would reiterate the advice that we have previously given in pre-application discussions.

We also note the significant upscaling of the development size (from 24 to 70 devices) since the initial baseline methodology discussions.

Our advice on the historical environmental data that should be used for contextual information only has not been followed and no information is presented on methods that will be used to assess collision and displacement or cumulative impacts for ornithology. As such we are unable to provide advice on this due to the paucity of information provided.

This lack of detail means that our advice is not as detailed, project-specific and thus as informative as it could have been.

Assessment approach

The impacts of the proposed development on the receiving environment should consider effects from pre-construction activities as well as the construction, operation and maintenance, and decommissioning phases. We recommend the following aspects are considered further and included in the EIA Report.

Baseline

We advise that for some receptors, such as ornithology and benthic ecology, the site-specific baseline characterisation data will be insufficient to enable the applicants to undertake a robust impact assessment. We have provided recommendations and advice in meetings (13 June and 17 October 2023), however note that our advice has not always been followed or implemented in a timely manner. Further information and advice in relation this has been provided within the relevant appendices below.

Offsite holding locations

We note from Section 4.2.3 of the scoping report that the devices will be constructed onshore and held in offsite holding locations prior to being towed and installed within the Project area.

Depending on the location of these offsite holding areas, we highlight that there could be potential impacts to natural heritage receptors as well as other consenting requirements and this should be fully addressed within any application and supporting information.

Climate change and carbon costs

The impact of climate change effects should be considered, both in futureproofing the project design, particularly if landfall is required and any coastal infrastructure, as well as information on how certain climate stressors may work in combination with potential effects from the proposed tidal array. The EIA Report should also consider the carbon cost of the development (including supply chain) and to what extent this is offset through the production of green energy.

Habitats Regulations Appraisal (HRA)

An HRA Stage 1 LSE screening report has not been provided alongside the scoping report although it is noted in Section 5.3 that a separate HRA screening report has been prepared. Therefore, we advise the HRA screening report is provided for comment at the earliest opportunity, and in advance of the EIA Report in order to fully inform our HRA advice for this proposal. We note this as the scoping appears to be particularly light in relation to HRA.

Positive effects for biodiversity and nature inclusive design

We recommend consideration of positive effects for biodiversity as well as nature inclusive design aspects at an early stage. We acknowledge that, whilst not currently policy within the marine environment, these aspects form part of our ability to address both the climate and biodiversity crises and as such we encourage applicants to consider this as part of their application.

Mitigation

The intention to adopt embedded mitigation measures as described in Section 4.5 is welcomed although we note the measures listed do not include any mitigation to reduce impacts to natural heritage receptors.

Mitigation measures can often be most successful when they are considered from the outset of the project rather than as a late stage solution. Therefore, in some cases, mitigation can be incorporated as designed in measures that are truly embedded to avoid / reduce impacts. Although, please note the EIA Report must clearly articulate those mitigation measures that are embedded and relied upon for the purposes of the assessment and those that are informed by the EIA (or HRA) and are necessary to avoid or reduce predicted significant adverse environmental effects.

Natural Heritage interests to be considered

We provide advice as detailed below within receptor-specific technical appendices for key natural heritage interests to be considered in the EIA Report:

- Advice on marine physical and coastal processes is provided in **Appendix A**
- Advice on benthic ecology is provided in **Appendix B**
- Advice on fish and shellfish ecology is provided in **Appendix C**

- Advice on marine mammals and megafauna is provided in **Appendix D**
- Advice on ornithology is provided in **Appendix E**

For Seascape, Landscape and Visual Impact Assessment (SLVIA) - we note that there are no nationally protected landscapes (National Scenic Areas or Wild Land Areas) in proximity to the Project area and therefore we do not intend to offer detailed advice on this receptor. However, we highlight that very little information has been provided on night-time lighting requirements such as number, intensity, nature (flashing / stationary), colour etc. Therefore, we advise potential impacts from night-time lighting should be assessed further and an outline Lighting and Marking Plan provided within the EIA.

Further information and advice

We hope this advice is of assistance to help inform the scoping opinion, noting that there may be aspects where some further engagement is required to assist in undertaking the EIA.

Please contact me in the first instance for any further advice, using the contact details below and copying to our marine energy mailbox - marineenergy@nature.scot.

Yours sincerely,

Kim McEwen

Marine Sustainability Adviser - Sustainable Coasts and Seas

[Redacted]

APPENDIX A - WESTRAY TIDAL ARRAY - MARINE PHYSICAL AND COASTAL PROCESSES

Marine physical and coastal processes are considered in Section 7 of the scoping report.

Study area

We are content with the study area proposed in Section 7.1.1 and shown in Figure 7-1, which comprises a 25 km buffer around the Project area. This is based on a maximum spring tidal excursion extent of up to 25 km.

Baseline characterisation

We agree that the relevant data and information sources listed in Table 7-1 have been identified. A summary of the site-specific data is detailed in Section 7.1.2 and we are content that this along with the publicly available data sources will provide sufficient baseline information.

As noted in the cover letter, it isn't entirely clear from the scoping report where the project will connect to the transmission infrastructure. Therefore, we advise that it is made explicitly clear in the application and supporting EIA Report exactly what infrastructure consent is being applied for and where, including any assessment.

Potential impacts

The impacts that are to be scoped in and out of the assessment are detailed in Table 7-2 and we are content with those proposed.

Approach to assessment

The proposed assessment strategy in Section 7.1.5 is welcome in acknowledging potential effects both on 'physical process' receptors, and on receptors in other EIA topics. However, there is potential confusion in the process described.

The scoping report does not consider all potential 'physical process' receptors - only protected areas (Section 7.1.3.6). We recommend that bedform field(s) outwith the Wyre and Rousay Sounds Nature Conservation Marine Protected Area (ncMPA) but within the Fair Isle Strait Marine Process Bedforms Area, notably sand waves in the Westray Firth, should be considered as 'physical process' receptor(s). This is because the Fair Isle Strait Area identifies geodiversity of potential national importance.

In addition, we recommend that the two-fold strategy detailed in Section 7.1.5 should effectively be three-fold:

- Assess the magnitude (only) of changes to physical-process pathways.
- Combine that magnitude with the sensitivity of the two 'physical process' receptors (the ncMPA and other bedform fields (as advised above) to assess the significance of impacts on them.
- In other EIA topics, combine that magnitude with the sensitivity of other types of receptors to help assess the significance of impacts on them.

In Table 7-3, the proposed assessment approach for the impact ‘changes to hydrodynamics and sediment transport regimes’ is unclear and appears to be supplemented by the paragraph preceding the table, which proposes using “outputs from existing regional modelling”. On this basis, we are unable to agree that new numerical modelling can be ruled out at this stage. We advise that the applicant consults us on a more detailed statement of the proposed assessment methods, referring explicitly to all existing studies (both pre-application assessment and post-installation monitoring) that will be used to inform the assessment.

Cumulative impacts

We are content with the proposed assessment for cumulative effects as outlined in Section 6.3.4.

Mitigation and monitoring

No mitigation or monitoring has been proposed in relation to marine physical and coastal processes.

Transboundary impacts

We agree that there are unlikely to be any transboundary / cross border effects on marine physical and coastal processes.

APPENDIX B - WESTRAY TIDAL ARRAY - BENTHIC ECOLOGY

Benthic ecology is considered in Section 8.1 of the scoping report.

Study area

We are content with the extended study area as described in Section 8.1.1 and shown in Figure 8-1, which includes the Project area plus a buffer of up to 25 km.

Baseline characterisation

Key data sources

We note the intention to use a combination of desk-based review of relevant data and existing site-specific geophysical data and benthic data from the adjacent EMEC Fall of Warness tidal demonstration site.

It is stated in the scoping report that the benthic survey will be undertaken post-consent. However, we advise that a benthic survey is undertaken to inform the baseline to support the application and this should be undertaken prior to application submission so the survey results can inform the EIA for both this receptor and fish and shellfish (refer to Appendix C). We recommend that the applicant consults us on the survey methodology in advance.

Please note that all relevant data used to support the proposal should be contained with the EIA Report.

Table 8-1 provides a summary of key data sources - we advise the inclusion of:

- NatureScot Commissioned Report 765: Seagrass (*Zostera*) beds in Orkney 2015
<https://www.nature.scot/doc/naturescot-commissioned-report-765-seagrass-zostera-beds-orkney>
- Biological analyses of seabed imagery from within and around Marine Protected Areas in Orkney, Shetland, Inner Sound, and Islay and Jura 2019
<https://data.marine.gov.scot/dataset/biological-analyses-seabed-imagery-within-and-around-marine-protected-areas-orkney-shetland>

Previous surveys show the habitats in this location are likely to be rocky and mixed sediment substrates typical of tidally-scoured areas. The proposal is located 0.75 km from the Wyre and Rousay Sounds ncMPA designated for maerl beds, kelp and seaweed communities on sublittoral sediment and Marine Geomorphology of the Scottish Shelf Seabed. A very small portion of the ncMPA falls inside the extended study area. We highlight the seagrass beds in Orkney report cited above which makes mention of seagrass growing on maerl beds in this area.

We also note that data from Marine Directorate's Blue carbon audit of Orkney waters (Porter *et al.* 2020) suggests that there is moderate possibility that flame shell and seagrass beds are present along Egilsay and Eday coasts facing the Westray Firth.

With the exception of a possible record of some scattered maerl debris (*Lithothamnion corallioides* or *Phymatolithon calcareum*) (ScotRenewables, 2011) and kelp beds there have been no records of

any benthic species listed as Priority Marine Features (PMFs) (NatureScot, 2014; Tyler-Walters *et al.* 2016) on either the rocky or sandy substrates in the Project area.

The Project area may support PMF habitats ‘kelp beds’ and ‘tide-swept algal communities’. Based on available NMPi layers (accessed January 2024) there are no records of these PMF habitats or seagrass beds within the proposed Project area. However, Shucksmith *et al.* 2019 makes reference to these habitats in this area.

Therefore, taking the above into account there is the possibility that PMF habitats may occur within the Project area and we advise this requires further consideration and assessment.

Potential impacts

The impacts that are to be scoped in and out of the assessment are detailed in Table 8-2. We note that it is intended to scope out ‘colonisation of infrastructure’ - we disagree that this impact should be scoped out at this stage as it is unclear what infrastructure protection will be used and whether it will change the existing substrate to allow a larger surface area for colonisation.

In addition, we advise that the ‘introduction of invasive non-native species (INNS)’ should be scoped in to the EIA. It is noted in Table 8-2 that an INNS Management Plan may be produced, as part of the CEMP (Construction Environment Management Plan), to ensure that all required mitigation measures are in place so that the potential for the introduction of INNS are minimised, which we welcome. However, it is not just the movement of vessels that may pose a risk of introducing marine INNS but any structure in the marine environment has the possibility to act as habitat for marine INNS. Therefore, we expect harbour and marine renewable developments to consider this in their assessments.

Approach to assessment

We note the intention to undertake a targeted geophysical and benthic survey post-consent to inform the foundation design and micro-siting. As advised above, recent evidence indicates that there may be PMFs present in the Project area. Therefore, we advise that site-specific benthic survey work should be undertaken to inform the EIA as part of the application submission.

Cumulative impacts

We are content with the approach to the cumulative impact assessment as outlined in Table 8-3.

Mitigation and monitoring

No mitigation or monitoring has been proposed in relation to benthic ecology.

Transboundary impacts

We agree that there are unlikely to be any transboundary / cross border effects on benthic interests.

APPENDIX C - WESTRAY TIDAL ARRAY - FISH AND SHELLFISH ECOLOGY

Fish and shellfish ecology has been considered in Section 8.2 of the scoping report.

Study area

The study area selected for this receptor is a 50 km buffer around the Project area - no rationale has been provided for this and we would usually expect the study area to be based around suspended sediment concentration (SSC) or underwater noise as these impacts are likely to extend the greatest distance. However, we do not anticipate either of those impacts to extend beyond 50 km and this is therefore a sufficient study area.

Baseline characterisation

Key data sources

We note the intention to use a combination of desk-based review of relevant literature and existing data from the nearby Fall of Warness tidal demonstration site to inform impacts to fish and shellfish ecology.

A summary of data sources are listed in Table 8-4 and as well as those listed we highlight two additional relevant data sources below:

- ScotMER - Developing essential fish habitat maps: report
<https://www.gov.scot/publications/developing-essential-fish-habitat-maps-fish-shellfish-species-scotland-report/>
- NatureScot Guidance Note: Assessing collision risk between underwater turbines and marine wildlife 2016
<https://www.nature.scot/doc/assessing-collision-risk-between-underwater-turbines-and-marine-wildlife>

Baseline

It is noted in Section 8.2.3 that the baseline will be assessed from commercial fisheries catch data and the State of the Environment Baseline Description (Orkney Islands Council, 2020), with no site-specific survey being undertaken. However, as noted in our advice above for benthic ecology (Appendix B), we advise that the benthic survey should be undertaken prior to application submission - the results of this survey should also be used to help inform the fish and shellfish assessment, including consideration of PMFs. For example, if the seabed within the Project area comprises suitable habitat for common skate complex (which includes flapper skate (*Dipturus intermedius*) and blue skate (*D. flossada*)), then further investigation would be required to determine if a nursery ground is present.

Spawning and nursery grounds

A summary of the spawning and nursery grounds with respect to the Project area and Westray Firth is summarised in Table 8-6. We note that this information has been identified using Coull *et al.* 1998 and Ellis *et al.* 2014, which is a very broad brush approach and the grounds identified in

these documents cover vast areas of sea. Therefore, we expect benthic and site-specific information to be used to contribute to the understanding of potential species and spawning areas present.

Although juveniles and adults of most marine fish species can move away from disturbance (SSC and underwater noise for example), eggs, larvae and those species with limited mobility such as sandeel cannot flee and are therefore at greater risk. Thus, we expect that the benthic survey results to be used to assess whether or not the seabed is suitable for sandeel (all life phases), herring eggs, cod spawning and common skate complex. These species are particularly vulnerable as part / all of their lifecycle is associated with the seabed, are sensitive to impacts from underwater noise / SSC or are on the ICUN red list. Our understanding from high level information provided in the benthic ecology section is that the seabed is likely to be bedrock or boulders. If this is the case then it is unlikely that sandeel or spawning herring will be present. However, it may be suitable grounds for common skate complex egg laying, confirmation of which would be required.

Migratory fish

Section 8.2.3.3 is limited to describing a previous report on the understanding of migratory fish movement within Orkney waters, with Malcolm *et al.* 2010 now considered to be out of date and focussed solely on Atlantic salmon.

We advise that for diadromous fish species there is limited knowledge of distribution and behaviour of these species in the marine environment. For example, the precise migration routes of adult and juvenile Atlantic salmon or direction taken by migrating adult European eels is not fully known.

The ScotMER evidence map² process for diadromous fish confirms the evidence gaps, particularly with respect to spatial and temporal distribution as well as uncertainty around migration routes and connectivity to protected sites. The ScotMER process is an important vehicle for helping to address these evidence gaps and uncertainties. The ScotMER project ‘Diadromous Fish in the Context of Offshore Wind – Review of Current Knowledge & Future Research’ is due to be published shortly.

Our current advice based on evidence available to us, is that it is not possible for us to carry out an assessment of diadromous fish to the level required under HRA. We therefore advise that diadromous fish species should be assessed through EIA only and not through HRA.

Potential impacts

The impacts that are to be scoped in and out of the assessment are detailed in Table 8-7 and we are generally content with those proposed, subject to our comments below.

² <https://www.gov.scot/publications/diadromous-fish-specialist-receptor-group/> – published 26 January 2023

We note that ‘increased suspended sediment / turbidity’ is proposed to be scoped out and having reviewed the information provided within the fish and shellfish section we do not agree that sufficient justification has been provided for this impact to be scoped out at this stage.

We highlight that collision risk with tidal devices is not only limited to larger species such as basking shark. Thus, we advise that diadromous fish are also scoped in and assessed in respect of collision risk.

Approach to assessment

We note in Section 8.2.5 that no site-specific fish and shellfish surveys will be undertaken for the proposal and that the assessment of impacts to this receptor will be informed by outputs from the marine physical and coastal processes and benthic ecology assessments. We are content with this, subject to:

- our comments above regarding the benthic survey and in relation to assessment for sandeel, herring spawning grounds and common skate complex eggs; and
- our knowledge of diadromous / migratory fish species are limited in respect of movements within Orkney waters. European eel, sea trout and Atlantic salmon are PMFs and all thought to be present in Orkney’s waters, and should be considered in the assessment with respect to their life history stages and potential impact routes including collision risk.

Table 8-8 summarises the impact assessment strategy for fish and shellfish - as above the potential impact ‘effects on herring and sand eel populations from disturbance to spawning grounds’ should also include the common skate complex.

For the potential impact ‘underwater noise and vibrations from installation methods and operation of devices’ reference should be made to Popper *et al.* 2014. In addition, the clinking and clunking of mooring chains should also be included for assessment not just the thrum of the turbine device.

In terms of potential collision with tidal turbine devices, as above, we advise this impact is also scoped in for Atlantic salmon to be assessed quantitatively and for other diadromous species to be assessed qualitatively. Our guidance note on ‘Assessing collision risk between underwater turbines and marine wildlife’ will assist³.

We also advise that in addition to assessing impacts to fish in relation to the potential impact ‘habitat creation and fish aggregation effect’ - the assessment should include information on potential ecosystem effects for marine mammals and birds that may be attracted to higher densities of prey.

In relation to the potential impact ‘effects of electromagnetic fields on elasmobranchs..’ we highlight that in addition to the cables on the seabed potentially affecting benthic species, there will be a number of dynamic inter-array cables (each device could have up to 15 dynamic inter-array cables and each cable could be up to 500 m in length, equating to a total of 525 km) in the

³ <https://www.nature.scot/doc/assessing-collision-risk-between-underwater-turbines-and-marine-wildlife>

water column. Therefore, this will present additional risk to pelagic fish, including migratory fish in particular that use electromagnetic field (EMF) for navigation. This must be considered within the EIA.

Cumulative impacts

We are content with the approach outlined in relation to cumulative impact assessment in Section 6.3.4.

Mitigation and monitoring

No mitigation or monitoring has been proposed in relation to fish and shellfish ecology.

Transboundary impacts

We agree that there are unlikely to be any transboundary / cross border effects for fish and shellfish.

APPENDIX D - WESTRAY TIDAL ARRAY - MARINE MAMMALS AND MEGAFUNA

Marine mammals and megafauna are considered in Section 8.3 of the scoping report.

Study area

The study area encompasses the proposed Project area plus a 50 km buffer as detailed in Section 8.3.1 and Figure 8-4, which we are content with.

Baseline characterisation

Key data sources

We note the intention to use a combination of desk-based review of relevant data, existing site-specific data as well as newly commissioned site-specific surveys to inform the baseline.

A summary of data sources are listed in Table 8-9 and in addition to those listed we highlight further relevant data sources below:

- Orkney Marine Mammal Research Initiative (OMMRI) <https://ommri.org/>
- NatureScot Research Report 419: Abundance and behaviour of cetaceans and basking sharks in the Pentland Firth and Orkney Waters 2011
<https://www.nature.scot/doc/naturescot-research-report-419-abundance-and-behaviour-cetaceans-and-basking-sharks-pentland-firth>
- NatureScot Commissioned Report 572: Surveys of harbour (common) and grey seals in Orkney, the north coast of Scotland, the Moray Firth and the Firth of Tay in August 2012
<https://www.nature.scot/doc/naturescot-commissioned-report-572-surveys-harbour-common-and-grey-seals-orkney-north-coast-scotland>
- NatureScot Research Report 1005: Aerial survey of harbour (*Phoca vitulina*) and grey seals (*Halichoerus grypus*) in Scotland in 2016: Orkney and the North Coast, the Moray Firth and part of East Scotland <https://www.nature.scot/doc/naturescot-research-report-1005-aerial-survey-harbour-phoca-vitulina-and-grey-seals-halichoerus>
- NatureScot Research Report 1256 - Aerial surveys of seals in Scotland during the harbour seal moult, 2016-2019 <https://www.nature.scot/doc/naturescot-research-report-1256-aerial-surveys-seals-scotland-during-harbour-seal-moult-2016-2019>
- Note that Carter *et al.* 2020 has been updated in Carter *et al.* 2022 (Carter MID, Boehme L, Cronin MA, Duck CD, Grecian WJ, Hastie GD, Jessopp M, Matthiopoulos J, McConnell BJ, Miller DL, Morris CD, Moss SEW, Thompson D, Thompson PM and Russell DJF (2022) Sympatric Seals, Satellite Tracking and Protected Areas: Habitat-Based Distribution Estimates for Conservation and Management <https://www.frontiersin.org/articles/10.3389/fmars.2022.875869/full>)

Baseline

The proposed list of marine mammal species to be considered further within the EIA are detailed in Section 8.3.3.2 and include grey seal, harbour seal, harbour porpoise, white-beaked dolphin, killer whale and minke whale. We are generally content with this list but advise that if other species are recorded in the ongoing 2023/24 surveys then they should also be included within the

assessment. In addition, we advise common dolphin should be included as these are now regularly recorded around Orkney.

We note that SCANS and the NBN Atlas has been used to inform presence of cetaceans. SCANS surveys do not cover inshore waters well and only provide a snapshot for one day in summer. The NBN Atlas provides information on some records but not all. Therefore, we advise that a better source for local data is the OMMRI, local records centre or through recording schemes such as the Whale and Dolphin Conservation Shorewatch and Sea Watch. For example, the scoping report states that “killer whales, although recorded in low numbers in both SCANS III and IV surveys are occasionally reported around Orkney Islands (NBN Atlas, 2023)” this is inaccurate as they are regularly recorded around Orkney.

Section 8.4.2.2 notes that the ongoing ornithology and marine mammal survey that commenced in April 2023 is proposed to last for one year and includes Passive Acoustic Monitoring (PAM) survey. However, we note that the PAM survey has not been successful during the winter months due to a variety of reasons including vessel noise.

Potential impacts

The potential impacts proposed to be scoped in and out of the assessment are detailed in Table 8-10. It is noted that ‘collision risk with vessels’ has been scoped out for marine mammals but has been scoped in for basking shark. At this stage, we advise that this impact should be scoped in for both marine mammals and basking shark, as until further detail is provided on the number and type of vessel movements we are unable to rule out this risk, particularly to larger animals such as minke whale.

We also advise that ‘disturbance due to underwater sound’ should be scoped in for basking shark until further information is provided on likely noise sources. Similarly we advise ‘barrier effects from physical presence of devices’ should also be scoped in for basking shark. It states in Table 8-2 in relation to barrier effects that “Importance will depend upon the spatial occupancy of the channel by tidal devices (in three dimensions), physical characteristics of the devices, the importance of the vicinity for passage of basking sharks and the likelihood of disturbance from operational noise of turbines”. This suggests that there are still a large number of unknowns and that there could be impacts. Therefore, both barrier effects and underwater noise should be scoped in for basking shark.

Regarding potential impacts from EMF, we advise that this impact should be scoped in for further assessment for direct effects to basking shark and for potential effects on prey for marine mammals (indirect effect). As noted in Section 4.2.4, each device could have up to 15 dynamic inter-array cables and each cable could be up to 500 m in length, equating to a total of 525 km of dynamic cabling. Therefore, at this stage we advise that impacts from EMF should be included and considered further in the EIA.

Approach to assessment

We generally agree with the proposed assessment approach as detailed in Section 8.3.5. It is stated in Table 8-12 that for assessing collision risk with operational devices - the number of

animals will be put into the context of the relevant Management Unit (MU) and where appropriate Potential Biological Removal (PBR) limits. As there is connectivity to two seal Special Areas of Conservation (SAC), impacts will also need to be considered in the context of the SAC population.

In addition, we would also expect that for species such as killer whale and Risso's dolphin that reference is made to the regional population. For example, through photo ID catalogues for numbers of animals that are more likely to be present in this area.

Cumulative impacts

We are content with the approach outlined in relation to cumulative impact assessment in Section 6.3.4.

Mitigation and monitoring

No reference to mitigation or monitoring has been made in relation to marine mammals and megafauna - we would have expected some indication of potential mitigation strategies at this stage.

Transboundary impacts

We agree that there are unlikely to be transboundary impacts in relation to marine mammals and megafauna.

APPENDIX E - WESTRAY TIDAL ARRAY - ORNITHOLOGY

Ornithology is considered in Section 8.4 of the scoping report.

Study area

The study area for ornithology encompasses the project area plus a 50 km buffer zone. We advise the use of foraging ranges to inform an appropriate theoretical range of connectivity with this being further refined through the DAS results as well as the HRA screening report.

Baseline characterisation

Key data sources

We note the intention to use a combination of desk-based review of relevant data, existing site-specific data as well as newly commissioned site-specific bird surveys to inform the baseline.

Site-specific surveys

It is intimated in Section 8.4.2.1 that the European Seabirds At Sea (ESAS) data collected at the site between 2012 and 2014 will be used to inform the baseline characterisation for the EIA. We advised during pre-application discussions that the 2012-2014 data should be used for historical context only. Therefore, we do not support the use of this data for quantitative analyses due to the age of this data (10 years old). We also advised in pre-application discussions that a minimum of one year baseline characterisation data will be required to inform the ornithological impact assessment.

Section 8.4.2.2 notes that the ongoing ornithology and marine mammal survey that commenced in April 2023 is proposed to last for one year and includes (for ornithology):

- Visual transect surveys of seabirds using the ESAS survey method; and
- Focal watches of selected diving seabird species.

It is noted from pre-application engagement that during the non-breeding season very few focal watch data has been collected and it is likely that the diving behaviour input values for modelling will be sourced from wider telemetry studies.

Our understanding of the baseline survey data collected is that it will not be the full 12 months as proposed noting that there have been a number of issues in relation to the data collection. These include a missed September 2023 survey; incomplete December 2023 survey; changes to survey design from December 2023 with the addition and extension of transect lines and no information presented on tidal state. It is also intended to exclude the March 2024 survey from the assessment due to application submission timescales.

Therefore, we advise that additional data collection will be required to enable a robust EIA and HRA. In determining additional data collection requirements, it is critical that statistical advice is sought to ensure that sufficient temporal coverage is obtained prior to application submission.

Secondary data sources

The additional data sources listed in Table 8-13 are appropriate for helping to inform the proposal. Please note that 'Birds of Conservation Concern 5' is likely to be updated for seabirds within application submission timelines.

Baseline

Protected sites

Section 8.4.3.1.2 states that Woodward *et al.* 2019 will be used to inform connectivity in relation to HRA screening, which we support. However, for the EIA it appears that only protected sites within 30 km of the project area are being considered. We do not support this approach to determine connectivity and it does not follow our published guidance⁴⁵.

We do not agree that scoping should be based on the 30 km buffer - it will not inform the list of sites to be included at application stage. This approach results in a list which include species such as short-eared owl and hen harrier, which could easily be scoped out due to their ecology and impact pathways. It also does not include the Scapa Flow Special Protection Area (SPA) despite being within the arbitrary 30 km buffer. As such we have not considered the list of SPAs further at this stage as it is incomplete.

The scoping report also notes that puffins from SPA colonies are within connectivity of the project, but that puffins within the Westray Firth are more likely to be from non-SPA colonies. This may be the case, but the application must consider impacts to SPA colonies within connectivity (as defined by Woodward *et al.* 2019). For all species, Likely Significant Effect (LSE) must be determined by considering connectivity and impact pathways. The ratio of non-SPA birds to SPA birds must not be considered at the stage of determining LSE but will be dealt with through the apportionment of impacts.

Therefore, we advise that the Woodward *et al.* 2019 Mean Max +1 standard deviation foraging ranges are used to determine connectivity for both the EIA and HRA. We also advise that, due to the location of the proposal, there will be exceptions to the Woodward *et al.* 2019 foraging ranges as detailed in our guidance⁴ - these have been extracted into Annex A below.

In determining connectivity with marine SPAs, the scoping report refers to our previous advice provided to EMEC for the Fall of Warness tidal demonstration site; that features of marine SPAs do not have connectivity to developments operating outwith the SPA boundary. Our advice with respect to connectivity with marine SPAs has changed since 2022 and is detailed in our guidance³. We advise that this is used to inform connectivity of marine SPAs and that to determine LSE, impact pathways need to be considered within 15 km of any marine SPA.

⁴ <https://www.nature.scot/doc/guidance-note-3-guidance-support-offshore-wind-applications-marine-birds-identifying-theoretical>

⁵ <https://www.nature.scot/doc/guidance-note-4-guidance-support-offshore-wind-applications-ornithology-determining-connectivity>

In addition, consideration is required for connectivity between the North Orkney and Scapa Flow SPAs for red-throated diver, great northern diver and Slavonian grebe qualifying features.

Connectivity with respect to red-throated diver foraging within the marine SPAs is addressed through consideration of location of terrestrial breeding sites within a 10 km radius. Depending on location, a development in one SPA could impact breeding divers that may also potentially use the second SPA for foraging. For example, breeding red-throated divers in Orkney Mainland Moors SPA, may potentially forage within parts of both the Scapa Flow and North Orkney SPAs.

For great northern diver and Slavonian grebe, when assessing potential impacts arising from a development proposal, if LSE has been concluded, focus the Appropriate Assessment on the nearest SPA first. If a conclusion can be reached of no Adverse Effect on Site Integrity (AESI) then it is safe to conclude the same for the other SPA. However, if there is a conclusion of potential AESI at the nearest SPA, consideration may also be required for the other site. This will depend on the nature and location of the proposal and on the basis for conclusion of potential AESI. In particular, if AESI arises because a proposal may impact Conservation Objectives 2b or 2c, which relate to distributions of birds within the SPA and to their supporting habitats respectively, there is no direct connectivity of impact to the other site. However, where there is potential to undermine Conservation Objective 2a, as consequence of either direct or indirect mortality of birds using the SPA, then impact on birds that may potentially use both sites should be considered.

Seabird densities

Seabird densities presented in Table 8-15 are based on the ESAS data from 2012-2014. The scoping report states that this data is likely to accurately reflect the current situation in the project area. Our understanding is that the 2012-2014 and 2023/24 survey areas are not directly equivalent but it is noted that the comparison presented takes this into account. The 2012-2014 data has been presented in place of the ongoing survey (2023/24) results in order to scope likely species for inclusion into the EIA. Although the species recorded appear to be similar, as noted above, we advise that for the application the 2023/24 data should be used to inform the baseline characterisation and that the 2012-2014 data is used for context (i.e. qualitatively) only.

It is noted in Section 8.4.3.2.1 in estimating the densities of species, different parameters have been used depending on the species. For example, auk densities are based on birds on the water, whilst gull densities are based on birds on the water and flying. It is stated that this is in keeping with the information of greatest relevance for impact assessment. It is possible that this is due to implications of disturbance from the boat based transects. However, this is not specified and no evidence is presented to justify this. For the application, we will require all the information to be presented - including total bird numbers, birds flying and birds on the water for all species. We will also require clear justification for any decisions which exclude data in calculating densities.

Furthermore, we will expect details of how distance correction has been calculated and how availability bias has been accounted for. For further advice in relation to these issues, we recommend consulting our guidance note on 'Assessing collision risk between underwater

turbines and marine wildlife'⁶. A clear and detailed description of any analyses undertaken should be presented in the EIA.

Potential impacts

The impacts proposed to be scoped in and out of the EIA are presented in Table 8-16 of the scoping report and we broadly agree with the impacts scoped in for assessment. However, we advise that impacts from artificial lighting should be scoped in for further assessment. It is stated in Table 8-16 that 'vessel and marker buoy navigation lighting is not likely to be bright enough to cause a disturbance response of concern'. However, this contradicts information detailed in Section 8.4.3.2.2 regarding the effects of lighting on storm petrels. Petrels and shearwaters are known to be attracted to lights and require consideration in the EIA with respect to the lighting on the devices and the potential for attraction to the turbines.

Approach to assessment

It is noted in Section 8.4.5 that it is intended to use three years' worth of ESAS data from 2012 to 2014. As advised above, although we note that the applicant's state there is similarity between the two surveys, we would not advise data older than 5 years is used to inform quantitative baseline assessment. Data from the ESAS 2012-2014 survey could be used as context information in the application.

The strategy for assessment is summarised in Table 8-17, however this is very light touch and focusses largely on whether the assessment will be qualitative or quantitative rather than methods or tools for assessment. The scoping report states an intention to follow NatureScot guidance, which we endorse.

Although scoped in to the assessment, no information is provided on the methods which will be used to assess collision and displacement. As such we cannot provide advice on the approach to impact assessment.

It is noted in Table 8-17 that underwater collision risk modelling (CRM) will be carried out for the four breeding auk species (puffin, guillemot, razorbill and black guillemot), great northern diver and European shag. We would advise that in addition to these species we would expect that great cormorant and red-throated diver are included in the CRM if they are detected in significant numbers in the ongoing site-specific survey. We also wish to understand which method and model of collision risk modelling will be undertaken.

Cumulative impacts

Our understanding from the information provided is that it is intended to assess cumulative impacts with the EMEC Fall of Warness tidal demonstration site. We agree this is appropriate. However, no methods for assessment have been proposed.

Mitigation and monitoring

⁶ NatureScot (2016) - [Assessing collision risk between underwater turbines and marine wildlife](#).

General embedded mitigation is presented in Section 4.5. However, no mitigation or monitoring has been proposed in relation to ornithology.

Transboundary impacts

The report proposes to scope out transboundary impacts on the basis that the project is c. 150 km from the UK EEZ boundary and there is no potential for LSE. We agree that transboundary impacts are unlikely to be significant due to the distance from the proposal.

Annex A - Guidance on assessing connectivity to seabird colony SPAs

We advise mean max + 1SD from Woodward et al (2019) should be used to screen in connectivity to colony SPAs with the following exceptions:

1. Tracking on Fair Isle showed foraging distances are greater than those of all other colonies for both common **guillemot and razorbill**. This may relate to poor prey availability during the study. However, trends for seabirds in the Northern Isles indicate this may be becoming a more frequent occurrence. We therefore recommend for common guillemot and razorbill:
 - Use of mean max+1SD, including data from Fair Isle for all **Northern Isles** designated sites.
 - For all designated sites south of the Pentland Firth (i.e. excluding the Northern Isles) use of mean max+1SD discounting Fair Isle values.

2. **For gannet** we recommend using mean max +1SD for all colonies without site specific maximum values. However, for the SPA colonies where site specific evidence exceeds this value (509.4km), namely:
 - Forth Islands (Bass Rock),
 - Grassholm and
 - St Kilda
 then the site-specific maximum should also be used.

3. For species with insufficient data to calculate mean max +1SD then the closest metric is to be used in the following order of preference:
 - Mean Max (MM),
 - Max,
 - Mean.

Specifically, the exceptions for gannet, guillemot and razorbill are:

Species	Exception Applied	Recommended Foraging Range (km)	Metric
Northern gannet	Forth Islands SPA	590	Max
	Grassholm SPA	516.7	Max
	St Kilda SPA	709	Max
Common guillemot	All Northern Isles SPAs	153.7	MM+SD
Razorbill	All Northern Isles SPAs	164.6	MM+SD

Northern Lighthouse Board



Northern Lighthouse Board

84 George Street
Edinburgh EH2 3DA

Tel: 0131 473 3100
Fax: 0131 220 2093

Website: www.nlb.org.uk
[Redacted]

Your Ref: SCOP-0036
Our Ref: AL/OPS/ML/O6_19_240

Licensing Operations Team – Marine Directorate
Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

4 January 2024

**REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND)
REGULATIONS 2017 & REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT
ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney

Thank you for your e-mail correspondence dated 22nd December 2023 relating to the Environmental Impact Assessment (EIA) Scoping Report submitted by **Orbital Marine Power** for the proposed development of a tidal energy array at Westray Firth, Orkney.

It is noted that the proposed array will consist of up to 70 devices, and electricity generated by the array will be exported via subsea cable to existing shore based transmission infrastructure at the adjacent EMEC Fall of Warness site.

Northern Lighthouse Board also note the commitment within the Report (Section 4.5.1 (Shipping & Navigation Mitigation)) to comply with MGN 654 and its annexes where applicable, and to install navigation lighting and marking across both the construction and Operations and Maintenance phases of the project.

NLB also wish to place an emphasis on the importance of acknowledging the cumulative impacts (section 6) of the project, with particular reference to plans by the applicant to install a number of similar devices within the adjacent EMEC Fall of Warness test site.

NLB do acknowledge that the applicant has engaged with a number of navigational safety stakeholders, including Orkney Ferries and Orkney Harbours, and have adjusted the planned array area on the basis of these discussions. NLB would request that the applicant continues to engage with these stakeholders as the project develops.

NLB respects your privacy and is committed to protecting your personal data.
To find out more, please see our Privacy Notice at www.nlb.org.uk/legal-notices/

Northern Lighthouse Board do have concerns that a final layout will not be provided until the post-consent stage. The layout of the devices is of particular importance to the lighting and marking of array as the boundary devices will host the Aids to Navigation, as buoyage is particularly difficult to maintain within these high tidal-flow areas. NLB request that the applicant continues to engage with NLB with regard to the layout and lighting and marking solutions.

Northern Lighthouse Board have no objection to the content of the Scoping Report, and no suggestions for additional content.

Yours sincerely

[Redacted]

Peter Douglas
Navigation Manager

Orkney Islands Council

General Comments

Orkney Islands Regional Marine Plan (OIRMP)

It should be noted that Orkney Islands Council (OIC) are preparing the Orkney Islands Regional Marine Plan (OIRMP) which is scheduled to be deposited for public consultation, as a consultation draft, in Spring/Summer 2024.

When the Westray Tidal Array development proposal is submitted and determined for the various statutory consents, the OIRMP is likely to be adopted. Authorisation or enforcement decisions made by a public authority need to be made in accordance with the appropriate marine plan(s), unless relevant considerations indicate otherwise.

The Marine Licensing (Consultees) (Scotland) Order 2011

As the delegate for regional marine planning functions under section 12(1) of the Marine (Scotland) Act 2010, OIC are a statutory consultee on marine licence applications located wholly or partly within the Orkney Islands marine region.

Scoping Report Comments

7. Physical Environment

7.1 Marine Physical and Coastal Processes

7.2 Marine Water and Sediment Quality

7.3 Air Quality

7.4 Airborne Noise

No comments to add on Scoping Report Section 7 beyond what is included in the Scoping Report.

8. Biological Environment

8.1 Benthic Ecology

Survey work on the benthic impacts should be able to inform any required mitigation for the benthic ecology and Priority Marine Features (PMFs) e.g. micro-siting of moorings, that may be required. The options for how this mitigation will be implemented should be outlined in the EIAR. Advice should be sought from NatureScot to ensure that the proposal does not result in unacceptable impacts on the benthic environment, in accordance with NMP Gen Policy 9.

It should be noted that NatureScot's Geodatabase of Marine Features (GeMS) has records of the PMFs Kelp Beds and Maerl Beds to the south of the development site, meaning there is an increased possibility for undiscovered PMFs within the development site itself.

In addition to their biodiversity value, many PMFs are features which, over time, can accumulate and store significant quantities of carbon. It is recommended that the developers contact the International Centre for Island Technology (ICIT), Stromness, if PMFs are present, as they hold a variety of data, including species and Blue Carbon assessments.

In Table 8-1, further sources of data that could be used to inform the EIA in relation to biodiversity impacts, especially benthic impacts, include:

- *Engaging the Fishing Industry in Marine Environmental Survey and Monitoring Scottish Marine and Freshwater Science Vol 12 No 3*¹, and;
- *Biological analyses of seabed imagery from within and around Marine Protected Areas in Orkney, Shetland, Inner Sound, and Islay and Jura in 2019. Scottish Marine and Freshwater Science Vol 12 No 2*²

Both of those listed above include surveyed areas within the proposed development sight.

For SPA related impacts, see Ornithology section below.

8.2 Fish and Shellfish Ecology

The project development area has been identified as a potential migratory route for multiple species of commercially and ecologically important fish, including Atlantic Salmon. Other important species may also be present, such as Sandeels and trout. Any impacts on sandeels identified should be linked to potential impacts on ornithology.

The dynamic nature of fish populations can present challenges in accurate population assessments, and it is agreed that it would not be proportionate to require surveys of fish species. That said, benthic ecology assessments could be used to inform fish and shellfish data gaps where possible.

8.3 Marine Mammals and Megafauna

The EIA will have to assess and address the likely effects on seals. Seals are vulnerable to disturbance when on land, and especially during the pupping season when pups risk becoming separated from their mothers. The study area includes a number of designated seal haulouts which can be viewed on the National Marine Plan interactive map at <https://marinescotland.atkinsgeospatial.com/nmpi/>

Cetaceans are frequently seen in Orkney's coastal waters. An assessment should therefore be undertaken of the likely effects of the structure installation and operation on cetaceans, to determine any EPS licensing requirement. Further information on cetaceans and licensing is available on the Marine Scotland website at <https://www.gov.scot/policies/marine-and-fisheries-licensing/marine-licensing/>

¹ <https://data.marine.gov.scot/dataset/engaging-fishing-industry-marine-environmental-survey-and-monitoring/resource/f4376162-2f49>

² <https://data.marine.gov.scot/dataset/biological-analyses-seabed-imagery-within-and-around-marine-protected-areas-orkney-0>

Basking sharks are also often seen in Orkney's marine region. An assessment should be undertaken of the likely effects of the proposal on this species and, where necessary, mitigation measures should be identified which would avoid or minimise any adverse impacts.

8.4 Ornithology

The site of the proposed quay development is located within relatively close proximity to several Special Protection Areas, including the North Orkney SPA and Rousay SPA where there may be connectivity and the potential for impacts upon their qualifying features.

The development site is also approximately 14 km from the Orkney Mainland Moors SPA where the qualifying features include breeding red-throated diver. This species nests on the banks of the SPA's upland lochans but feeds in the marine environment. Advice should be sought from NatureScot as to whether this site falls within the latest foraging range estimates.

The ongoing bird survey, which commenced in April 2023, should continue in line with guidance provided by NatureScot, to obtain updated information about the numbers and distribution of species which could be affected by the development proposal.

The findings of these surveys should inform an assessment of the likely significant effects of all stages of the development on all SPA features with connectivity to the proposed development. Consideration should also be given to the capacity for species to move to alternative areas to avoid disturbance. The conclusions of the assessment should be used to help shape the final development proposal and inform mitigation plans.

The EIAR should ensure that impacts on benthic and pelagic species that form a key food supply for key bird species are included.

9. Human Environment

9.1 Commercial Fisheries

Local fishing interests/potential fishers fishing within or transiting through the proposed development site should be consulted to determine whether there will be any significant effects:

- on commercial fishing opportunities, taking into account seasonality and the year-round operation of the affected fishery.
- on nursery, spawning and feeding areas for commercially fished species, and associated habitats and species.
- due to the displacement, including impacts on fish stocks, the wider environment, the use of fuel by fishing vessels and the associated socio-economic costs to fishers and their communities.

- safe access to marine space including the seabed, water column and sea surface, and navigational access to and from landfall areas, e.g. ports, harbours or slipways, that support fishing vessels.
- on the economic, and where appropriate, cultural importance of fishing, in particular to fragile island communities.

9.2 Shipping and Navigation

As acknowledged in the EIA Scoping report, this development is close to Orkney Ferries ferry route and therefore the Harbour Authority and Orkney Ferries should be consulted in relation to ferry options, other marine traffic and the completion of the Navigational Risk Assessment.

The EIAR should also consider the increases in marine traffic directly associated with the construction, operations, and decommission phases of the development (e.g. effects on ferry traffic, other marine traffic or potential disturbance of birds and other protected species)

9.3 Archaeology and Cultural Heritage

For comments on 9.3 Archaeology and Cultural Heritage, please see comments at the end of the document from the Islands Archaeologist

9.4 Seascape, Landscape and Visual Impacts

It is noted that changes to landscape and coastal character are proposed to be scoped out. Given the nature and scale of the proposal, with up to 70 brightly coloured devices being deployed (that will be lit for navigational safety purposes), there is potential for landscape/coastal character effects that would need to be assessed. NatureScot should advise on any requirement for a SLVIA to assess landscape/coastal character effects. It should be noted that there are core paths nearby, including the St Magnus Way pilgrimage route, as well as the development being highly visible from a regular ferry route.

For landscape and visual impacts on historic environment assets, please see 9.3 Archaeology and Cultural Heritage.

9.5 Local Communities and Socio-economics

The proposed development is of a very significant scale (up to 70 turbines) and is likely to have significant effects on:

- job creation and change in employment levels (direct impacts, displacement etc)
- changes in GVA levels
- the utilisation of local pier and harbour infrastructure
- the housing market in Orkney for existing residents and the provision of tourist accommodation (particularly during the construction phase)

A socio-economic impact assessment should consider effects during the construction, operation and decommissioning phases of the development.

OIC aims to maximise opportunities for local economic development and benefits in Orkney. This includes, for example, maximising sustainable employment benefits and creating skilled employment in local communities. This also includes maximising opportunities to support local businesses, supply chains and research and development. The EIAR for the proposed tidal development should therefore assess these socio-economic effects and the associated effects on local housing market, infrastructure and services.

The EIAR also needs to include further details of the local pier infrastructure that will be used through the construction, operation, and decommissioning phases, particularly to consider whether the selected pier infrastructure has the capacity to support the anticipated activities. Details should also be included in relation to pre-deployment storage locations of the devices and the location of local shallow bays/pontoon facilities to be used for maintenance operations.

9.6 Tourism and Recreation and 9.7 Other Sea Users

Due to the marine area being particularly high energy, the number of recreational activities taking place here is thought to be limited. This is supported by the Orkney Marine and Coastal Recreation Survey³. Developers may wish to consult with the sailing clubs in the area who have marked that they sail within the region, however it is acknowledged that the sailing data is very broad. This Marine and Coastal Recreation Survey is due to be updated in Spring/Summer 2024 to provide more detailed location data, and the latest version should be used at the time of the EIA development, along with the other sources outlined within the Scoping Report.

The development will also be visible from the nearby adopted Core Path and St Magnus Way footpath. See landscape and visual impacts for further information.

9.8 Military and; 9.9 Aviation and Radar

No comment

Other Comments

Though not specifically scoped into the EIA, it is recommended that the developer be advised on any potential natural heritage enhancement requirements in accordance with National Marine Plan Gen 9 Natural Heritage

³ Orkney Marine and Coastal Recreation Survey; <https://www.orkney.gov.uk/Service-Directory/D/marine-and-coastal-recreation-survey-report.htm>

Islands Archaeologist Comments

These comments relate to the Archaeology and Cultural Heritage chapter and related information in the Westray Tidal Array Environmental Impact Assessment: Scoping Report, DOCUMENT A-100780-S01-A-REPT-002.

Historic environment baseline:

- In terms of key data sources (section 9.3.2), it is unclear why Xodus/Orbital has consulted Aberdeenshire HER, and the Highland HER (the latter is authored by The Highland Council, not OIC), neither of which cover the Westray Firth;
- Whilst the report identifies what marine historic environment assets could be within the Westray Tidal Array Area, it scopes out of the EIA any potential impacts on seabed heritage assets. The scoping report states that the marine geophysical survey in 2012/2014 of the former Westray AfL recorded predominantly bedrock and boulders with localised areas of sand and gravel veneer, without providing the evidence to support this. The report also states that geophysical survey data taken in April 2014 and June 2023 requires review (i.e. this has not yet been done) in order to be able to identify seabed anomalies to avoid (Section 9.3.5). Section 9.3.5 states that no further geophysical surveys are proposed in advance of the Project application. No evidence is presented of what type of surveys were conducted in the past, to what specifications, details of the archaeological review of the data and results and identification of anomalies that the report states will be avoided. Therefore, no hard evidence is provided on which to base the scoping out of seabed heritage assets from the EIA.
- Table 6-1 lists existing April 2014 and June 2023 geophysical survey. In section 9.3.5 it is proposed that the acquired geophysical information is reviewed for maritime archaeological or aircraft wreckage to avoid any potential impact. This review is necessary before the potential for such impacts can be scoped out. It is expected that such reviews are conducted by appropriately experienced marine archaeologists.
- The report states that geophysical, ROV and diver surveys of the nearby EMEC Fall of Warness tidal demonstration site indicate the expansive exposures of bedrock, with an absence of mobile sands or gravels. However, such surveys were specific to the area they covered and are not transferrable to the Westray Tidal Array Area, since the nature of the seabed can change over short distances.
- Table 9-8 listing Scheduled Monuments is incorrect, e.g. the identification of SM 1356, which is a standing stone, as a church; the identification of SM 90137 as a chambered cairn, when it is a church. (The use of CANMORE as a noun synonymous with 'site' in 9.3.3.3 is a novel grammatical development.). This erroneous information appears to be used as the baseline for scoping out impacts on the setting of these monuments. This potential impact cannot be scoped out on this basis.
- There are also geographical errors, such as in 9.3.3.3 where Kili Holm is 'linked north of Eday' when it is located north of Egilsay.

Basic omissions and mistakes in the baseline evidence presented in the scoping report mean that this cannot be used as the basis for agreeing to excluding impacts on historic environment assets from the scope of the EIA.

Impacts:

- Based on the baseline evidence presented, direct impacts to heritage assets cannot be scoped out of the EIA, and should be scoped in.
- It is agreed that indirect operational effects related to marine physical processes can be scoped out of the EIA.
- Effects on the setting and thus the significance of heritage assets should be scoped into the EIA. The setting assessment should be based on appropriate guidance, such as [Managing Change in the Historic Environment: Setting | HES | History](#). Using the effects on setting identified by EMEC Fall of Warness EIA is not applicable to the Westray Project, not least due to the much larger scale of the Westray Tidal Array Project, with seventy 88m long devices proposed.
- It is suggested that in combination impacts are scoped into the EIA, especially on setting and effects on the seabed from export cables, in relation to the Faray Wind Farm and the proposed Neven Point Wind Farm on Eday, which is in the pre-planning stage.

Therefore, the conclusion that all potential impacts of the Project on archaeology and cultural heritage can be scoped out of an EIA (Section 9.3.4) is not accepted.

Mitigation:

- Appropriate mitigations should be included in the scope of the EIA, whether as embedded mitigations or site-specific mitigations.
- The scope of any proposed mitigations in the EIA should relate to an accurate historic baseline with supporting evidence such as marine geophysical survey review.
- Any WSI and PAD formulated as part of a mitigation strategy should be based on the procedures in the 2014 Offshore Renewables Protocol for Archaeological Discoveries (PAD) prepared for the Crown Estate by Wessex Archaeology and utilise Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects 2021, prepared for the Crown Estate by Wessex Archaeology, many parts of which are relevant to other marine renewables.

The scope of the EIA should include potential impacts on the historic environment as outlined above. The historic environment EIA should follow accepted guidelines, including HES and NatureScot's 2018 Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland.

Royal Yachting Association

22 January 2024

Case officer
Licensing Operations Team, Marine Directorate
Scottish Government
Marine Laboratory,
375 Victoria Road,
Aberdeen,
AB11 9DB
MD.MarineRenewables@gov.scot

Dear Emma,

SCOP-0036 – Orbital Marine Power – Westray Tidal Array – Westray Firth, Orkney

I have read the above scoping report on behalf of RYA Scotland and agree with what is written. In particular I note that Shipping and Navigation will be scoped in and that there will be a Navigational Risk Assessment. We will want to contribute to this.

I agree with the embedded mitigations listed in section 4.5.1 and make the following comments.

- Promulgation of information about the array is important, particularly as many recreational boaters come from outside the UK. In fact, it is probably helpful to divide recreational boaters into residents and visitors and have separate promulgation strategies for each group. Note that there can be a significant time lag between data being sent to the UKHO and it appearing on the electronic charts used by recreational boaters.
- The location of the array should be provided to the Clyde Cruising Club (sailingdirections@clyde.org) for incorporation into the Orkney and Shetland volume of their *CCC Sailing Directions and Anchorages* book. The current edition was published in 2020 with the next due about 2025 although electronic updates are issued each spring.
- I recognize the need for safety zones but their size will need to be discussed at the NRA to avoid the normal navigational channels being dangerously squeezed.

In addition to the data sources mentioned, there is useful information in the CCC Sailing Directions mentioned above. Also, although it is now more than 10 years old, there is still relevant information in the Shipping Study of the Pentland Firth and Orkney Waters. Orkney Marinas will have up-to-date information on marine visitor numbers. The UK Atlas of Recreational Boating is currently being updated by the RYA although AIS heat-maps for recreational boats are available on NMPi. I feel that there is already enough information to show where recreational craft pass.

It will be important to consider an ERCoP for the array as it is unclear exactly what the risks are to a disabled vessel being swept towards the devices. This is another matter for discussion at the NRA.

I note that the impact on vessel routing has been scoped out. However, I feel that the NRA needs to take place before it can be scoped out for recreational craft in poor weather given that such vessels are lower powered or sail powered compared to most commercial craft.

Yours sincerely,

[Redacted]

Dr G. Russell FCIEEM(retd) FRMetS
Planning and Environment Officer, RYA Scotland

Sanday Community Council

Anna Shenton

From: [Redacted]
Sent: 27 January 2024 22:12
To: MD Marine Renewables
Subject: Re: SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney – Consultation on Request for Scoping Opinion – Response Required by 22 January 2024 - Nil response
Attachments: image003.png

Hello Emma,

Sorry that I never got back to you.

The Sanday Community Council members never replied with any comments for me to pass on.

Kind regards
Gail

Scottish Water

Friday, 29 December 2023



Marine Licensing
375 Victoria Road

Aberdeen

Development Operations
The Bridge
Buchanan Gate Business Park
Cumbernauld Road
Stepps
Glasgow
G33 6FB

Development Operations
[Redacted]

[Redacted]

www.scottishwater.co.uk



Dear Customer,

Orbital Marine Power, Westray Tidal Array, Westray Firth, Orkney, KW17 2QD
Planning Ref: SCOP-0036
Our Ref: DSCAS-0100857-W55
Proposal: Request for Scoping Opinion

Please quote our reference in all future correspondence

Audit of Proposal

Scottish Water has no objection to this planning application; however, the applicant should be aware that this does not confirm that the proposed development can currently be serviced. Please read the following carefully as there may be further action required. Scottish Water would advise the following:

Drinking Water Protected Areas

A review of our records indicates that there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.

Surface Water

For reasons of sustainability and to protect our customers from potential future sewer flooding, Scottish Water will not accept any surface water connections into our combined sewer system.

There may be limited exceptional circumstances where we would allow such a connection for brownfield sites only, however this will require significant justification from the customer taking account of various factors including legal, physical, and technical challenges.

In order to avoid costs and delays where a surface water discharge to our combined sewer system is anticipated, the developer should contact Scottish Water at the earliest opportunity with strong evidence to support the intended drainage plan prior to making a connection request. We will assess this evidence in a robust manner and provide a decision that reflects the best option from environmental and customer perspectives.

General notes:

- ▶ Scottish Water asset plans can be obtained from our appointed asset plan providers:
 - ▶ Site Investigation Services (UK) Ltd
 - ▶ Tel: 0333 123 1223
 - ▶ Email: sw@sisplan.co.uk
 - ▶ www.sisplan.co.uk

I trust the above is acceptable however if you require any further information regarding this matter please contact me on **0800 389 0379** or via the e-mail address below or at planningconsultations@scottishwater.co.uk.

Yours sincerely,

Ruth Kerr.

Development Services Analyst

[Redacted]

Scottish Water Disclaimer:

"It is important to note that the information on any such plan provided on Scottish Water's infrastructure, is for indicative purposes only and its accuracy cannot be relied upon. When the exact location and the nature of the infrastructure on the plan is a material requirement then you should undertake an appropriate site investigation to confirm its actual position in the ground and to determine if it is suitable for its intended purpose. By using the plan you agree that Scottish Water will not be liable for any loss, damage or costs caused by relying upon it or from carrying out any such site investigation."

SEPA

Anna Shenton

From: Planning.North <Planning.North@sepa.org.uk>
Sent: 04 January 2024 11:56
To: MD Marine Renewables
Subject: PCS-20000024 SEPA Response to SCOP-0036

Categories: Saved in eRDM
Objective: -1

OFFICIAL

To Whom It May Concern

**Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017
SCOP-0036 - Orbital Marine Power - Westray Tidal Array
Westray Firth, Orkney**

Thank you for the above consultation. Based on the information provided, it appears that this consultation relates only to the proposed applications for the offshore infrastructure elements and therefore falls below the thresholds for which SEPA provide site specific advice. Please refer to our standing advice and other guidance which is available on our [website](#). In addition, please also refer to our SEPA standing advice for the Department for Business, Energy and Industrial Strategy and Marine Scotland on marine consultations available [here](#).

If there is a significant site-specific issue, not addressed by our guidance or other information provided on our website, with which you would want our advice, then please reconsult us highlighting the issue in question and we will try our best to assist.

I trust these comments are of assistance - please do not hesitate to contact me if you require any further information.

Kind regards

Nicki Dunn

Senior Planning Officer

Disclaimer: This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it

should not be assumed that there is no impact associated with that issue. For planning applications, if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our [planning pages](#).

OFFICIAL

Scottish Fishermen's Federation



Our Ref: FH-WTAOE/24-0001

Your Ref: SCOP-0036

Scottish Fishermen's Federation
24 Rubislaw Terrace
Aberdeen, AB10 1XE
Scotland UK

[Redacted]

E-mail: MD.MarineRenewables@gov.scot
5th February 2024

www.sff.co.uk

Dear Emma,

SFF Response on Westray Tidal Array EIA Scoping Consultation

This response to the scoping request is presented by the Scottish Fishermen's Federation on behalf of the 450 plus fishing vessels in membership of its constituent associations, the Anglo Scottish Fishermen's Association, Fife Fishermen's Association, Fishing Vessel Agents and Owners Association, Mallaig & North West Fishermen's Association, Orkney Fisheries Association, Scottish Pelagic Fishermen's Association, the Scottish White Fish Producer's Association and Shetland Fishermen's Association.

SFF note from section '4.2. Design Envelope Approach' that the Project Design Envelop (PDE) approach (also known as the 'Rochdale Envelope Approach') will be adopted for the Environmental Impact Assessment (EIA) Report. Therefore, the following comments are based on existing details provided in this Scoping Report and further comments will be provided in due course once the Project's designed is finalised.

Decommissioning

SFF notes from section 4.4, Decommissioning' (p27) that, it is likely the decommissioning work will be largely a reverse of the construction processes, with potential for cable protection and scour protection to be left in situ where they have become colonised, subject to navigational safety. Being concerned of fishing vessels, SFF would like to see all development related infrastructures are recovered/removed to shore followed by overtrawl sweeps (or seabed sweeps using chain mats or fishing gears) to ensure the seabed is restored to its pre-development condition post-decommissioning, and it is safe for fishing operations to fully resume in the area.

Ch. 8.2 Fish and Shellfish Ecology

Following are SFF's comments on this section:

- SFF notes from Table 8-7, (p83) that developer has only scoped in the 'Effects on herring and sand eel populations from disturbance to spawning grounds'. However, the report, in section '8.2.3.1 Spawning and nursery grounds' (p78), confirms that other commercially important

Members:

Anglo Scottish Fishermen's Association · Fife Fishermen's Association · Fishing Vessel Agents & Owners Association (Scotland) Ltd ·
Mallaig & North-West Fishermen's Association Ltd · Orkney Fisheries Association · Scottish Pelagic Fishermen's Association Ltd ·
The Scottish White Fish Producers' Association Ltd · Shetland Fishermen's Association

VAT Reg No: 605 096 748

fish spawning and nursery ground exist within the project site. The Report states, “anglerfish is the only identified species with high intensity nursery ground within the Project area and the wider 47E7 ICES rectangle. Other fish species, saithe and sprat, have nursery grounds within the Project area.” Therefore, SFF would like to see the effects of development on other commercially important fish species is also scoped in.

- SFF notes from Table 8-7 (p83) that the developer has only scoped in the ‘Effects of Electromagnetic fields on Elasmobranchs & potential barrier effects to fish and shellfish populations due to presence of tidal devices’. SFF would like to see the ‘EMF impacts to benthic invertebrates due to thermal emissions from subsea electrical cables’ is also scoped in since any temperature change in the invertebrate’s habitat would have adverse effects on their behaviour and increase their mortality rate. Furthermore, given the lack of scientific proofs that reject adverse effects of EMF and cable heat on fish, shellfish, and invertebrates, SFF suggests that precautionary measures to be taken while proceeding with offshore tidal energy development.
- As the development sits in fish spawning and nursery ground, SFF would suggest that any construction activities should be scheduled outwith the fish and shellfish spawning and nursery periods/seasons to avoid any detrimental effects on the relevant fish and shellfish species.
- The data for the baseline studies seem to be dated. While we welcome historical data to gain a broader image of the activities within the proposed site, having recent data would provide a more accurate prediction of the likely impacts.

Ch. 9.2 Shipping and Navigation

SFF welcomes the proposed ‘Shipping and navigation mitigation’ measures under section 4.5.1 (p28). In addition, we propose the developer to abide by the ColReg too.

In conclusion, SFF stresses that our primary concern is protecting the rights of fishermen to safely undertake their trade, and this is the cornerstone of our response. Our position is that fishing activities should continue unaffected and unharmed post-development. If fishermen impacted are to be denied the right to earn their living, we could not support the development of any proposal for a tidal energy.

Best regards
[Redacted]

Mohammad Fahim Hashimi
Offshore Energy Policy Manager
Scottish Fishermen’s Federation

Stronsay Community
Council

Anna Shenton

From: [Redacted]
Sent: 26 January 2024 11:33
To: MD Marine Renewables
Subject: Re: SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney – Consultation on Request for Scoping Opinion – Response Required by 22 January 2024 - Nil response

Categories: Saved in eRDM

Good Morning Emma,

Thank you for your email.

Details of the consultation were forwarded to Community Council members for consideration. No responses were received so you are correct in assuming a 'nil return ' from Stronsay Community Council. My apologies for not having notified you of this earlier.

Kind regards,
Colin

Transport Scotland

Emma Lees
Marine Scotland
Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

Your ref:
SCOP-0036

Our ref:
GB01T19K05

Date:
16/01/2024

md.marinerenewables@gov.scot

Dear Sirs,

**REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT)
(SCOTLAND) REGULATIONS 2017**

**REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT
ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**SCOP-0036 - ORBITAL MARINE POWER - WESTRAY TIDAL ARRAY - WESTRAY FIRTH,
ORKNEY**

With reference to your recent correspondence on the above development, we acknowledge receipt of the Scoping Report prepared by Xodus Group in support of the above development.

This information has been passed to SYSTRA Limited for review in their capacity as Term Consultants to Transport Scotland – Roads Directorate. Based on the review undertaken, Transport Scotland would provide the following comments.

Proposed Development

The proposed development comprises the installation, operation and decommissioning of around 70 Orbital O2 style tidal turbine devices at Westray Firth, Orkney, with a total generating capacity of 170 MW. We note that the scoping opinion request and subsequent Section 36 consent application solely pertains to the offshore elements of the project.

Given the above and that there are no trunk roads on the Orkney Islands, Transport Scotland is satisfied that the proposed Tidal Array will have no impact on the trunk road network, and we can confirm that no further information is required in this regard.

I trust that the above is satisfactory but should you wish to discuss in greater detail, please do not hesitate to contact me or alternatively, Alan DeVenny at SYSTRA's Glasgow Office can assist on 0141 343 9636.

Yours faithfully

[Redacted]

Gerard McPhillips

**Transport Scotland
Roads Directorate**

cc Alan DeVenny – SYSTRA Ltd.

UK Chamber of Shipping

Anna Shenton

From: [Redacted]
Sent: 03 January 2024 11:52
To: MD Marine Renewables
Subject: RE: SCOP-0036 - Orbital Marine Power - Westray Tidal Array - Westray Firth, Orkney – Consultation on Request for Scoping Opinion – Response Required by 22 January 2024

Categories: Saved in eRDM
Objective: -1

Dear Marine Scotland,

The UK Chamber of Shipping welcomes the opportunity to respond to the Scoping Report for Westray Tidal Array in Orkney.

The Chamber notes the Scoping Report does not pose any questions to stakeholders as is commonplace, so has utilised those from Buchan Wind Farm (amended as necessary) as a template for its response.

- Do you agree that the relevant guidance and data sources (including surveys) upon which the assessment should be based have been identified?
 - The Chamber wishes to see the following:
 - At least 10 years of both MAIB and RNLI accident data
 - A full year of AIS data analysed along with the MGN 654 compliant 2 x 14 day seasonal survey data with AIS, radar and visual survey
- Do you agree with the proposed shipping and navigation study area and that it is sufficient to capture the relevant impacts?
 - No, the project’s statement for a study area, of “potential for a buffer of up to three nautical miles around the Project” is unclear and doesn’t not provide certainty and guarantee as to its size. The Chamber wishes to see a firm commitment for a study area of at least 3nm. The study area shown in Figure 9-4 shows a study area in km rather than nm, which is further unhelpful.
- Do you agree that all of the impacts which will be assessed within the NRA have been identified?
 - No, the Chamber disagrees with the scoping out of “Impact on vessel routeing (including poor weather routeing)” for any or all phases as the project has the potential for significant impact to lifeline ferry services and to state that “expected that the re-routing and increased steaming times will be minimal”, without provision of evidence or layout is incorrect. This is particularly apparent given the MCA and UK Chamber of Shipping both raised navigational safety concerns during their stakeholder meeting on 20/10/23 with the developers.
 - The Chamber disagrees with the justification for scoping out of impact of UKC and snagging risk for decommissioning as during the process of decommissioning these risks will remain and will only be removed once decommissioning has been complete.
- Do you agree with the proposed methodological approach to the NRA and EIA (including impact assessment)?
 - As industry standard however the Chamber fails to see any reference to study of transboundary impact which should be included.

- Do you agree that the outlined embedded mitigation measures are appropriate and likely to sufficiently mitigate potential risks and/or impacts?
 - The Chamber does not see any proposed mitigation measures, which is a safety concern.
- Do you agree that appropriate consultees been identified?
 - Those listed within Table 9-3 are correct, however the engagement with the Chamber has been minimal and shown little to no analysis of vessel traffic through the area. The Chamber would further wish to see commercial regular runners/operators who transit the area be included as a stakeholder group for consultation at the NRA stage.
- Do you agree with the proposed approach to considering cumulative impacts?
 - The Chamber does not see an approach considered, which raises further navigational safety concerns.

The Chamber trusts these comments are of good use and would be happy to provide further detail to Marine Scotland or the developer where appropriate.

Yours faithfully,
Robert

Robert Merrylees
Policy Manager (Safety & Nautical) & Analyst

UK Chamber of Shipping
30 Park Street, London, SE1 9EQ

[Redacted]

www.ukchamberofshipping.com



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