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Strategic Environmental Assessment of Wave energy technologies (SEA Wave)

European Maritime and Fisheries Fund (EMFF)

Progress Report

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1 Progress of work plan in the covered period

1.1 General progress:

Summarise the objectives and the achievements, deviations, important problems and difficulties met.

The SEA Wave project consortium met for the project kick-off meeting on the 29th November. It was a fruitful meeting with detailed discussions regarding the logistics of the monitoring campaigns and data management strategy. During the initial few months of the project, the project's Quality Plan for Project Management was developed by EMEC; the plan acts as a handbook for partners, regarding the general principles of the project consortium. Following the development of the project's Risk Register, partners reviewed identified risks and assessed appropriates and added risk controls to mitigate identified risks. The Risk Register will remain a live deliverable throughout the project. Following the initial kick-off meeting, the project team have met on a several occasions to discuss progress against project objectives, deliverables and review project risks.

In order to identify and prioritise research aims within SEA Wave, a call for evidence was issued by Aquatera to key stakeholders. The aim of this call was to identify the remaining knowledge gaps and consenting risks that exist for the industry and build upon the work already completed within the Offshore Renewables Joint Industry Programme (ORJIP) for Ocean Energy Forward Look and the OES Annex IV's State of the Science report. In order to complete a critical analysis of mitigation, monitoring and management measures, a comprehensive list of measures were presented to a targeted group of stakeholders which were invited to evidence pros and cons and lessons learnt from using the measures. The knowledge and lesson learnt from this exercise is presented in the Critical Analysis report and will be used in the development of the environmental monitoring strategies for this project. Considerable stakeholder engagement has taken place in order to identify and validate the findings. In order begin shaping the SEA Wave Steering Group, EMEC presented the SEA Wave project to the ORJIP OE Steering Group in February to develop support for the project and identify the most appropriate mechanism for the Steering Group and reduce the likelihood of stakeholder fatigue.

The Universities of Exeter and Plymouth have been preparing for the 2019 survey campaigns. This has involved identifying appropriate vessels. Pre-owned survey equipment has undergone maintenance and refinement in readiness for survey campaigns. Analysis protocols are under development to support tasks within WP4. Exeter and Plymouth Universities have met with developers such as CorPower to discuss the feasibility of the mounting monitoring equipment on their respective devices. Such discussions have involved careful consideration of cabling and maintenance requirements as well as ensuring redundancy in the system. Device mounted equipment has been designed and fabricated for incorporation onto the Wello WEC 2, this includes a camera and cabling. Wello WEC 2 is due to be towed to EMEC test sites shortly following successful completion of fabrication at the shipyard. Ocean Energy are researching the possibility of accessing data feeds, from the monitoring work being completed around their device in US Navy Test Site in Hawaii, following successful deployment in the coming months.

Hidromod have completed an evaluation of the legacy data and platform from the SOWFIA project to incorporate findings regarding data management from SOWFIA into SEA Wave. A review of EU recommendations on data management and the findings from the COLUMBUS project has been completed to ensure the Data Management Platform developed through SEA Wave is compliant. Partners agreed to the development of a Data Management Platform that is common with the WESE project, to ensure consistency of approach. The platform will aggregate data from the SOWFIA, SEA Wave and WESE projects, this will involve the migration of the SOWFIA legacy infrastructure to the newly designed platform. The design of the Data Management Platform will be developed to particularly handle the refined data products produced by the universities of Exeter and Plymouth. It has been necessary to develop guidelines on data collection, structuring and metadata in order to support the design and development of the Data Management Platform. SOWFIA Data Platform users will be contacted to understand if there are happy to be included as a contact for the platform, this will allow an initial group of informed end users to have access imminently.

Following the project kick-off meeting, a press release was published which was widely picked up by media and on social media. A Communication and Dissemination Plan has been developed to ensure consistency in the dissemination of the learning gained from the SEA Wave project and to demonstrate the industry-wide benefits of the outcomes. This has involved the development of a project logo and brand guidelines to ensure the SEA Wave project is recognisable and the EMFF funding source is appropriately identified. Project partners have contributed to the development of a website, (www.seawave-emff.eu) which will continually improve over the lifetime of the project, supporting the dissemination of the project outputs to a wider audience. The SEA Wave

project was presented by the University of Plymouth at the 12th International Temperate Reef Symposium in Hong Kong on the 9th January 2019. Plymouth University also provided an overview of the SEA Wave project at the Wembury Marine Centre, UK, on 11th April 2019.

1.2 Progress on the project against initial general and specific objectives:

Compare the activities planned (based on the Grant Agreement and/or the previous report) to the progress made, by specific objective and according the agreed work plan in the initial proposal (Annex I of the Grant Agreement); list achieved deliverables and identify partners involved, including their roles; describe major subcontractors and other stakeholders involved.

The following table summarises progress to date, end of Month 6, on each of the project objectives.

Objective	Status	Progress
Gap analysis to support targeted collection campaigns	Underway	Call for evidence issued to key stakeholders and developers to identify research priorities. Collated data collected by previous projects such as SOWFIA and previous deployments at EMEC.
Statistical modelling framework for range of technologies	Soon to commence	Initial discussions underway to understand feasibility of analysing data collected using device mounted equipment.
Data dissemination strategy	Underway	Data Platform designed to allow seamless integration with EU Data sharing Platforms for accessibility to data.
Engagement with EU regulatory platforms	Underway	An overarching presentation regarding the project was provided to ORJIP OE Steering Group and press release issued to network.
Prototype a systematic environmental monitoring process	Under development	Completed critical review of monitoring methodologies used by industry to date, pros/cons and lessons learnt recorded.
Employ multiple monitoring methodologies	Under development	Reviewed feasibility of device mounted equipment for both floating and seabed mounted device. Completed initial refinement work on existing equipment.
Implementation of innovative research programme	Under development	Identification of key research challenges/gaps completed. Highlighted methodologies used previously that have experienced issues.
Project outcomes fed into consenting procedures	Soon to commence	Identified stakeholder group to feed into the best practice guidance and consenting procedures.

A number of deliverables have been completed during this reporting period, these are summaries below.

- D.1.1 - Quality Plan for Project Management – EMEC (led), all partners review
- D.1.2 - Full Risk Register – EMEC (led), all partners review
- D.1.3 - Data Management Plan – Hidromod (led), Exeter University, Plymouth University & EMEC contributed
- D.1.4 – Progress Report – EMEC (led), all partners contributed
- D.2.1 – Knowledge Gaps and Consenting Risks for Wave Energy – Aquatera (led), EMEC contributed
- D.2.2 – Critical Analysis Report – Aquatera (led), Exeter University, Plymouth University & EMEC contributed
- D.3.5 – Guidelines on data collection, structuring and metadata – Hidromod (led), Exeter University, Plymouth University & EMEC contributed
- D.6.1 – Communication and Dissemination Plan – EMEC (led), Hidromod contributed
- D.6.2 – Project Website – EMEC (led), all partners reviewed
- D.6.3 – Minutes from the Steering Group – Aquatera (led), EMEC contributed

1.3 Identified deviations, problems and corrective actions taken in the period:

If any, identify the nature and the reason for the deviation or encountered problems (technical, financial or organisational), identify partners involved, clarify impacts on the activities and deliverables, present the strategy to overcome them; in case of deviations described in the last report describe to which extent you have managed to get back on track.

A comprehensive risk register has been developed to support effective project management of the SEA Wave project. The top three risks identified on the risk register are as follows:

- The risk of devices not being installed/available for study during the period of the project will hamper the success of the data collection campaign. All developer partners (Wello, CorPower Ocean, Laminaria and Ocean Energy) within the project are experiencing delays to the delivery schedule for their WECs. CorPower Ocean have not finalised the deployment location and awaiting funding decisions before this can be confirmed. The period in which there is an array of single device type deployed on the site has reduced following the change in status of Wello WEC 1. Project partners are actively managing this, by receiving regular updates from developer partners. Data from previous projects and other devices previously installed at the test site, will be utilised to advance the data management strategy whilst data is outstanding.
- Following Wello WEC 1 becoming inactive, the status of the Wello WEC 1 may limit access to the site which has been monitored for two years through the H2020 CEFOW project. The health and safety (H&S) of personnel onsite is of the upmost importance to the project and will be prioritised over data collection. Project partners are implementing the necessary risk controls and H&S measures to avoid any contact scenarios. EMEC operates a permit to work system at its test sites, and undertake a comprehensive review of risk assessments and method statements prior to any vessels being allowed onsite.
- Several of the project partners are from the UK therefore the ongoing uncertainty surrounding Brexit continues pose a risk to the project. As part of the mitigation measures employed, all UK partners have developed their own Brexit policies which will be enacted in the event of the UK leaving the EU.

No issues or deviations have been identified to date.

2 Work plan for the next period

2.1 Planned activities in the next reporting period:

Give an outlook on planned activities and deliverables, for the period until the next report, according to the agreed work plan in the initial proposal (Annex I of the Grant Agreement).

Environmental Demonstration Strategies relating to each device type within the project will be developed with close participation from the design team within each developer company. Strategies will include the use of both device mounted equipment and separate survey campaigns in the surrounding area. The development of the strategies will entail collaboration across the consortium to agree the best methods utilised in the project.

During the next reporting period, Month 7 – Month 12, the first fisheries acoustic campaign will commence. Surveys utilising towed high-definition camera array and static baited camera will be completed in August/September, following the selection of survey locations. In order to capitalise on good weather and sea state opportunities, a second vessel will be rented during the survey campaigns to allow simultaneous surveys to be completed. A comprehensive review of the proposed survey methods will be undertaken to ensure the most up-to-date methods are employed during the 2019 survey campaigns.

Following the work completed by Hidromod to date, the Data Management Platform will be made available during the next reporting period. Guidelines on secondary data and model dissemination will be produced with input from Exeter and Plymouth University, to agree the most appropriate method for disseminating this information.

EMEC will present the SEA Wave project at the European Maritime Day, in Lisbon, on 16-17 May. A project leaflet will be developed ready for distribution at All Energy, Glasgow, and EWTEC, Napoli. Several project partners have also submitted abstracts to the Marine Alliance for Science and Technology for Scotland (MASTS) Annual Science Meeting held in October.

3 Other issues

If any, indicate other project-related issues to be brought to the attention of the EASME and/or the European Commission.

There are no project-related issues requiring the attention of EASME at this stage.