Wave Energy in the Southern Europe (WESE)

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1. INTRODUCTION

On the 25th of June 2018, the European Commission selected the **Wave Energy in the Southern Europe (WESE)** project leaded by AZTI on clean ocean energy for funding under the European Maritime and Fisheries Fund (EMFF). While the first tidal farms in European waters are being deployed and more and more devices are being tested in water, the idea of obtaining clean energy through the oceans' waves is also gaining ground. As with all new developments, however, we need to collect data, develop models and thoroughly understand the possible impacts of the new technologies on the marine environment.

2. OBJECTIVES

The main objective of the present project is to contribute **to increase the current knowledge** on **environmental impacts** of Wave Energy (WE projects) reducing uncertainty in modelling potential impacts of future wave devices energy large scale deployments to **better inform decision-makers and managers** on environmental real risks and **reduce environmental consenting uncertainty** of ocean WE projects across Europe and a do **better maritime spatial planning (MSP)** approach to this nascent industry.

3. GENERAL DESCRIPTION

Following the recommendations of Annex IV State of the Science Report prepared by Copping et al. (2016) (http://tethys.pnnl.gov/publications/state-of-the-science-2016) , the strategic research suggested in the present proposal is based on:

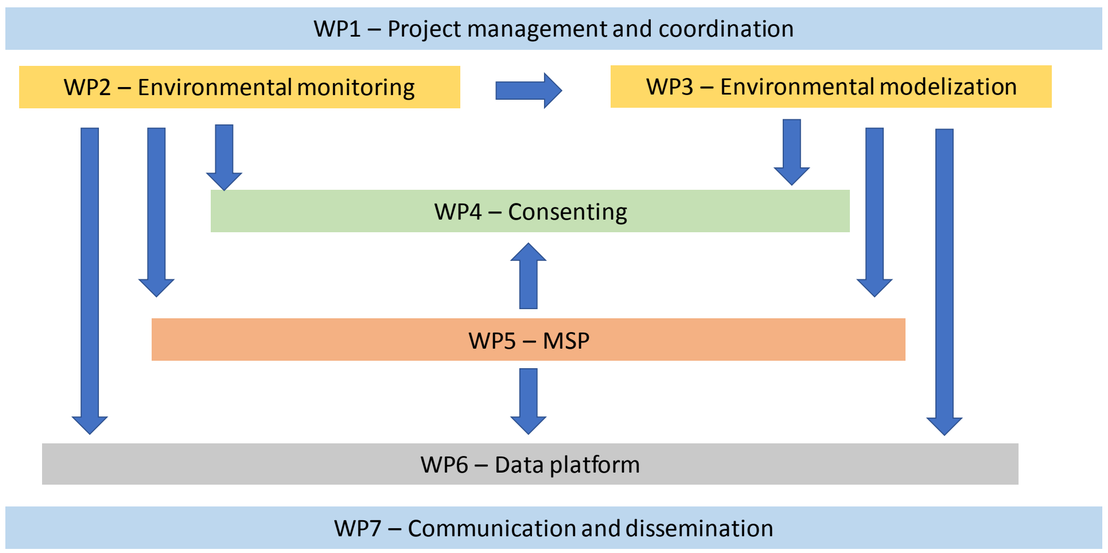
1) **WP2-WP 3 - Environmental monitoring** around devices operating at sea (BIMEP and Mutriku in Spain and Peniche in Portugal) and modelisation of future cumulative pressures and impacts in relation to the following environmental aspects: (i) underwater and aerial sound; (ii) Energy removal; (iii) Electromagnetic fields (EMFs); (iv) Seafloor integrity

2) **WP4- Consenting procedures development**: time-consuming procedures -linked to uncertainty about project impacts and the need to consult with numerous stakeholders before reaching a permitting decision—appear to be the main obstacles to consenting of WE projects. Building on the findings of previous activities, a more efficient consenting procedure based on a risk-based approach of WE projects will be developed for each Spain and Portugal in a strong relationship with the main consenting bodies and stakeholders through workshops and regular meetings in each country in order to develop publicly available consenting guidelines, which will be used to improve and streamline processes and reduce duplication of efforts.

3) **WP5 - Maritime spatial planning (MSP):** the rationale for MSP is to provide a stable and transparent planning system for maritime activities and users within agreed environmental limits to ensure marine ecosystems and their biodiversity remain healthy. Building on the existing developments in Portugal and Spain, MSP Decission Support Tools (DSTs) for site selection of WE projects in Spain and Portugal will be developed for a more efficient planning of future WE deployments in these countries. These DSTs will include the knowledge acquired in the above described activities including the promoted risk-based approach for environmental aspects consideration in these DSTs.

4) **WP 6 – Data Platform:** to guarantee that beneficiaries must give access to their results to EU institutions, bodies, offices or agencies, for developing, implementing or monitoring EU policies or programs a specific WESE **platform for data sharing** will be developed.

4. PROJECT STRUCTURE



5. PARTNERS

Scientific partners

Industrial partners

5. EXPECTED OUTPUTS

Output 1: to improve environmental information and knowledge on real deployments of wave energy devices installed in different marine environments: onshore – Mutriku OWC plant, nearshore – WaveRoller in Peniche and offshore, Oceantec in BIMEP, regarding underwater and aerial emitted sound, electromagnetic fields emitted by the cables and seafloor integrity alterations. This information will be used for the development of cumulative environmental impact models, over these environmental factors, for future wave energy arrays and farms.

Output 2: improved knowledge about consenting and licensing in the south of Europe (Spain and Portugal) and the development of a publicly available guidelines (for decision makers, developers, stakeholders, etc.) for the consenting and licensing process in Spain and Portugal which will be used to improve and streamline processes and reduce duplication of efforts.

Output 3: development of Decision Support Tools (DSTs) to obtain a suitability index for site identification and selection of future wave energy deployments along the coast of Portugal and the northern Spain, in the context of MSP.

Output 4: setting up of an environmental data platform aligned with relevant existing legislation and initiatives (e.g. EMODnet, Inspire Directive, Marine Strategy Framework Directive, Maritime Spatial Planning, etc.). This platform will provide the visualization of: (i) environmental data obtained in the monitoring tasks; (ii) Decision Support Tools (DSTs) for MSP; (iii) consenting guidelines for wave energy projects to be installed in Spain and Portugal and (iv) project deliverables.

ACKNOWLEDGEMENTS

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