

Development of a wind-wave power open-sea platform equipped for hydrogen generation with support for multiple users of energy



PROJECT DETAILS

Funding Programme:
7th Framework Programme
(FP7)

Sub-Programme:
Transport

Funding Scheme:
Small or medium-scale
focused research project

Project Reference:
288145;
UE-H2OCEAN-288145

Project Duration:
36 Months (2012-01-01 to
2014-12-31)

Total Project Value:
€ 6.046.626

EU Grant-Aid:
€ 4.525.934

Funding to UniOvi:
€ 103.944

Website:
<http://www.h2ocean-project.eu/>

PROJECT DESCRIPTION

The rational exploitation of oceans space and resources is increasingly seen as crucial to enhance European competitiveness in key areas such as Renewable Energy and Aquaculture. The H2OCEAN consortium aims at developing an innovative design for an economically and environmentally sustainable multi-use open-sea platform. The H2OCEAN platform will harvest wind and wave power, using part of the energy on-site for multiple applications including a multi-trophic aquaculture farm, and convert on-site the excess energy into hydrogen that can be stored and shipped to shore as green energy carrier. The project builds on already on-going R&D and commercial activities of a partnership involving European leading industrial and academic partners from 5 countries within the fields of renewable energy, fish farming, hydrogen generation, maritime transports and related research disciplines.

The unique feature of the H2OCEAN concept, besides the integration of different activities into a shared multi-use platform, lies in the novel approach for the transmission of offshore-generated renewable electrical energy through hydrogen. This concept allows effective transport and storage the energy decoupling energy production and consumption, thus avoiding the grid imbalance problem inherent to current offshore renewable energy systems. Additionally, this concept also circumvents the need for a cable transmission system which takes up a significant investment share for offshore energy generation infrastructures, increasing the price of energy. The envisaged integrated concept will permit to take advantage of several synergies between the activities within the platform significantly boosting the Environmental, Social and Economic potential impact of new maritime activities, increasing employment and strengthening European competitiveness in key economic areas.

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