

THE PARTNERSHIP	CONTACT	THE PROJECT TEAM	THE CHALLENGE	RESULTS ACHIEVED
 <ul style="list-style-type: none"> <li>➤ AWS Energy, Spain</li> <li>➤ Virentec Ltd, UK</li> <li>➤ Universidad de Valladolid, Spain</li> <li>➤ Fraunhofer, Germany</li> <li>➤ Cisauro, Italy</li> <li>➤ Viking Fish Farms Ltd, UK</li> <li>➤ Institut für Seewirtschaftswirtschaft, Germany</li> <li>➤ Denmark Teknologiskenter, Denmark</li> <li>➤ IFA, Spain</li> <li>➤ Fisión Marític Ltd, UK</li> <li>➤ Enefit, Spain</li> <li>➤ D'Agostino, Italy</li> <li>➤ Universidad de Oporto, UK</li> <li>➤ IF Power, UK</li> <li>➤ Cranfield University, UK</li> <li>➤ Sustainable Technologies SL, Spain</li> <li>➤ Floating Power Plants, Denmark</li> </ul>	<p><b>Technical Coordinator</b> Viruipac Ltd info@viruipac.co.uk</p> <p><b>Dissemination Coordinator</b> Gergo Ollankari g.ollankari@ec.europa.eu</p> <p><b>Coordinator</b> Marta Nazawa, PhD AWS Energy marta.nazawa@awsenergy.com</p> <p><b>H2Ocean - Sustainable Harvesting of the Ocean</b> Developing an open-sea platform for energy conversion and use in hydrogen generation and aquaculture</p>  <p><a href="http://www.h2ocean-project.eu">www.h2ocean-project.eu</a></p> <p>Copyright H2Ocean consortium This document has been produced with the assistance of the European Union (EU) Horizon. The contents of this document are the sole responsibility of H2Ocean consortium and can in no way be taken to reflect the views of the European Union.</p> <p>The project is supported by the European Union through the H2 Ocean of Excellence. "Multi-use Offshore platform" Theme (Grant No. 101017816).</p> <p>A project implemented by</p> 	<p>H2Ocean brings together 17 partners from 5 countries around Europe, who are leaders in the fields of renewable energy, hydrogen generation, fish farming, maritime transport and related disciplines. The project also builds on the commercially available products, emerging product developments and leading edge research activities that are already being carried out by the partners.</p> <p>H2Ocean started on the 1<sup>st</sup> of January 2012 and lasts 3 years.</p> <p><b>Objectives</b></p> <p>The concept of the project is to develop a flexible design for a multi-component and multi-purpose wind-wave farm based platform, which can be varied to address the requirements of the location and local economics. The system will comprise hydrogen generation in open-sea from renewable sources (wave and wind), a facility for fish water production and multiple uses of the electrical energy produced in open-sea support for aquaculture, communications, etc.</p> 	<p>The sustainable exploitation of ocean resources is seen as a crucial source of renewable energy, food and water security in the future. Offshore platforms that can combine many functions within the same infrastructure will offer significant benefits in terms of economics, optimising spatial planning and minimising the impact on the environment.</p>  <p>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 of the energy, decreasing energy production and consumption, thus avoiding the grid imbalance problem inherent in current offshore renewable energy sources. Additionally, this concept also eliminates the need for a cable transmission system which takes up a significant investment share for offshore energy generation infrastructures, and so increasing the price of energy.</p>	<ul style="list-style-type: none"> <li>✓ Conceptual design and assessment of technology integration to meet the functional specifications.</li> <li>✓ Development of a web-based software tool for the assessment of optimal locations and corresponding platform specifications (<a href="http://www.h2ocean-project.eu">www.h2ocean-project.eu</a>).</li> <li>✓ Development of an integrated wave-wind coupled model of dynamics, with mechanical and structural assessment (OWAT), environmental loading and signalising considerations.</li> <li>✓ Development of appropriate safety measures, devices and procedures.</li> <li>✓ Development and dimensioning of offshore destination units for a hydrogen generator.</li> <li>✓ Adoption and optimisation of state-of-the-art hydrogen production technology to off-shore environment.</li> <li>✓ Design of an autonomous offshore aquaculture system, including service facilities and operating specifications, ensuring novelty of the multi-trophic approach that encompasses production of various species in the off-shore location.</li> <li>✓ Design of a floating anaerobic digester (FAD) for both marine biomass and organic waste from human activities.</li> <li>✓ Development and evaluation of procedures for deployment and decommissioning of the platform, including operating logs, sensing and safety.</li> <li>✓ A complete assessment of the environmental impact has been performed, including Life Cycle Assessment (LCA) and recommendations.</li> </ul> <p><a href="http://www.h2ocean-project.eu">www.h2ocean-project.eu</a></p>

Figure 38. Leaflet on H2OCEAN project (M34)