



HYDRO/OCEAN ENERGY

INNOVATION FUND

Deployment of net-zero and innovative technologies

SEAWORTHY: Sustainable dispatchable Energy enabled by wAve-Wind OffshoRe plATforms with onboard Hydrogen

The Innovation Fund is 100% funded by the EU Emissions Trading System

| Project Factsheet

SEAWORTHY is a commercial-scale demonstration of a first-of-a-kind technology that is capable of supplying clean dispatchable offshore power from wind, waves and hydrogen (H2). The project will pave the way for the commercial roll-out of this technology, which will revolutionise the offshore Power-to-X market by providing clean and cost-effective dispatchable power to offshore, off-grid and coastal weak-grid applications (e.g. islands), which currently rely on fossil fuels.

This demonstrator technology, P-Demo, integrates a 4.3 megawatt (MW) Wind Turbine Generator (WTG), a 0.8 MW Wave Energy Converter (WEC) system and a H2 system consisting of a 1 MW electrolyser, 48 MWh of energy storage and a 1.2 MW fuel cell. P-Demo will be the world's first wind-wave-H2 unit and it will be deployed in PLOCAN's test site in Spain. It will deliver 11.05 Gigawatt hours (GWh) per year of renewable electricity to the

COORDINATOR

FLOATING POWER PLANT CANARIAS SLU

LOCATION

Spain

CATEGORY

Renewable Energy (RES)

SECTOR

Hydro/Ocean energy

AMOUNT OF INNOVATION FUND GRANT

EUR 26,000,000

EXPECTED GHG EMISSIONS AVOIDANCE

25,557 tonnes CO2 equivalent

STARTING DATE

01 January, 2024

ENTRY INTO OPERATION DATE

30 June, 2028

FINANCIAL CLOSE DATE

30 November, 2025

grid, avoiding a total of 25 557 tonnes of CO2 equivalent during its first 10 years of operation, with a 100% relative greenhouse gas (GHG) emission avoidance.

These key innovative features of the project allow for a maximised uptake of wind and wave resources, increasing power quality, output capacity per unit and output consistency over time. At the same time, the project integrates H2 production systems, including electrolysers, a higher energy storage capacity (up to 300 MWh) and fuel cells, for the provision of truly dispatchable renewable power.

These features in turn minimise the total investment per megawatt, through shared infrastructure (mooring, platform, and grid infrastructure) for the three technologies in a single unit, as well as manufacturing materials and techniques from the shipbuilding value chain that

enable scaled series production and economies of scale.

In terms of policy priorities, the technology contributes directly to the EU Strategy on Offshore Renewable Energy, as well as to the longer term climate neutrality objectives. Moreover, REPowerEU recognizes that energy storage plays a key role to end external dependence on fossil fuels by ensuring security of supply and supporting renewables integration.

Furthermore, the technological design allows a variety of manufacturing and assembly options, easing the use of different facility types and a distributed European supply chain. From a social perspective, this provides opportunities for a high degree of local content and job creation, even in geographical areas lacking a strong marine industry and where a suitable value chain can scale gradually.

| Participants

FLOATING POWER PLANT CANARIAS SLU

Spain

FLOATING POWER PLANT AS

Denmark