



Offshore Clean Hydrogen Production for Multi-use Purposes

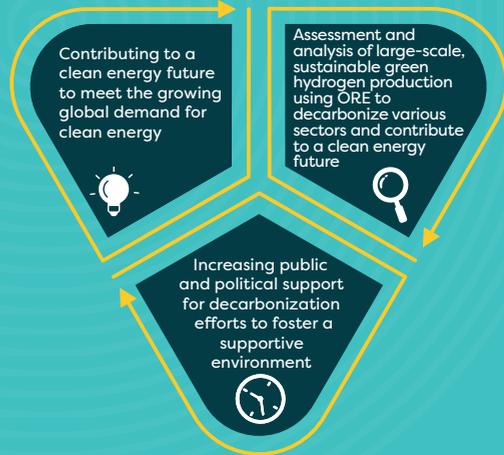
Offshore Hydrogen: secure Europe's clean energy future

The OCEAN-H2 project aims to assess the long-term feasibility of sustainable large-scale green hydrogen production using offshore renewable energy (ORE), with the aim of contributing to the decarbonization of various sectors and the achievement of a clean energy future

Main objectives

- 01.** Identifying the most effective technical solution for the large-scale production of green hydrogen in the European Union seas
- 02.** Developing connection models that take into account the specific infrastructures and renewable resources available in each basin, promoting synergy between decentralized production and continental distribution
- 03.** Analyzing the economic factors that influence the feasibility and competitiveness of offshore green hydrogen production compared to conventional methods
- 04.** Studying the social dimensions and potential conflicts of interest related to the acceptability of the system through stakeholders involvement and building consensus around the proposed solutions

Expected Results



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alexander.micallef@um.edu.mt



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Sustainable Blue
Economy Partnership

OCEAN-H2

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University of Malta (Malta)

The University of Malta is the island nation's highest teaching and research institution, with a long-standing tradition in engineering, maritime studies, and environmental sciences. The University hosts multidisciplinary centers and laboratories that support cutting-edge research on sustainable energy systems, marine technology, and digital innovation across the Mediterranean region. The Department of Electrical Engineering, which coordinates the OCEAN-H2 project, provides specialized expertise in power electronics and the design of offshore microgrids, driving the integration of renewable resources for large-scale green hydrogen production.

Research Institutes of Sweden (Sweden)

RISE is Sweden's national research institute and a leading innovation partner, bringing together an extensive network of testbeds, laboratories, and applied research programs. The Institute maintains a strong focus on energy system electrification, digitalization, and industrial decarbonization, working in close synergy with both the public sector and private industry. Within the OCEAN-H2 framework, RISE leverages its expertise in systems modeling and offshore energy to evaluate the feasibility and scalability of hydrogen production in the Baltic and North Sea basins.

University of Naples Federico II (Italy)

The University hosts strong research groups in naval architecture, offshore engineering, renewable energy and environmental modelling, with extensive experience in Mediterranean coastal and marine studies. The Department of Social Sciences, involved in the OCEAN-H2 project, conducts interdisciplinary research in sociology and political science, on sustainability and energy transitions, governance, and social inequalities, with solid expertise in applied mixed-methods research and stakeholder engagement across national as well as EU-funded projects.

Fraunhofer ISIT (Germany)

Fraunhofer ISIT is a member of the Fraunhofer-Gesellschaft, Europe's largest organization for applied research, dedicated to bridging the gap between fundamental science and industrial deployment. The Institute specializes in microelectronics, power electronics, and advanced energy storage technologies, operating state-of-the-art fabrication and testing facilities. For the OCEAN-H2 project, Fraunhofer ISIT focuses on developing robust medium-voltage direct current (MVDC) solutions and power conversion systems essential for stable offshore energy transmission.

University of Technology of Belfort-Montbéliard (France)

UTBM is a prominent French engineering university renowned for its focus on technology, innovation, and close collaboration with industrial partners. Its research units specialize in energy systems, smart grids, and hydrogen technologies, with a primary emphasis on developing experimental platforms for real-world applications. Through its involvement in OCEAN-H2, and in collaboration with the CNRS FEMTO-ST institute, UTBM contributes advanced modeling of electrolysis processes and energy management strategies for multi-use offshore platforms.



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