

HYSHIP

DEMONSTRATING LIQUID HYDROGEN FOR THE MARITIME SECTOR



Project ID	101007205
PRR 2025	Pillar 3 - H ₂ End Uses – Transport
Call Topic	FCH-01-6-2020
Project Total Costs	10 796 560.00
Clean H ₂ JU Max. Contribution	7 993 942.00
Project Period	01-01-2021 - 31-12-2025
Coordinator Beneficiary	WILH WILHELMSSEN HOLDING ASA, NO
Beneficiaries	NORSEA GROUP AS, DIANA SHIPPING SERVICES SA, WILHELMSSEN SHIP MANAGEMENT NORWAY AS, AIR LIQUIDE NORWAY AS, STOLT TANKERS B.V., MASSTERLY AS, LMG MARIN FRANCE, LMG MARIN AS, NORLED AS, MARITIME CLEANTECH, PERSEE, DNV SE, EQUINOR ENERGY AS, KONGSBERG MARITIME AS, DNV AS, UNIVERSITY OF STRATHCLYDE, NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS", EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH

<https://hyship.eu/>

PROJECT AND GENERAL OBJECTIVES

HyShip is building two vessels that will run on liquid hydrogen (LH₂). The vessels will transport goods from port to port along the west coast of Norway, and transport LH₂ for bunkering stations for other vessels/trucks running on hydrogen. The project aims to replace trucks on the roads between the ports, demonstrate the use of LH₂ on a vessel and distribute LH₂ to ports to facilitate a LH₂ supply chain. The project's main key performance indicator is to demonstrate 3 000 hours of operation of 3 MW fuel cells. The design of the vessels is ongoing, and the vessels have not been ordered yet.

NON-QUANTITATIVE OBJECTIVES

- Conceptually design a full range of vessel and hydrogen systems.
- Develop and describe a business ecosystem with a timeline for cost-efficient operation.
- Integrate the demonstration system into a larger sociotechnical system, with business models, policy models and LH₂ supply, that will help the transition towards the use of LH₂.
- Use robust holistic design methods, that lower the cost of conducting complex projects with novel fuel and infrastructure, allowing real-time data collection on the effects of the use of novel fuels (no real-time data provided yet).
- Develop input to the International Maritime Organization, which will help the systems transition to its rules instead of following the alternative design approach.

PROGRESS, MAIN ACHIEVEMENTS AND RESULTS

The preliminary design of vessel and liquid hydrogen propulsion systems is complete.

FUTURE STEPS AND PLANS

- The ship building contract will be signed.
- The vessels will be delivered.
- Vessel operations will begin.

PROJECT TARGETS

Target source	Parameter	Unit	Target	Target achieved?
Project's own objectives	Develop an intelligent Energy Management Systems that lets us reduce CAPEX of the energy system by more than 5%.	%	5	
	Reduction of design and ship integration costs related to the hydrogen/fuel cell systems by more than 40%.	%	40	