RH_2IWER

RENEWABLE HYDROGEN FOR INLAND WATERWAY EMISSION REDUCTION

Project ID	101101358
PRR 2024	Pillar 3 – H_2 end uses: transport
Call topic	HORIZON-JTI-CLEANH2-2022-03-05: Large scale demonstration of hydrogen fuel cell propelled inland waterway vessels
Project total costs	EUR 20 531 971.25
FCH JU max. contribution	EUR 14 998 541.38
Project start - end	1.3.2023–31.8.2027
Coordinator	Teknologian Tutkimuskeskus VTT Oy, Finland
Beneficiaries	Air Liquide BV, Ballard Power Systems Europe AS, Compagnie Fluviale de Transport, DFDS AS, Future Proof Shipping BV, H_2Boat SRL, Air Liquide SA, Air Liquide Belge, Nedstack Fuel Cell Technology BV, Sogestion, Stichting Projecten Binnenvaart, Theo Pouw BV, Università degli Studi di Genova, Verenigde Tankrederij BV

http://rh2iwer.eu/

PROJECT AND GENERAL OBJECTIVES

The main aim of RH_2IWER is to create a solid basis for the acceleration of vessels powered by hydrogen fuel cells in inland waterway shipping by demonstrating six commercially operated vessels. These vessels are of varying lengths and types: 86 m, 110 m and 135 m; and container, bulk and tanker vessels with installed power ranging from 0.6 MW to around 2 MW. The project will also work to standardise containerised fuel cell and hydrogen solutions. Through demonstration, standardisation work and multilevel analyses, combined with vigorous dissemination and communication measures, the RH_2IWER project will create a basis on which the shipping industry can significantly reduce its environmental footprint and remove emissions from its entire fleet in the future.

NON-QUANTITATIVE OBJECTIVES

- Demonstrate the use of inland waterway vessels powered by hydrogen fuel cells.
- Accelerate adoption by facilitating cooperation and exploiting synergies within the European maritime sector.
- Promote the acceptance of inland waterway vessels powered by hydrogen fuel cells as a viable zero-emission solution.
- Increase the impact of inland waterway transport on decarbonisation.

PROGRESS AND MAIN ACHIEVEMENTS

RH_2IWER partners have been working to develop the demonstration vessels' general design, as well as with the business cases. Partners have also started to work on standardising fuel cell and hydrogen storage containers in order to alleviate the risks for shipowners in the future when adopting these technologies.

FUTURE STEPS AND PLANS

Next in the project, the hydrogen and fuel cell systems on board the vessels will be designed in more detail and then the vessels will built/retrofitted and their use demonstrated.

PROJECT TARGETS

Target source	Parameter	Unit	Target	Target achieved?
Project's own objectives	PEMFC system CAPEX	€/kW	1.35	
	H_2 and FC vessels demonstrated	number	6	
	Professionals trained	number	80	
	FC power rating	MW	2	
	Maritime FCH lifetime	hours	40	
	Safety, PNR and RCS workshops	number/year	1	
	Safety reporting	%	100	
	Projects with a proactive safety management process	%	100	
	Product design achieving type approval	number	2	

Clean Hydrogen Partnership
Co-funded by the European Union