H_2PORTS

IMPLEMENTING FUEL CELLS AND HYDROGEN TECHNOLOGIES IN PORTS

Project ID	826339
PRR 2025	Pillar 3 - H_2 End Uses - Transport
Call Topic	FCH-03-1-2018
Project Total Costs	4 117 197.50
Clean H_2 JU Max. Contribution	3 999 947.50
Project Period	01-01-2019 - 31-12-2025
Coordinator Beneficiary	FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS COMERCIALES DE VALENCIAPORT, ES
Beneficiaries	SCALE GAS SOLUTIONS, S.L., VALENCIA TERMINAL EUROPA SA,CANTIERI DEL MEDITERRANEO SPA, HYSTER-YALE NEDERLAND BV,ATENA SCARL - DISTRETTO ALTA TECNOLOGIA ENERGIA AMBIENTE, MEDITERRANEAN SHIPPING COMPANY TERMINAL VALENCIA SA, CENTRO NACIONAL DE EXPERIMENTACIONDE TECNOLOGIAS DE HIDROGENO Y PILASDE COMBUSTIBLE CONSORCIO, GRIMALDI EUROMED SPA, BALLARD POWER SYSTEMS EUROPE AS, SOCIEDAD ESPANOLA DE CARBUROS METALICOS SA, AUTORIDAD PORTUARIA DE VALENCIA, ENAGAS SA,UNIVERSITA DEGLI STUDI DI NAPOLI PARTHENOPE, UNIVERSITA DEGLI STUDI DI SALERNO, AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE

https://h2ports.eu/

PROJECT AND GENERAL OBJECTIVES

The H2ports project will demonstrate and validate two innovative solutions based on fuel cell technologies. A reach stacker and a terminal tractor will be tested on a daily basis during real operational activities at the port of Valencia. The required hydrogen will be provided via a mobile hydrogen-refuelling station (HRS) designed and built during the project.

NON-QUANTITATIVE OBJECTIVES

- The project aims to disseminate H_2 technologies to the port and maritime sector. This goal has been accomplished through the organisation of the stakeholder advisory group.
- H2Ports will gather information on the use of H_2 in port environments.
- H2Ports will gather information on the use of H_2 as fuel for vessels.

PROGRESS, MAIN ACHIEVEMENTS AND RESULTS

Both the reach stacker and yard tractor have been commissioned.

FUTURE STEPS AND PLANS

It is envisaged that the two applications (reach stacker and 4 x 4 terminal tractor) will undergo two years of piloting under normal operative conditions.

PROJECT TARGETS

Target source	Parameter	Unit	Target	Target Achieved?
Project's own objectives	Amount of H_2 dispensed	kg/day	60	
	Tank to wheel efficiency	%	50	
	Hydrogen storage cost	€/kg	650	
	HRS daily capacity	kg/day	60	
	Reach stacker vehicle Power	kW	90	
	Vehicle Power	kW	70	
	Noise level	dBa	< 60	
	Specific maintenance cost	€/output	TBD	
	Hydrogen refuelling time	min	< 30	
	Vehicle over cost (target percentage over CNG and diesel port trucks)	%	100	
	Cost of fuel cell system	€/kW	3 500	
	Duration of the testing period	hours-years	5 000-2	
	Total installed power of fuel cell system	kW	175-205 (225-285)	
	HRS specific maintenance cost	€/kg	1	
	HRS CAPEX	€	575 000	

Clean Hydrogen Partnership
Co-funded by the European Union