TH2ICINO

TOWARDS H_2YDROGEN INTEGRATED ECONOMIES IN NORTHERN ITALY

Project ID	101112098
PRR 2024	Pillar 6 – H_2 valleys
Call topic	HORIZON-JTI-CLEANH2-2022-06-02: Hydrogen valleys (small-scale)
Project total costs	EUR 18 506 850.00
Clean H_2 JU max. contribution	EUR 7 446 920.00
Project period	1.9.2023–31.8.2027
Coordinator	RINA Consulting SpA, Italy
Beneficiaries	Air Pullmann SpA, Artelys, Centro de Investigación de Recursos y Consumos Enérgeticos, Comune di Busto Arsizio, Confindustria Varese, EMISIA SA – Anonimi Etairia Perivallontikon Kai Energiakon Meleton Kai Anaptixis Logismikou, Lhyfe, Società per azioni Esercizi Aeroportuali S.E.A.

http://th2icino.eu

PROJECT AND GENERAL OBJECTIVES

Th2icino spearheads the deployment of micro hydrogen economies by conceptualising and demonstrating an ecosystem. It comprises six replicable use cases:

- renewable hydrogen production,
- transport via pipelines,
- transport via tube trailers,
- hydrogen refuelling stations,
- direct refuelling from the tube,
- retrofitting of some airport ground units.

The implementation of the use cases will serve as a validation mechanism for a master planning tool, which will be designed to offer support in the techno-economic development of hydrogen valleys across the EU.

Th2icino will demonstrate a hydrogen ecosystem at the heart of Milan Malpensa Airport to foster sector coupling with the surrounding area, creating synergies between strategic pieces of the energy transition, such as airports, and hard-to-abate mobility and industries of Varese in the quest for net zero. The project's specific goals are the following:

- 500 t/year of renewable hydrogen,
- decarbonisation of at least two segments (mobility/energy),
- yearly savings equivalent to the CO_2 emissions of 1 500 cars.

NON-QUANTITATIVE OBJECTIVES

- Use a hydrogen airport as a test bed for an innovative solution.
- Establish governance of a hydrogen region.

PROGRESS AND MAIN ACHIEVEMENTS

- Preliminary hydrogen safety planning has taken place.
- Initial steps have been taken to outline the hydrogen safety-planning framework, ensuring adherence to stringent safety standards and protocols throughout the project life cycle. Safety protocols and risk assessment procedures have been developed to mitigate potential hazards associated with hydrogen production, storage and transportation.
- The modelling phase for the extended valley has begun, aiming to simulate and optimise various aspects of the hydrogen ecosystem, including production, distribution and utilisation.

FUTURE STEPS AND PLANS

- Plans are in place to commence collaboration with offtakers in March 2024.
- The focus will be on modelling ground units at the airport and developing the master planning tool to support decision-making processes related to hydrogen production, distribution and utilisation.
- Engaging with offtakers will enable the refinement of project strategies, alignment of objectives and validation of technological solutions tailored to meet end users' needs.

PROJECT TARGETS

Target source	Parameter	Unit	Target	Target achieved?
Project's own objectives	Emission reduction	t CO_2/year	4 400	
	Levelised cost of H_2	€/kg H_2	< 4.5	
	H_2 produced	t H_2/year	500	

Clean Hydrogen Partnership
Co-funded by the European Union