

MULTHYFUEL

MULTI-FUEL HYDROGEN REFUELLING STATIONS (HRS): A CO-CREATION STUDY AND EXPERIMENTATION TO OVERCOME TECHNICAL AND ADMINISTRATIVE BARRIERS



Project ID	101006794
PRR 2024	Pillar 5 – Cross-cutting
Call topic	FCH-04-1-2020: Overcoming technical and administrative barriers to deployment of multi-fuel hydrogen refuelling stations (HRS)
Project total costs	EUR 2 121 906.25
Clean H ₂ JU max. contribution	EUR 1 997 406.25
Project period	1.1.2021–30.09.2024
Coordinator	Hydrogen Europe, Belgium
Beneficiaries	Engie, Health and Safety Executive, Institut national de l'environnement industriel et des risques, ITM Power (Trading) Limited, Kiwa Nederland BV, L'Air Liquide SA, Shell Nederland Verkoopmaatschappij BV, Snam SpA, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg

<https://multhyfuel.eu/>

PROJECT TARGETS

Target source	Parameter	Unit	Achieved to date by the project	Target achieved?	SOA result achieved to date (by others)	Year for reported SOA result
Project's own objectives	Safety refuelling distance	m	N/A		5–35, depending on the country	2021
	Guidelines for safety barriers	-	N/A		Depending on the country	N/A
	Number of stakeholders endorsing project's results	number of authorities	17		N/A	N/A

PROJECT AND GENERAL OBJECTIVES

Multhyfuel's ultimate goal is the amendment of best-practice guidelines for the design, construction and development of multifuel refuelling stations. An analysis of the current legal framework regarding permitting requirements throughout Europe has been carried out. A risk assessment analysis and the experimental data acquisition on the leakage characteristics and consequences in the station's forecourt will take place shortly.

NON-QUANTITATIVE OBJECTIVES

The project aims to contribute to the harmonisation of permitting and risk assessment requirements by developing best-practice guidelines based on new data acquired during project implementation.

PROGRESS AND MAIN ACHIEVEMENTS

Deliverable 1.2 – Permitting requirements and risk assessment methodologies for HRS in the EU (first version) was submitted and presented to the stakeholders, with a summary of the main commonalities and differences found in permitting requirements from 14 European countries.

Feedback from public authorities was received, as was feedback from experts during the interim review meeting. In work package (WP) 3, three case study models with different configurations were identified and designed, and a preliminary risk assessment was performed on them to identify the most critical scenarios to study in WP 2. In WP 2, *Deliverable 2.2 – Assessment of dispersion for high-pressure H₂* was submitted, with results from computational fluid dynamics modelling simulations performed to evaluate the size of clouds expected considering different scenarios of leakage in H₂ dispensers. Testing was performed to acquire data concerning leakage characteristics and consequences, and results were presented to targeted stakeholders.

FUTURE STEPS AND PLANS

Considering new data acquired during experimental testing, the consortium will review the risk assessment performed at the beginning of the project and develop a set of best-practice guidelines, which will be presented to hydrogen refuelling station operators, public authorities and standardisation bodies.