

Project ID	101101447
PRR 2025	Pillar 2 – H ₂ storage and distribution
Call topic	HORIZON-JTI-CLEANH ₂ -2022-02-09
Project total cost	EUR 3 453 685.00
Clean H ₂ JU max. contribution	EUR 3 453 685.00
Project period	01-01-2023 - 31-12-2025
Coordinator Beneficiary	SINTEF AS, NO
Beneficiaries	ORLEN LABORATORIUM SPOLKA AKCYJNA, LINDE GMBH, ENGIE ENERGIE SERVICES, AIR LIQUIDE FRANCE INDUSTRIE, EMCEL GMBH, ZENTRUM FÜR BRENNSTOFFZELLENTÉCHNIK GMBH, TOYOTA MOTOR EUROPE NV, EIFER EUROPAISCHES INSTITUT FÜR ENERGIEFORSCHUNG EDF KIT EWIV, ZENTRUM FÜR SONNENENERGIE - UND WASSERSTOFF-FORSCHUNG BADEN-WÜRTTEMBERG, NPL MANAGEMENT LIMITED, ENGIE, L AIR LIQUIDE SA, DEUTSCHES ZENTRUM FÜR LUFT - UND RAUMFAHRT EV

<http://hyqualityeurope.eu>

PROJECT AND GENERAL OBJECTIVES

HQE's goal is to increase the reliability of hydrogen refueling stations (HRSs) and the confidence of investors, operators and consumers in them. The objectives are:

- Collect representative data on the quality of hydrogen in European HRSs (300 spot samples in 100 HRSs).
- Develop an occurrence class and promote a risk assessment approach.
- Establish an open-source database to compile the results to allow HRS operators to take a risk assessment approach to ensure hydrogen quality.
- Test a network of six hydrogen analysis laboratories in order to certify them at EU level.
- Demonstrate the effectiveness of online analysis.
- Standardise hydrogen quality sampling and analysis methodologies for EU HRSs.
- Aid future research by defining the occurrence class of at least four new impurities beyond those listed in EN17124:2022 and ISO 21087:2019.

NON-QUANTITATIVE OBJECTIVES

HQE has extensively contributed to the development of ISO 14687, 19880-9 and 19880-8.

PROGRESS, MAIN ACHIEVEMENTS AND RESULTS

The work of collecting information from HRS operators and performing sampling and analysis has started. The first laboratory comparison has been completed, with nine laboratories participating. All impurities listed in ISO 14687 were present in the comparison, which is the first comparison to be conducted of this type. A hydrogen quality workshop was hosted by ISO, ASTM and the National Renewable Energy Laboratory to disseminate some of the early project results.

FUTURE STEPS AND PLANS

The project will continue the sampling and analysis work, working towards a target of collecting 300 samples and further laboratory intercomparisons will be conducted. The project will also install online quality monitoring at three HRSs.

PROJECT TARGETS

Target source	Parameter	Unit	Target	Achieved to date by the project	Target achieved?
Project's own objectives	Number of samples collected from HRS	Number	200	100	
	Online monitoring of HRS quality	Months	12	3	