

# HQE

HYQUALITY EUROPE

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EUROPE

Project ID	101101447
PRR 2024	Pillar 2 – H <sub>2</sub> storage and distribution
Call topic	HORIZON-JTI-CLEANH2-2022-02-09: Sampling methodology and quality assessment of HRS
Project total cost	EUR 3 453 685.00
Clean H <sub>2</sub> JU max. contribution	EUR 3 453 685.00
Project period	1.1.2023–31.12.2025
Coordinator	SINTEF AS, Norway
Beneficiaries	Air Liquide France Industrie, Deutsches Zentrum für Luft- und Raumfahrt EV, Europäisches Institut für Energieforschung EDF KIT EWIV, EMCEL GmbH, ENGIE, ENGIE Energie Services, L Air Liquide SA, LINDE GmbH, NPL Management Limited, Orlen Laboratorium SA, Toyota Motor Europe NV, Zentrum für BrennstoffzellenTechnik GmbH, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg

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## PROJECT TARGETS

Target source	Parameter	Unit	Achieved to date by the project	Target achieved?
Project's own objectives	Standards affected by project	number	3	

## PROJECT AND GENERAL OBJECTIVES

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

- collect representative data on the quality of hydrogen in European HRSs (300 spot samples in 100 HRSs);
- develop an occurrence class and promote an approach involving risk assessment;
- establish an open-source database to compile the results to allow HRS operators to take an approach involving risk assessment to ensure hydrogen quality;
- test a network of six hydrogen analysis laboratories in order to certify them at the 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 EN 17124:2022 and the International Organization for Standardization (ISO) 21087:2019.

## PROGRESS AND MAIN ACHIEVEMENTS

The project has extensively contributed to the development of ISO 14687, 19880–9 and 19880–8.

The work to collect information from HRS operators and perform sampling and analysis started. The first laboratory comparison was completed, with nine laboratories taking part. All impurities listed in ISO 14687 were present in the comparison, and this is the first comparison to be conducted of this type.

A hydrogen quality workshop was hosted by ISO, ASTM International and the National Renewable Energy Laboratory to disseminate some of the early results of the project.

## FUTURE STEPS AND PLANS

The project will continue the sampling and analysis work, working towards a target of collecting 300 samples. Further laboratory comparisons will be conducted. The project will also install online quality-monitoring facilities in three HRSs.