



Hydrogen Europe: European Hydrogen & Fuel cell Project Database

Project HyQ

Hydrogen fuel Quality requirements for transportation and other energy applications

Hydrogen-based energy conversion devices, especially proton exchange membrane fuel cells (PEMFC), are known to be sensitive to hydrogen fuel impurities. In this context, adequate specification of hydrogen quality, as well as means of checking H₂ fuel compliance, are crucial to warrant reliability of these devices. Besides, a technical and economical compromise between performance loss and purification levels has to be found: this is a key issue for all hydrogen stakeholders. Important international effort is currently being undertaken to develop Regulations, Codes and Standards (especially ISO/TC197/WG12) on this topic. This work is today mainly carried out by US DOE and Japan NEDO, and the HyQ project is being set up to enable the European industrial and scientific community to support actively this pre-normative research. The strong partnership of HyQ involves large research organisations and major industrial players involved in the hydrogen economy (end-users, manufacturers and gas suppliers). The first action of HyQ aims at identifying technological gaps from an extensive mapping on the various H₂ production and purification pathways, and of current standardisation activities on the topic. In parallel, end-users specifications will be collected. On this basis, more appropriate methods will be proposed to determine acceptable impurity levels, as well as for checking H₂ fuel quality, and in parallel, the technico-economical trade-off between H₂ quality and generator performance will be quantified. Cooperation with standardisation organisations will be ensured all along the project to promote European contribution. One of the main outcomes of HyQ will be a synthesis document gathering all procedures validated during the course of the project. This document will form the basis of the European recommendations of harmonized methods for hydrogen fuel quality testing for the different applications.

Project Information

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Project partners

Coordinator :

CEA - Commissariat à l'énergie atomique et aux énergies alternatives

Partners :

ZSW - Zentrum für Sonnenenergie- und Wasserstoffforschung Baden-Württemberg

L'AIR LIQUIDE S.A

NPL - National Physical Laboratory

CCS Global Group Ltd.

Shell Downstream Services International B.V.

Linde

VTT - Technical Research Centre of Finland

JRC - JOINT RESEARCH CENTRE- EUROPEAN COMMISSION

TOTAL MARKETING SERVICES

CENTRO RICERCA FIAT SCPA

ELEMENT ENERGY LIMITED

AXANE SA

VSL B.V.

PEUGEOT CITROEN AUTOMOBILES S.A.

Sub project(s)

Sub project 1

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Sub project categories

Research

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