Hydrogen Europe:
European Hydrogen & Fuel cell Project Database

Project Phaedrus

High Pressure Hydrogen All Electrochemical Decentralized RefUeling Station

PHAEDRUS addresses the complete scope and objectives of Topic SP1-JTI-FCH.2011.1.8. A new concept and new technologies for a hydrogen retail refuelling system are developed. The major objective is to develop and validate a new concept for 70 MPa hydrogen refuelling retail stations by showing the applicability of electrochemical hydrogen compression technology in combination with a PEM electrolyser, storage units and dispensing system. The use of electrochemical hydrogen compression technology is a step change in both the efficiency and cost of ownership of an integrated hydrogen refuelling system. The applicability will be demonstrated in a fuelling system producing 5 kg hydrogen per day, while a design is made for a fuelling system capable of producing 200 kg hydrogen per day. Safety aspects, efficiency and economic viability of the system's components will be analysed and validated as well. The targeted HRS infrastructure will have a modular dispensing capacity in the range of 50-200 kg per day, and will be fit for early network roll-out from 2015 onwards to 2020. Various consortium members are actively involved in working groups where relevant standards like SAE J2601, SAE J2799, CSA TIR 4.3, ISO TC 58/SC3 and ISO TC197 are being developed. An Advisory Board will review the progress with respect to international developments and will act as an interconnection to efforts in other Member States, Asia and the United States. The project is scheduled for 3 years and can be regarded as phase one of a two-step development. In the first phase technology will be developed, a complete Hydrogen Refuelling System design is made for 200 kg/day capacity, and validated on a 5 kg/day scale. Subsequently in phase two the technology will be demonstrated in a scalable 200 kg/day Hydrogen Refuelling System. The consortium encompasses the complete value-chain for an innovative hydrogen refuelling station; from a hydrogen producer to the automotive industry.

Project Information

Type of project : Research
Timing : 01/11/2012 > 31/10/2015
Project website: http://www.phaedrus-project.eu/
Project Budget : 6.309.832 €

Funding

European Union through FCH JU: **Grant agreement 303418 - CORDIS link**

Project partners

Coordinator :
HyET Hydrogen BV
Partners :
Nel Hydrogen
Daimler
SHELL GLOBAL SOLUTIONS INTERNATIONAL B.V.
MINES ParisTech/ARMINES PERSEE
ITM POWER (TRADING) LIMITED
HEXAGON RAUFOSS AS
BUNDESANSTALT FUER MATERIALFORSCHUNG UND -PRUEFUNG
HOCHSCHULE ESSLINGEN
UNIRESEARCH BV

Sub project(s)

Sub project 1

Country: Netherlands
Address:
LEEMANSWEG 15 6827 BX ARNHEM
Sub project categories
Research

Project Id: 1065
This project datasheet was last updated on : 21.11.2017
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