MOBYPOST: MOBility with Hydogen for POSTal delevery

Type of project: Funded by the Fuel Cells and Hydrogen Joint Undertaking (FCH JU, FP7)
February 2011 → January 2015

Coordination:

Project coordinator and contact person for infrastructure:
Mr. Michel ROMAND (Ing), UTBM(FCLAB), Belfort, France
Michel.romand@utbm.fr

Contact person for Vehicle:
Dr. Abdesslem Djerdir, UTBM (FCLAB), Belfort, France
FCLAB Research federation, FR CNRS 3539
IRTES-SET, EA 7274
Abdesslem.djerdir@utbm.fr

Partners:

La Poste	: La Poste
UTBM(FCLAB/IRTES-IFSTTAR)	: Université de Technologie de Belfort Montbéliard (FCLAB Research federation)
MahyTec	: Mahytec Sarl
SEZ	: Steinbeis-Europa-Zentrum
MES	: MES SA
DUCATTI-Energia	: DUCATI energia S.p.A.
H2Nitidor	: H2Nitidor s.r.l.

Abstract

MobyPost (http://mobypost-project.eu/) aims to develop a novel sustainable mobility concept. MobyPost proposes to meet the challenge of developing a whole system combining a carbon neutral vehicle with a novel technology based on a solar hydrogen fuel cell system. This is what we call the solar-to-wheel solution.

The advantages of this innovative solution are manifold. Firstly, energy will be produced completely autonomously thanks to the construction of an infrastructure integrating a photovoltaic generator connected to an electrolyser which will allow for hydrogen production. Moreover, as both solar panels and electrolyser will be installed at the same place, energy production will be local. Considering the way of producing energy and the "fuel" produced itself, i.e. hydrogen, environmentally friendly principles are obviously very high on the list of priorities. Finally, a very advantageous progress will consist in enabling the availability of energy on demand, since hydrogen produced but not immediately required will be stored.

MobyPost's consortium includes 8 participants from 4 European countries, out of which 3 are SMEs. It provides complementary knowledge and congregates a balanced group of competencies which comprehends the whole value chain to take into account for MobyPost system's conception and building. Hence, specialists of vehicle's engineering and construction, experts of hydrogen storage with low pressure solutions, designers of systems to produce electricity from commercial photovoltaic solar cells modules as well as designers of systems able to produce hydrogen and engineers for monitoring and system control will be committed to attaining the ambitious project's objectives.

Thanks to its novel technology that can be summarized as a solar-to-wheel concept, MobyPost enables a significant progress of actual state-of-the-art, including:

- A complete solar-to-wheel solution developing an innovative concept for fuel cell electric vehicles and incorporating hydrogen production into existing postal buildings for its utilisation on the spot
- Fuel cell electric vehicle used every day on heavy duty cycle and under demanding climatic conditions (including summer and winter time)
- Autonomous energy production: Hydrogen is produced in an autonomous way by coupling an electrolyser to solar energy and it is directly available to be used by MobyPost vehicles
- Guaranteed safety with low pressure storage: MobyPost implements metal hydride tanks for hydrogen storage, which considerably improves the safety onboard