INTERNATIONAL PARTNERSHIP FOR
HYDROGEN AND FUEL CELLS IN THE ECONOMY

IPHE Country Update December 2015: FRANCE

The IPHE Secretariat requests each IPHE member submit a one-page narrative update on hydrogen and fuel cell (HFC) activities. Please only report actions and developments since the last Country Update and leave Sections blank if there have been no new developments.

Please complete this form and send to secretariat@iphe.net by 19 November 2015.

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1. New Policy Initiatives on Hydrogen and Fuel Cell

- France has voted August 18, 2015 a law on the energy transition that includes hydrogen technologies in the domains of Energy and Transport

- "Conseil Economique Social et Environemental" (CESE), governmental advisory board, has released a report in June 2015 on the energy storage in France in the frame of the energy transition. Three main technologies are considered: STEPs, batteries and hydrogen. CESE has recommended to develop the three technologies in parallel.

- New French Industry: the 34 plans launched by President Hollande in 2013 have been gathered into 9 industrial solutions. The "Energy Storage" Plan dealing with Batteries and Hydrogen has integrated the "Ecological Mobilities" Solution. The main objectives are to install 20 000 new charging points by end 2016, decrease by 30% CO_2 emissions of new vehicles built in France by 2021, create 2 industrial sites in France in Battery & Hydrogen and create 8 to 25 000 jobs in France by 2030 in the Energy Storage sector.

2. Hydrogen and Fuel Cell R&D Update

- Ademe is financing several R&D projects in the so called TITEC initiative.
  14 projects are ongoing since 2012.
  A new call is under evaluation for a total grant of 1,5M€.

- HYTRAC (coordinator: Tronico, budget 26 M€ over 4 years)
  This project aims at developing a high power H2 powertrain (several 100kW) for large vehicles as trucks.

3. Demonstration and Deployments Update

- *Energy Storage*
  - GRHYD (Coordinator ENGIE, total budget 15M€)
    GRHYD project aims at converting intermittent electricity from RE into H2 reinjected in the NG grid. H2 is used in a mixture with natural gas for several usages (heating, hot water, fuel…) to offer different ways to use the electricity. Two demonstrators are installed in Dunkerque area in order to validate the technico-economical business case on three energetic markets:
    • optimization of RE by conversion into « green » H2 followed by storage and valorization into the NG grid ;
    • production and commercialization of Hythane for cities and new quarters;
    • delivery of Hythane fuel for captive fleets (bus…)

  - CryoCapH_2 (Coordinator Air Liquide, total budget 35M€)
    On November 5, Air Liquide debuted its Cryocap technology at its hydrogen production facility in the Normandy region of France. The technology will be used to capture CO2 emissions created during the steam-methane reformation (SMR) of natural gas to produce hydrogen, while also increasing efficiency of production of hydrogen. The Cryocap technology is part of Air Liquide's Blue Hydrogen effort, which aims to de-carbonize 50% of all of its hydrogen production by 2020 for use as a clean transportation fuel. The Cryocap installation in France will be able to capture 100,000 tons of CO2 annually.

- *Power to Gas*
  - Jupiter 1000 (Coordinator : GRT Gas, 30M€)
    This project aims at developing a power to methane demonstrator using four 500 kW water electrolysers (alkaline and PEM) at Fos sur Mer.

- *Mobility*
  - Launch of the first FC Taxi Fleet (Hyundai FCEVs) in Paris and opening of the H2 filling station in Paris December 7, 2015

  - H2 Bus France Launch of a French coalition coordinated by Hydrogène de France. It is a grouping of organizing authorities of transport (AOT) and operators of public transport acting for the implementation of fuel cell electric buses. It is part of the European Bus coalition.

  - HYWAY
    This project is the first fleet deployment of 50 RE-FCEVs around 2 HRS in Grenoble and Lyon area following the French national implementation plan proposed by H2 Mobility France consortium. More than 40 Kangoo ZE-H2 are on the road accumulating currently almost 1 million km.

  - H2ME (FCH JU)
    This project funded by FCH JU will allow the deployment of 3 new HRS in France (Sarreguemines, Rodez and Paris)

  - 3E Motion (FCH JU)
    This project funded by FCH JU aims at deploying H2 FC Buses. The first 5 H2 FC Buses in France will arrive in Cherbourg from 2016.

4. Events and Solicitations

- HyVolution: February, 4-5, 2016 in Paris, Parc Floral de Vincennes (http://hyvolution.fr/fr)
- Hydrogen Territories Days, June 29-30 2016, Grenoble
- Sustainable Mobility Day, September 2016, Grenoble

5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

Several calls for proposal are currently launched.

- Future Investment Initiative
  - PIAVE Generic
    Call for projects for Industrial Projects of Future (minimum budget of 3M€) is carried by BPI France. It aims at the development of expanding industrial projects for the French sectors, as well as projects working in favour of the ecological and energy transition. Projects belonging to the themes of one of the 34 national plans of New Industrial France are targeted in particular those not benefiting from supports dedicated by means of other calls for projects.

  - PIAVE Industry of future
    This call for projects aims at benefiting from dynamics of markets by adapting the industrial offer to the new uses and by taking into account the new technologies, and decomposes into two sectors:
    - "Excellent projects", for strategic industrial projects of R&D and investment carried by single companies or in consortium. It is about projects on sectors of future, to strengthen the excellence of the French industry due to state-of-the-art industrial facilities (experimental lines and demonstrators).
    - "Platforms projects", for projects carried by collectives of companies or their representatives, to set up resources shared to accelerate the deployment of technologies or uses and structure durably branches of industry.

  - Energy Storage and conversion
    The call for projects "Storage and conversion of the energy ", carried by ADEME, concern projects of storage of the energy and the conversion of the electricity in energy vectors. It is a question of developing reliable and economically viable solutions, allowing to insure the supply-demand balance and to guarantee the stability of the network.

  - SME initiative on Energy storage and conversion
    It aims at accompanying and strengthen the capacity of innovation of the SME in the field of the storage and of the conversion of the energy. The Initiative allows to cofinance research projects and development contributing to accelerate the development and the deployment of methodologies, technologies, services and innovative solutions in the field of the storage and

of the conversion of the energy. For that purpose, a multidisciplinary committee selects, within the framework of a procedure favouring the competition and the fate in SME in the community direction, projects of innovation in the particularly strong potential for the French economy.

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