



## INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

### IPHE Country Update May 2016: EC

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#### 1. New Policy Initiatives on Hydrogen and Fuel Cell

- A dedicated Working Group within the frame of the Strategic Forum for Energy Management (SFEM) of CEN-CENELEC has worked for the major part of 2015 to address issues related to Power-to-Hydrogen and the subsequent injection in the natural gas grid. The Group, composed of 60 experts from industry, research, standardisation bodies and the Commission and co-chaired by EC-JRC, published at the end of 2015, a report with a gap analysis, prioritisation of activities and a roadmap covering pre-normative and standardisation issues to be addressed to enable deployment of PtH in the EU  
([http://publications.jrc.ec.europa.eu/repository/bitstream/JRC99525/sfem%20wg%20hydrogen\\_final%20report%20\(online\).pdf](http://publications.jrc.ec.europa.eu/repository/bitstream/JRC99525/sfem%20wg%20hydrogen_final%20report%20(online).pdf) ). A new workshop to identify next steps is organised for the 3-4 May in Brussels.
- As part of the EU's **Integrated Strategic Energy Technology Plan (SET-Plan)**, elaboration of 10 Issue Papers for each of the key actions is taking place to put forward the key problems and suggested options to reach the EU's energy objectives for 2030. Hydrogen and fuel cells are included under Action 8, "Strengthen market take-up of renewable fuels". Consultations of Members States will follow later this year.
- **Renewable Energy Directive II**: legislative proposal by EC under elaboration now, expected to be published as part of the winter package (i.e. very end of 2016). RED II will be very important to define how the binding target of 27% for RES by 2030 will be achieved, including what will drive the uptake of RES in the transport sector. This policy activity is relevant for pure H<sub>2</sub> but also for Power-2-X and CCU. It is worth pointing out that growing synergies with both CCS and CCU might help catalyse the market for hydrogen.
- **New Electricity Market Design Directive**: this will also be part of the winter package and should create the conditions that will help integrate RES. For this policy instrument, the focus is on cross-border integration, capacity mechanisms and better inclusion of various flexibility options. The relevance for hydrogen is in the storage capacity offered, which will facilitate the integration of renewables.
- **Transport Decarbonisation Strategy**: This new EC Communication is expected around summertime, and will outline new CO<sub>2</sub> targets for cars post 2020 + among others, other measures in support of Alternative Fuel Infrastructure including HRS.
- Launch of the "**Strategy for Heating and Cooling**", as part of the Energy Union package, on 16 February 2016. In this strategy, fuel cells are clearly mentioned as one of the emerging technologies capable of reducing the carbon footprint and reducing EU dependency on imported fossil fuels. See <https://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/1-2016-51-EN-F1-1.PDF>



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## 2. Hydrogen and Fuel Cell R&D Update

- A call for tender has been launched on Early Business Cases for Energy Storage. Parties interested to provide input to this study, also from non-European countries, are invited to contact J. Blondelle, and will be called to participate once the contract has been awarded.
- Under the JRC-FCH2JU FWC Rolling Plan 2016 there are a number of activities on harmonisation, the most advanced of which is that on PEMFC cell testing. Aside from active involvement of EU participants to FCH2JU projects in the harmonisation exercise itself, the document has also been sent to organisations/companies in IPHE Member States (US, JP, KR).

## 3. Demonstration and Deployments Update

- As part of the FCH 2 JU project SWARM, the opening of the first public HRS in Belgium took place on 22/04/2016. The station, installed by Air Liquide and located next to Toyota Europe's facilities, offers refuelling for trucks, buses and cars, at 350 and 700 bar. More info on <http://fch.europa.eu/news/swarm-project-first-publicly-accessible-hydrogen-station-opens-belgium>
- Within the FCH 2 JU project Don Quichote, a non-public HRS was opened at the distribution centre of Colruyt (Belgium's largest retailer). The project produces hydrogen from both wind and solar through PEM electrolysis, which is compressed and stored on-site, and used mainly to power the hydrogen fork lift trucks of the distribution centre. More info can be found on [don-quichote.eu](http://don-quichote.eu) .

## 4. Events and Solicitations

- The Fuel Cells and Hydrogen 2 Joint Undertaking, which is the implementing arm of the EC's FCH research and innovation activities, launched its 2016 Call for Proposals on 19 January 2016, deadline 3 May 2016, for an indicative budget of €117.5M.
- At the European Parliament, the Committee on Industry, Research and Energy (ITRE) organised a hearing on Energy Storage on 21 April 2016, reviewing the different options how storage can help the EU reach its Energy Union objectives. The potential role of hydrogen was presented by the newly appointed Secretary General of Hydrogen Europe, Mr Jorgo Chatzimarkakis.
- On 24 and 25 May, the 4th international workshop NOW-NEDO-EC-SHHP on hydrogen Infrastructure for transport will take place in Petten (NL, hosted by JRC).
- The FCH 2 JU has selected its new Executive Director, Mr Bart Biebuyck, previously with Toyota Europe, who will take up function on 16 May 2016.

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

The evaluation of the FCH 2 JU Call 2015 was finalised in October, and the results were adopted by the Governing Board on 18 November. 15 Proposals have been selected for a total value of €110M funding, of which roughly €35M will go to a large demo project contributing to H2 Mobility across Europe and about €34M will go to a large demo project to define the pathway to a competitive European Fuel Cell micro-Combined Heat and Power market.



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### Summary Country Update May 2016: EC

Transportation	Target Number	Current Status	Partnerships, Strategic Approach	Policy Support
Fuel Cell Vehicles <sup>1</sup>	No target		• Addressed through FCH 2 JU Demo projects	• Subsidy per vehicle in demo projects
FC Bus	No target		• Addressed through FCH 2 JU Demo projects	• Subsidy per vehicle in demo projects
Fuel Cell Trucks <sup>2</sup>	No target		No initiatives yet	
Forklift	No target		Not a priority area	• No support policy
H <sub>2</sub> Refueling Stations	Target Number	Current Status	Partnerships, Strategic Approach	Policy Support
70 MPa On-Site Production	No target		• Addressed through FCH 2 JU Demo projects	• Fixed amount of subsidy per HRS installation
70 MPa Delivered	No target		• Addressed through FCH 2 JU Demo projects	• Fixed amount of subsidy per HRS installation
35 MPa On-Site Production	No target		• Addressed through FCH 2 JU Demo projects	• Fixed amount of subsidy per HRS installation
35 MPa Delivered	No target		• Addressed through FCH 2 JU Demo projects	• Fixed amount of subsidy per HRS installation
Stationary	Target Number <sup>3</sup>	Current Status	Partnerships, Strategic Approach	Policy Support

<sup>1</sup> Includes Fuel Cell Electric Vehicles with Range Extenders

<sup>2</sup> As above



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Small <sup>4</sup>	No target		• Medium-scale deployment through FCH 2 JU demo project	• Fixed amount of subsidy per unit
Medium <sup>5</sup>	No target		• Small-scale demo projects via FCH 2 JU	• Funding dependent on power level
Large <sup>6</sup>	No target		• Small-scale demo projects via FCH 2 JU	• Funding dependent on power level
District Grid <sup>7</sup>	No target			
Regional Grid <sup>8</sup>	No target			
Telecom backup	No target			
<b>H<sub>2</sub> Production</b>	<b>Target<sup>9</sup></b>	<b>Current Status</b>	<b>Partnerships, Strategic Approach</b>	<b>Policy Support</b>
Fossil Fuels <sup>10</sup>	No target			
Alkaline Electrolysis	No target			
PEM Electrolysis	No target			

<sup>3</sup> Targets can be units installed and/or total installed capacity in the size range indicated

<sup>4</sup> 0.3 kW – 4.9 kW (e.g., Residential Use)

<sup>5</sup> 5kW – 299kW (e.g., Distributed Residential Use)

<sup>6</sup> 0.3MW – 0.9MW (e.g., Industrial Use)

<sup>7</sup> 1MW – 29MW (e.g., Grid Stability, Ancillary Services)

<sup>8</sup> 30MW plus (e.g., Grid Storage and Systems Management)

<sup>9</sup> Target can be by quantity (Nm<sup>3</sup>, kg, t), by percentage of total production, efficiency capabilities \*\*\*

<sup>10</sup> Hydrogen produced by reforming processes



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By-product H <sub>2</sub>	No target			
<b>Energy Storage from Renewables</b>	<b>Target<sup>11</sup></b>	<b>Current Status</b>	<b>Partnership, Strategic Approach</b>	<b>Policy Support</b>
Power to Power <sup>12</sup> Capacity	No target			
Power to Gas <sup>13</sup> Capacity	No target			

<sup>11</sup> Can be expressed in MW of Installed Capacity to use the electricity from renewable energy generation and MWh of stored energy equivalence \*\*\*

<sup>12</sup> Operator has an obligation to return the electricity stored through the use of hydrogen back to electricity \*\*\*

<sup>13</sup> Operator has the opportunity to provide the stored energy in the form of hydrogen to back to the energy system through multiple channels (e.g., merchant product, transportation, heating, electricity) \*\*\*