



THE EU FRAMEWORK PROGRAMME
FOR RESEARCH AND INNOVATION

HORIZON 2020

Fuel Cells and Hydrogen Joint Undertaking



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FCH JU set up under FP7

- **Public-Private Partnership** between the EU and the private sector
- Established in 2008 through a Council Regulation(Article 187 TFEU)
- The EU contribution is 470M€, to be matched in cash and in-kind
- Implements the research activities directly related to fuel cells and hydrogen above technology readiness level 3.



Fuel Cells and Hydrogen technologies can contribute to:

Sustainability

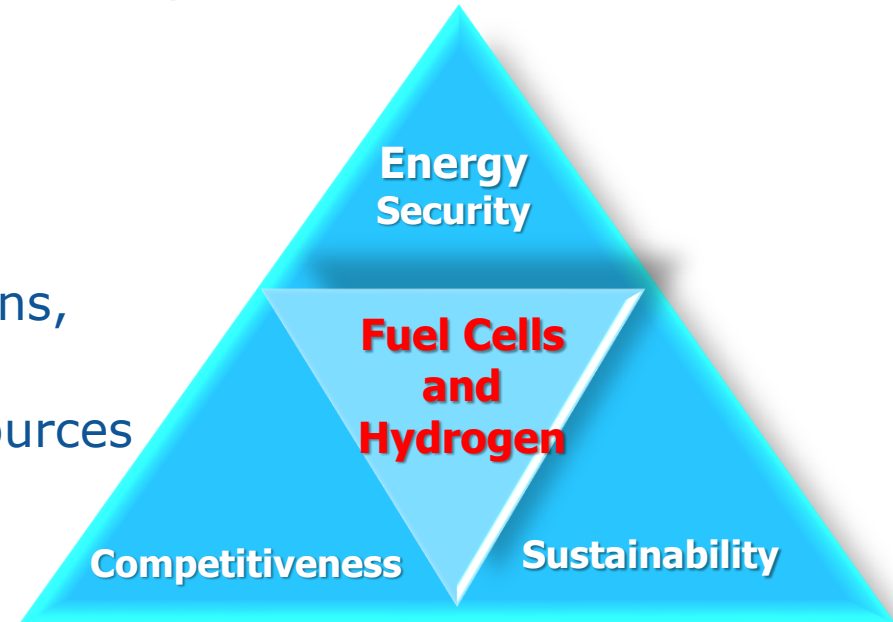
- H₂ is a **clean** carrier of energy
- Transport and stationary applications, generate electricity and heat
- Integration of renewable energy sources including through storage
- Reduction of CO₂ emissions

Energy Security

- Increase independence from unstable outside regions

Competitiveness

- research excellence leading to industry innovation and growth

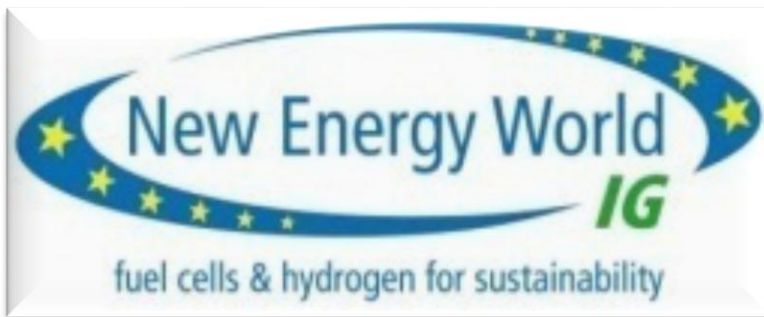


Members



European Union

represented by European Commission



Industry Grouping - IG

Over 60 members

Of which ~50% SMEs



Research Grouping - RG

Over 60 members

Main achievements



Transport:

- Demonstration of 49 buses, 37 passenger cars, 95 small vehicles
- Bus H₂ consumption halved
- 13 new refuelling stations in EU
- H₂ cost <10€/kg



Stationary Power:

- 1000 domestic CHP generators being installed
- Cost -50%, efficiency 90%, lifetime up to 8 years

Early markets:

- 9 fork lifts, 1 tow truck demonstrated
- 19 back up power units installed



FCH JU portfolio of 127 projects

TRANSPORTATION & REFUELLING INFRASTRUCTURE	25 projects 8 demo 14 research 3 CSA	
HYDROGEN PRODUCTION & DISTRIBUTION	28 projects 4 demo 24 research	
STATIONARY POWER GENERATION & CHP	36 projects 9 demo 26 research 1 CSA	
EARLY MARKETS	21 project 13 demo 8 research	
CROSS - CUTTING	17 project	RCS, Safety, Education, PNR, ...



FCH-JU-2013-2

- Publication date: 28 November 2013
- Deadline: **27 February 2014 at 17.00.00**
(Brussels local time)
- Budget: **EUR 23 million**
- 4 topics from different areas, not covered so far by the programme
- Evaluations in March 2014
- Published also through the Participant Portal

Call topics:



Demonstration:

- Large-scale demonstration of **urban buses** including the build-up of the necessary **refuelling infrastructure** (at least 5 urban buses + one refuelling station per site → total of minimum 15 buses in 2 different sites) – max 15 MEUR
- Demonstration of the technological readiness of **H2 production from biogas** including possibility to supply H2 as a high value fuel to a nearby vehicle fuelling stations (installation and continuous operation for at least 25,000 hours + H2 production between 100 and 500 kg/day, associated to a hydrogen storage system, with means of supply to a fuelling station) – max 10 MEUR

Call topics



Demonstration:

- Demonstration of **portable generators, back-up power and/or UPS products** (normally 1-10 KW, but exceptionally up to 50 kW) – up to 250 kW of units in sufficient sites, including at least 1 year operation in the field

Support Action:

- European framework for '**guarantee of origin**' for **green H2** – investigate and initiate 'green hydrogen certificates scheme', based on recent European policy directives

FCH 2 JU under Horizon 2020

EC proposal on the FCH 2 JU

- It was adopted 10 July 2013
- Proposes the continuation of the FCH JU until 2024
- The adoption by the Council is expected on the 1st half 2014
- Start of operational activities and launch of first call for proposals by mid-2014

Comparison with FCH 1 JU



Unchanged:

- Members
- Article 187
- Implementation mainly through calls for proposals
- 75% majority for GB decisions

NEW:

- Two areas of activity only
- More demonstration and market uptake (60%)
- Emphasis on storage of hydrogen from renewable sources
- EU contribution from 470M€ to ~700M€
- In-kind contributions only from members or constituent entities

Operational activities



Transport

- Road vehicles
- Non-road vehicles and machinery
- Refuelling infrastructure
- Maritime, rail and aviation applications

Energy

- Hydrogen production and distribution
- Hydrogen for renewable energy integration and Storage
- Fuel cells for power and combined heat & power generation

Cross-cutting Issues

(e.g. standards, consumer awareness, manufacturing methods)

- **Implemented mainly through calls for proposals**
- **Follow H2020 Rules for Participation, no derogations**



**Thank you for your
attention!**