



EC Country Update

Katarzyna Drabicka

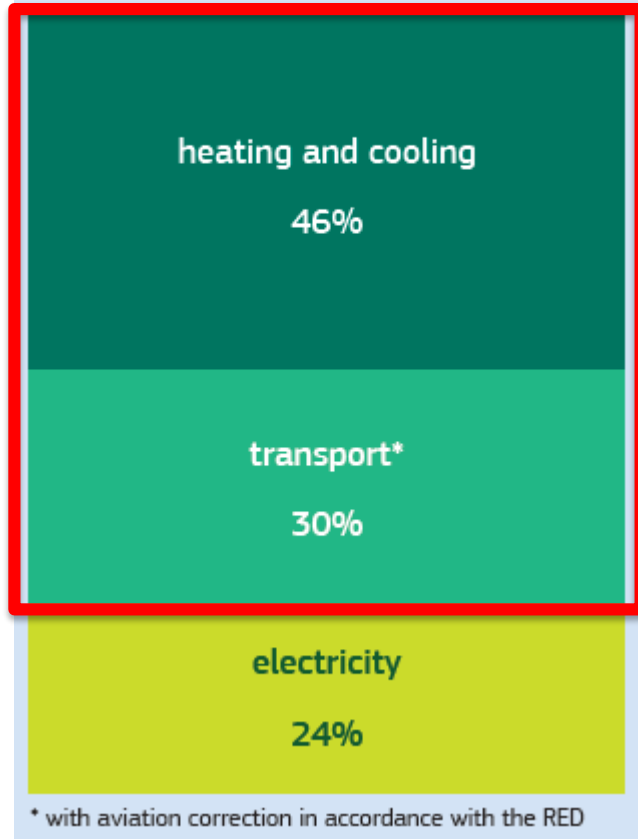
European Commission, DG Research & Innovation, Directorate for Energy

IPHE - 27th Steering Committee meeting – Hamburg, Germany – 27/28 April 2017

Decarbonising other sectors (transport, buildings, industry...)

European
Commission

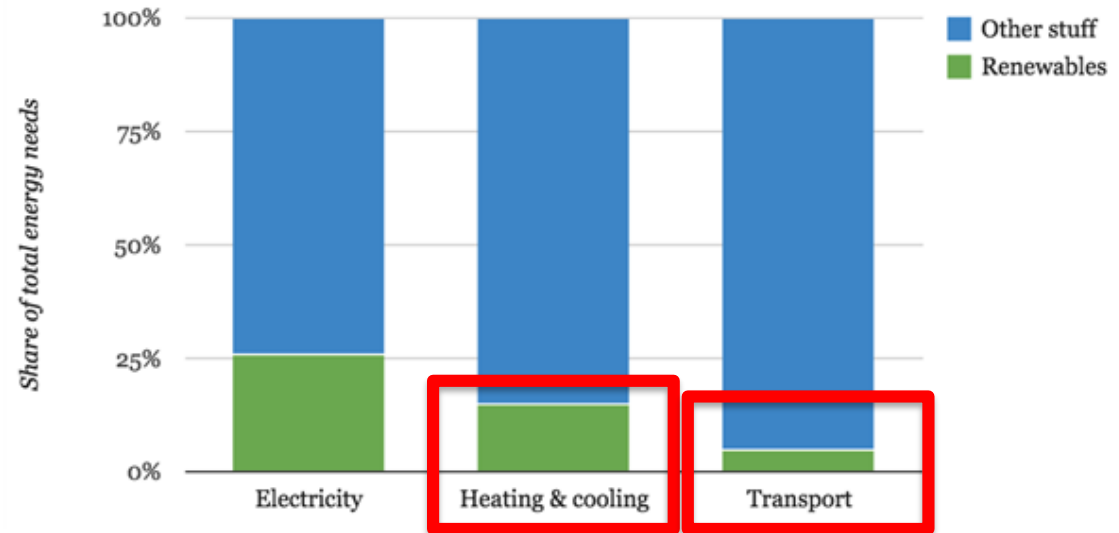
2014 final energy consumption



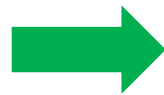
* with aviation correction in accordance with the RED

Source: EC, 2015 renewable energy progress report

Renewable share of the EU energy mix for electricity, transport and heating and cooling:



Source: Eurostat



Hydrogen can help through
its unique capacity for
sector-coupling



EU Climate & Energy Policy update

The Package "Clean Energy for All Europeans" [COM(2016)860]

1. ENERGY UNION GOVERNANCE

2. ENERGY EFFICIENCY

3. NEW ELECTRICITY MARKET DESIGN

4. RENEWABLES

5. R&I

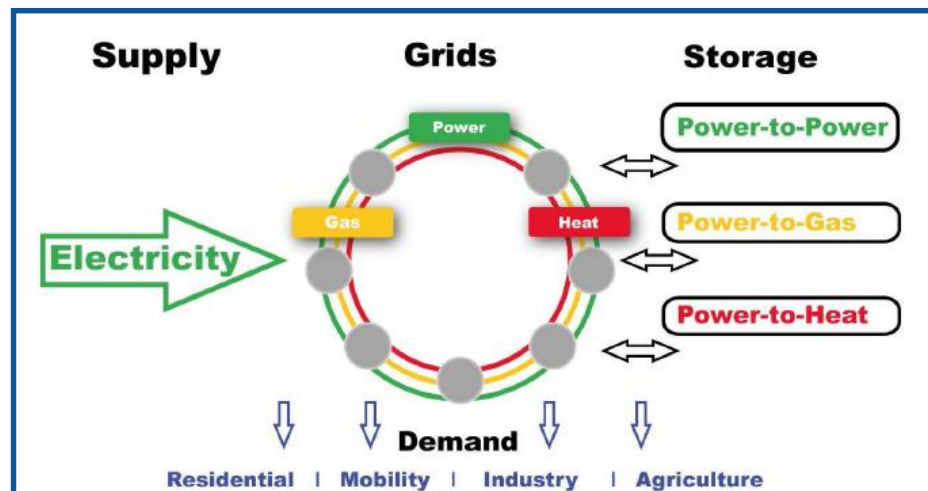
- **Electricity Market Design Directive:**

Definition of energy storage:

"energy storage in the electricity system means the deferring of an amount of the energy that was generated to the moment of use, either as final energy or converted into another energy carrier"

- **Commission Staff Working Document on Energy Storage:**

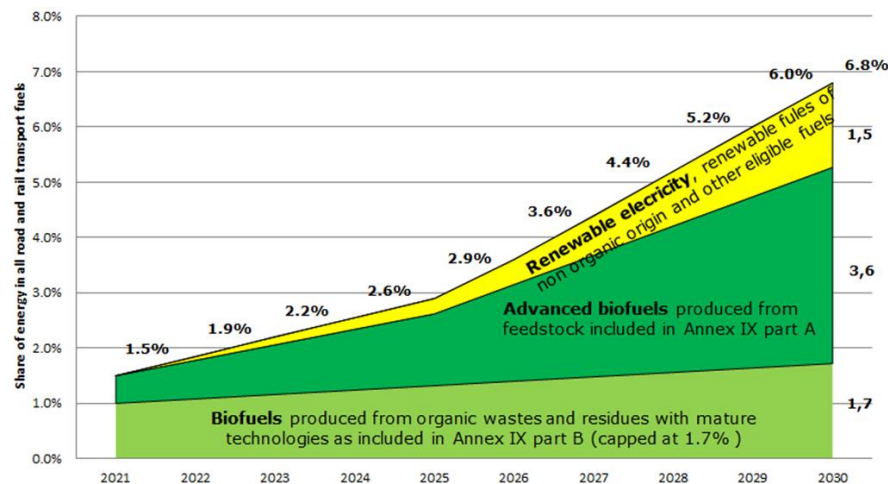
→ acknowledges the role of H2 in provision of long-term storage and its unique potential for sector coupling



New Renewable Energy Directive

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- 27% EU binding target for 2030
- Empowering consumers:
 - Right to **self-consume** & **store energy**
 - Non-discriminatory grid fees & charges
- More targeted, **non-distortive market** support
- More coherence in support schemes across EU
- Revised **renewable** targets in **transport**
 - Emphasis on advanced biofuels & **fuels from non-biological origin**



Research and
Innovation

Emission Trading Scheme reform

EUROPEAN CARBON PRICES ARE TOO LOW TO DRIVE LOW-CARBON INVESTMENT
Rolling front-December EUA price on ICE (€/t)



Source: ICE, Bloomberg New Energy Finance.

- ➔ The EC proposal to substantially strengthen the ETS is currently being discussed between the Member States
- ➔ If the reform succeeds there might be enough incentive to phase out some coal powered generation, meaning more demand for other balancing options (storage included)

FCH JU: Deployment status

Planned numbers of applications (deployed numbers*)



Forklifts:
273 (105)



Cars and vans:
1760 (240)



Refuelling stations:
81 (20)



Bus:
206 (41)



Micro-CHP:
3600 (750)

Off-grid power supplies: 10
Back-up power systems: 19

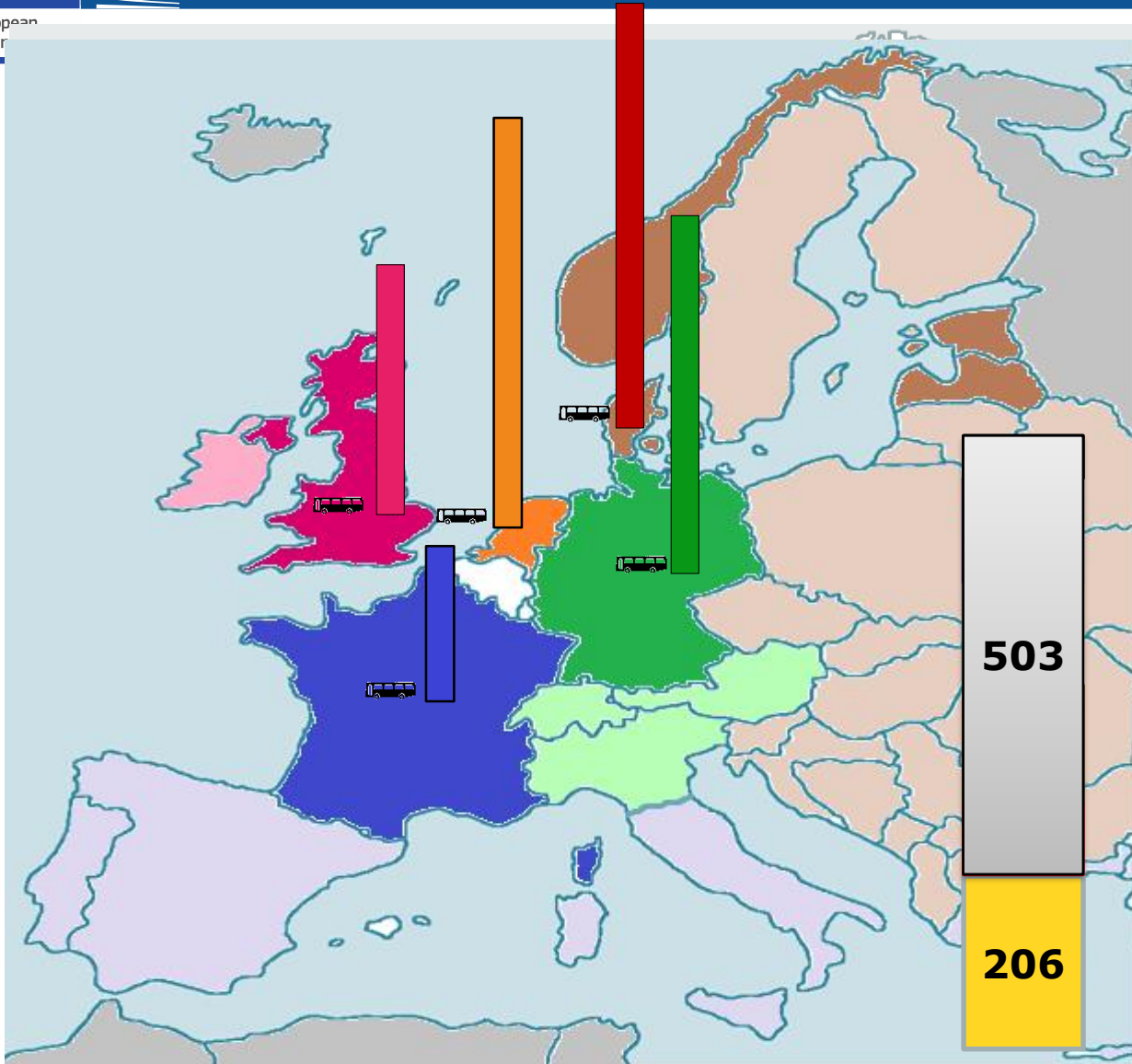
Large micro-CHP x CHP (500 kWe): 3 (2)
H₂ production demonstration plants/
electrolysers: 5 (3)

... CREATING THE BRIDGE BETWEEN TODAY'S ADVANCED TECHNOLOGY
AND TOMORROW'S WIDESPREAD DEPLOYMENT.

*As of 1 October 2016

FCH JU projects triggered lots of appetite in Cities & Regions for FC buses

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- UK cluster – 80 FC buses
- N.E. cluster – 122 FC buses
- German cluster – 116 FC buses
- Benelux cluster – 136 FC buses
- French cluster – 49 FC buses

Over 700 FC buses by 2020

Market worth 1.5B€

FCH JU call 2017

Call identifier: H2020-JTI-FCH-2017-1

Total budget : EUR 116 million

Publication date: 17 January 2017

Deadline: 20 April 2017

	No. of topics	Type of action**	Indicative budget (million EUR)
TRANSPORT PILLAR	3	RIA	11.75
	4	IA	42.5
ENERGY PILLAR	7	RIA	20.5
	5	IA	32.5
CROSS-CUTTING ISSUES	3	RIA	8.75
	2	CSA	
Total Call	24 topics	3 types of action	116M€

- **Success rate = 25%** in
2016 (19/77 proposals)

- **SME participation =
25%** in projects over
the last 3 years

** *RIA= Research and Innovation Action, IA= Innovation Action, CSA= Coordination and Support Action*



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Studies/procurements

TOPIC	Status
1. "Business models and financing arrangements for the commercialisation of stationary fuel cells"	In final stage
2. "Power to Hydrogen – early business cases"	In final stage
3. "Development of business cases for fuel cells and hydrogen applications for European regions and cities"	Tender published
4. "Hydrogen refuelling stations (HRS) Operational Status System for FCEV users"	ToR under preparation
5. "Establishment of a Stakeholders Platform and implementation of a pilot operation for a Guarantee of Origin Scheme for Green and Low Carbon Hydrogen"	ToR under preparation

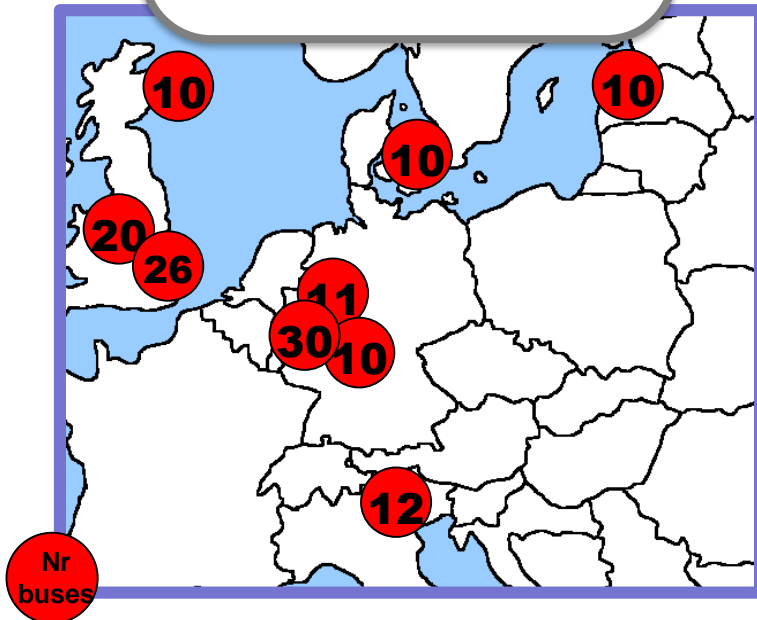
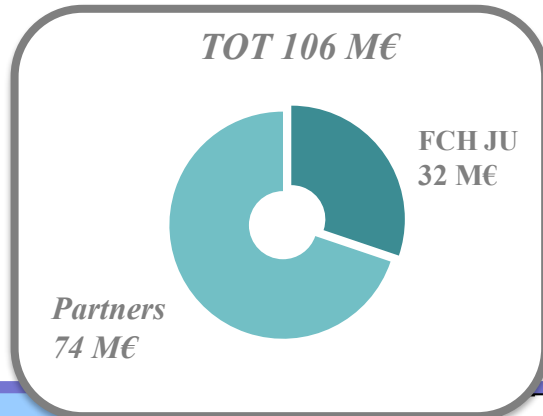
New FCH JU flagship projects (1/2)

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JIVE



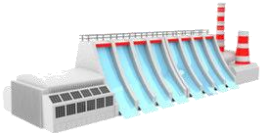
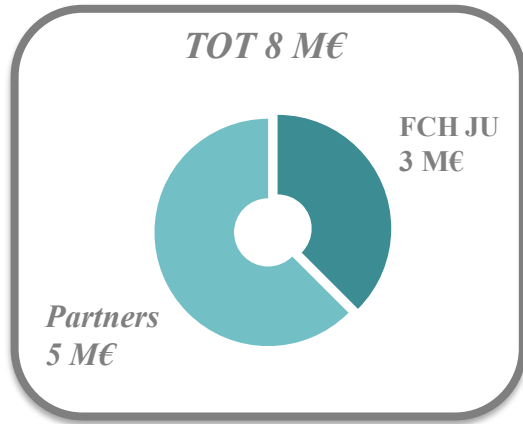
Wide-scale fuel cell bus validation project



- 139 buses, 9 locations
- Coordinated by Element Energy, UK
- 25 partners
- 6 years
- HRS cofunded by EU Connecting Europe Facility (CEF):
 - H2NODES in Latvia (incl. EIB)
 - MEHRLIN in Germany, UK and Italy

New FCH JU flagship projects (2/2)

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In Innsbruck,
Austria



DEMO4GRID

Demonstration of a 4 MW
pressurised alkaline
electrolyser

- Located in Innsbruck, Austria
- Use of hydrogen for heating of industrial bakery ovens
- Grid services
- 6 partners
- 5 years

2017 Stakeholders Forum & Programme Review Days: the 10th Anniversary

- ✓ 22-24 November 2017
- ✓ Brussels, Belgium
- ✓ You are invited!

More info soon on:

<http://www.fch-ju.eu/>





THANK YOU FOR YOUR ATTENTION

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