

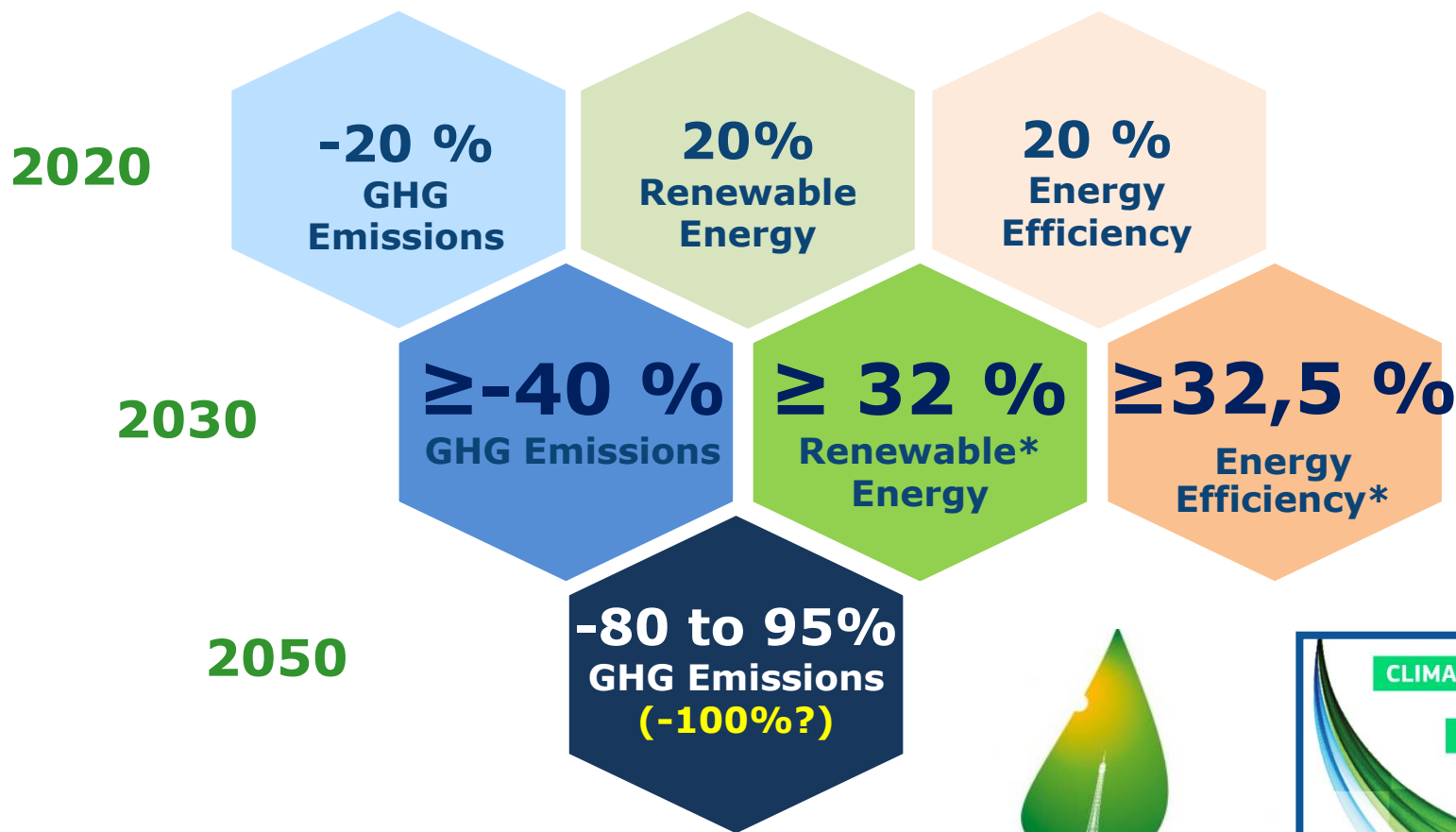


International Partnership
for Hydrogen and Fuel Cells
in the Economy

European Commission Country Update

Katarzyna Drabicka
30th IPHE Steering Committee Meeting
Pretoria, South Africa
6 December 2018

European Union's targets for climate & energy

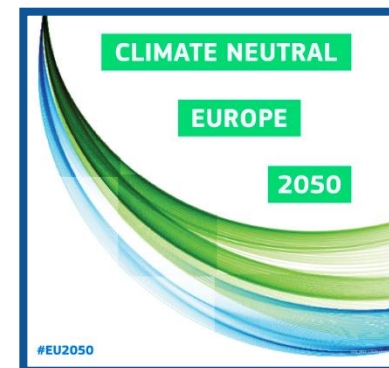


**targets revised upwards in 2018*

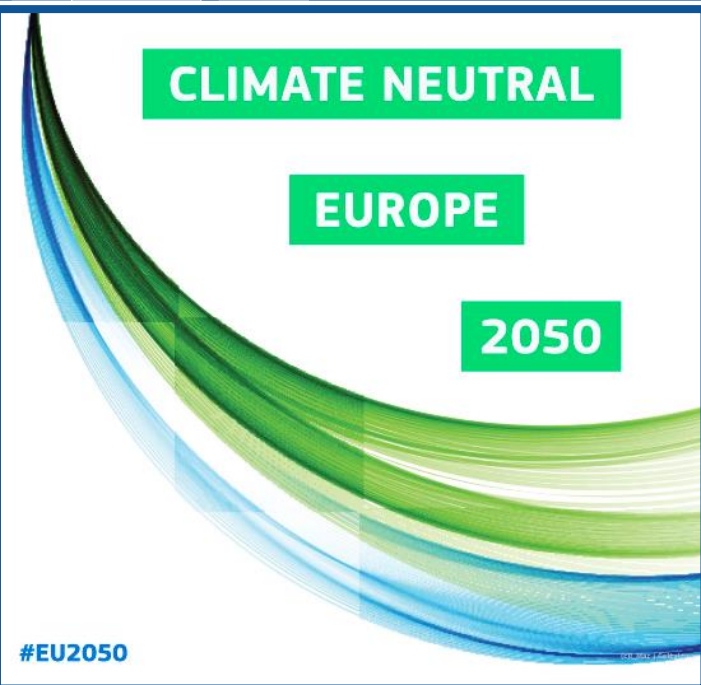
Research and
Innovation



COP21 · CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE



EU strategy for a climate neutral Europe by 2050



- 8 different scenarios
- The Commission favours “climate neutrality” by 2050
- “[...]The role of hydrogen is likely to become more prominent in a fully decarbonised energy system [...]”.
- “[...] EU research should focus on transformational carbon-neutral solutions in areas such as electrification (renewables, smart networks and batteries), **hydrogen and fuel cells, energy storage, carbon-neutral transformation of energy intensive industries**, the circular economy, the bio-economy and sustainable intensification of agriculture and forestry [...]”.



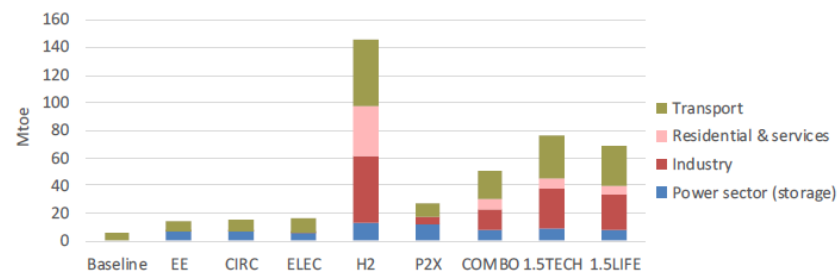
Brussels, 28.11.2018
COM(2018) 773 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE, THE COMMITTEE OF THE REGIONS AND THE EUROPEAN INVESTMENT BANK

A Clean Planet for all
A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy

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Figure 32: Consumption of hydrogen by sector in 2050



Note: "Residential & services" also includes agriculture.

Source: PRIMES.

The Hydrogen Initiative (1/2)



"[...] We, the signatories of this initiative, gathered in Linz, Austria, on the 17th and 18th of September 2018, collectively aim to maximise the great potentials of sustainable hydrogen technology for the decarbonisation of multiple sectors, the energy system and for the long-term energy security of the EU.

[...]

Furthermore, we encourage third countries and industry to join our efforts set out in this declaration to promote worldwide supporting framework for sustainable hydrogen technology [...]."

**The EU Energy
Ministers**



The Hydrogen Initiative (2/2)

Member States Support



Member States, EFTA and EC



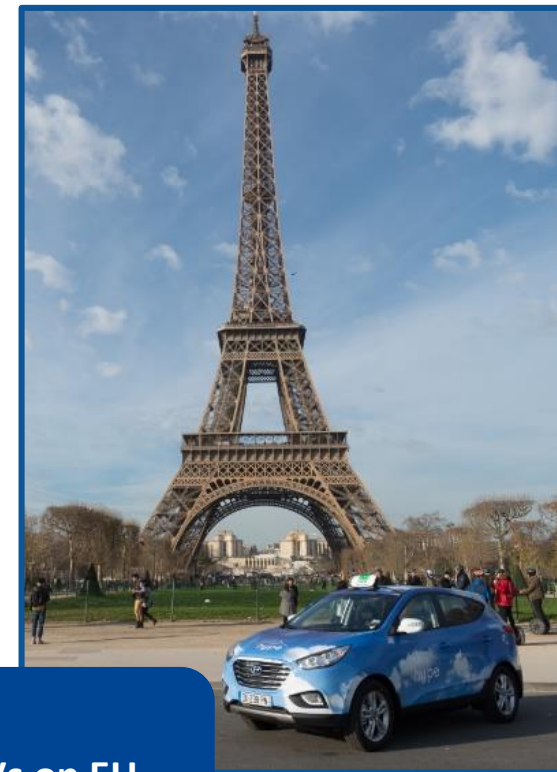
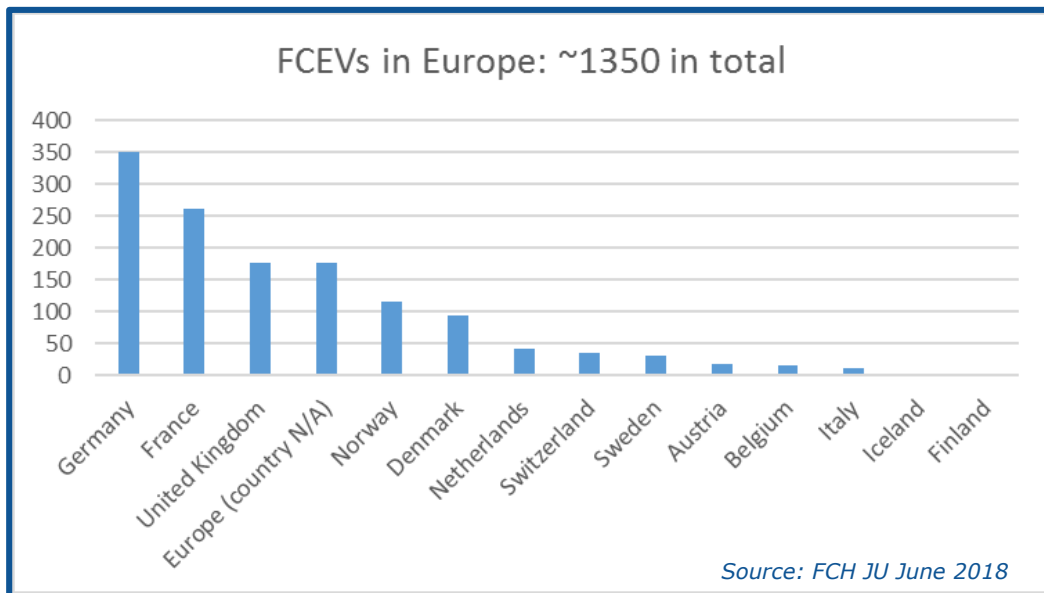
Innovation

Stakeholder Support



Deployment status: FCEVs

European
Commission



FCH JU demo projects -status

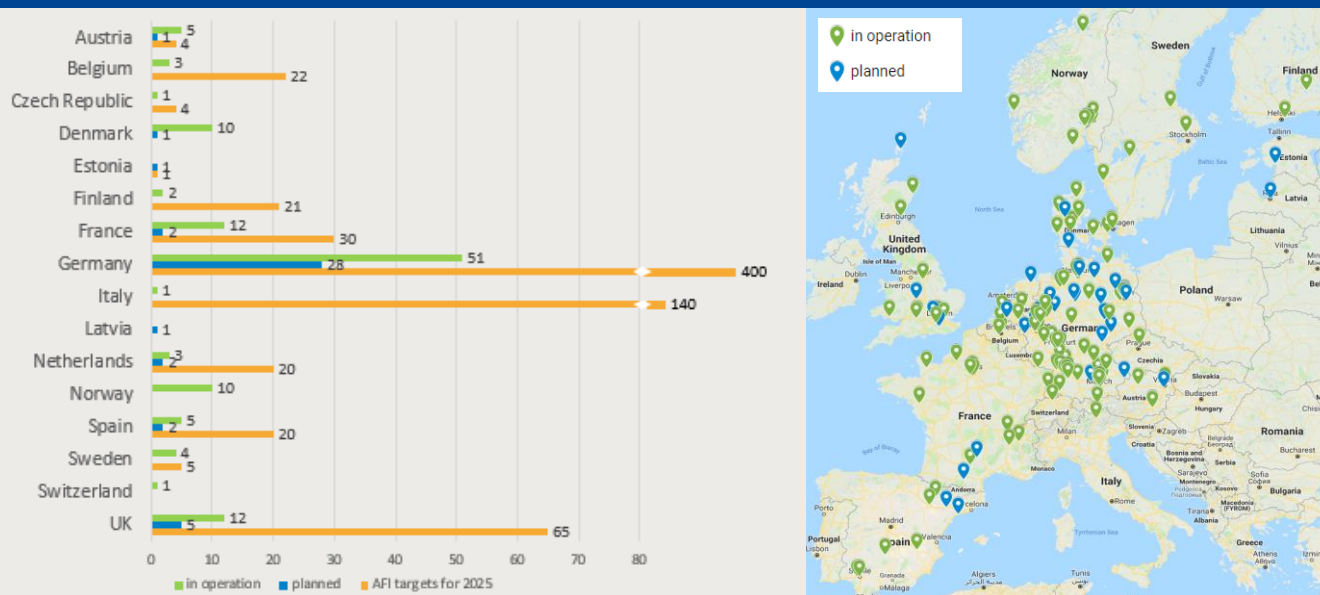
Year (call)	Projects	#FCEV	Already deployed	Countries
2008	<u>H2MOVES</u>	19	19	2
2010	<u>Hytec</u>	24	24	3
2011	<u>SWARM</u>	35	13*	3
2013	<u>Hyfive</u>	133	133	6
2014	H2ME	325	245	9
2015	H2ME 2	1109	136	10
2015	BIGHIT	10	5	1
2017	ZEFER	180	50	3

~ 1350 FCEVs on EU roads today, out of which > 600 deployed via FCH JU. Another 1300+ vehicles contracted by FCH JU

Deployment status: HRS

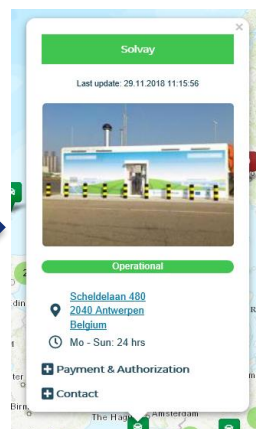
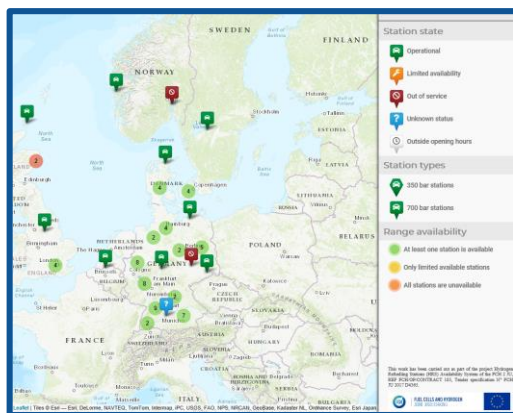
European
Commission

Under the Alternative Fuels Infrastructure Directive EU countries have plans for 840 HRS by 2025



- Europe has ~120 HRS in operation, of which 32 funded by FCHJU.
- FCH JU has additional 51 HRS on contract

Source: FCH JU 2018



FCH JU funded HRS availability system/map:

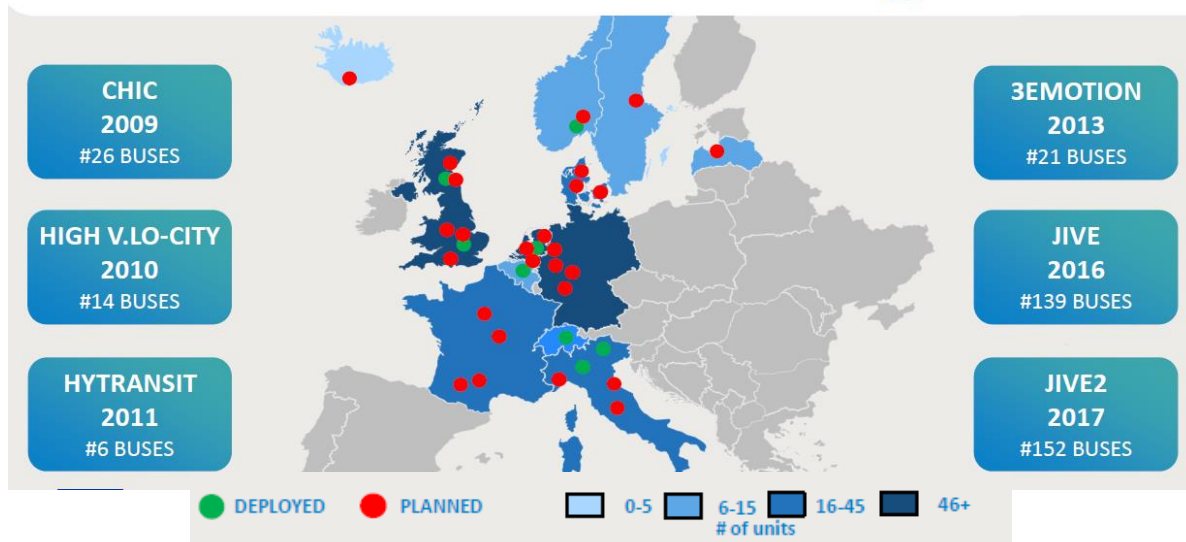
<https://h2-map.eu/>

Deployment status: buses (FCH JU)

The momentum for hydrogen buses continues in Europe:
67 buses in operation, another 300+ planned

Deployment of 360 buses

From testing the technology to widespread deployment



ADL ADDS HYDROGEN FUEL CELL
TECHNOLOGY TO THE MARKET'S
WIDEST RANGE OF LOW AND ZERO
EMISSION BUSES

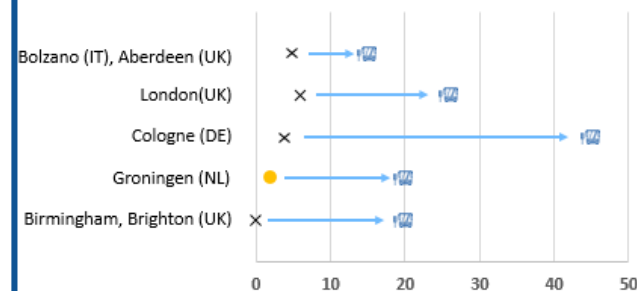
Published: 27 Nov 2018



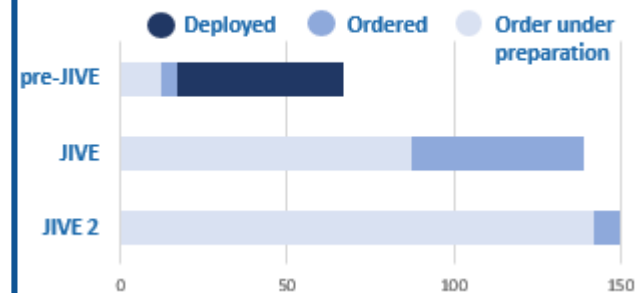
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Increase of scale of bus orders

X : in 2013/14 ● : in 2017 🚌 : in 2018/19



Buses deployment status



Call 2018:

- ✓ 19 topics selected for ~70M€ funding
- ✓ Highlights: heavy-duty applications (trucks, ships, high-capacity HRS...), upscaling electrolyzers (20 MW+ PEM, steam demo), solar H₂, H₂ carriers, port applications, safety in tunnels...

Call 2019:

- ✓ Under finalisation
- ✓ Indicative budget: ~80M€
- ✓ Publication date: mid-January 2019 → Deadline: April 2019
- ✓ Highlights*: logistics vehicles, hybridisation, MW fuel cells for shipping, high temperature electrolysis, admixture of hydrogen in NG grid (incl. PNR/standards), training of responders, fuelling protocols HDV...
- ✓ International collaboration with IPHE countries is encouraged for all topics
- ✓ International collaboration in support of Mission Innovation Hydrogen Challenge is specifically recommended for some topics (incl. funding)
- ✓ **Pending approval*

Thank you very much for your attention!

More info:

- European Commission: <https://ec.europa.eu/>
- FCH JU: www.fch.europa.eu
- Hydrogen Europe: www.hydrogeneurope.eu
- Hydrogen Europe Research: www.nerghy.eu