



EU-Japan Centre for Industrial Cooperation

Hydrogen Webinar

25 March 2022, 09:00 – 12:00

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Clean Hydrogen JU governing structure



- Clean Hydrogen JU: Increased budget while priority on two pillars: production & storage and distribution - only JU producing H₂ (recital 58)
 - JU EUR 2Bn public/private investment
 - HE Cluster 5 allocates EUR 50 million from the 2022 budget + EUR 150 million until 2025 to the **Catalyst** Programme, which includes clean H₂ among 4 priorities
- **Synergies with PP dealing with hydrogen applications**, including through joint calls, coordinated calls, subsequent calls – SBA structured collaborations with zero emission road, waterborne, railway, clean aviation, processes for the planet, clean steel + periodical reporting to GB
- Clean Hydrogen Research and Innovation Day (new SBA requirement) as part of hydrogen week - a body providing scientific advice should not be established

Clean Hydrogen JU SRIA priorities and AWP

SRIA Scientific priorities matched by the AWP 2022:

- Renewable **Hydrogen production** (77 M EUR R&I Investment main focus on electrolysers + 25 M EUR for Hydrogen Valleys) = 33.5% total budget
- **Hydrogen storage and distribution** (49 M EUR R&I Investment) = 16.3% total budget
- **Hydrogen end uses:**
 - **transport applications** (98 M EUR) = 32.6 % total budget – Aviation and Maritime
 - **Clean heat and power** 24.5 M EUR = 8.1% of total budget
- **Cross-cutting activities** including Hydrogen Valleys (52 M EUR) = 17% of total budget

International Cooperation SRIA priorities



Support the Commission, including through technical expertise, in its international initiatives on the hydrogen strategy:

- International Partnership for Hydrogen Economy and fuel cells in the Economy (IPHE)
- Mission Innovation (Clean Hydrogen Mission)
- Clean Energy Ministerial (CEM) Hydrogen Initiative

Contribute to the development of regulations and standards – elimination of barriers, supporting interchangeability, inter-operability, and trade across the internal market and globally

- Energy Agency (IEA) Hydrogen Technology Collaboration Programme (HTCP) executive committee

Strengthening EUs cooperation with Africa – green H2 win-win



Electrolysis demonstrations for energy storage and greening Industry

Electrolysers, M€ FCH JU support



30 Projects



HRS



Steel industry

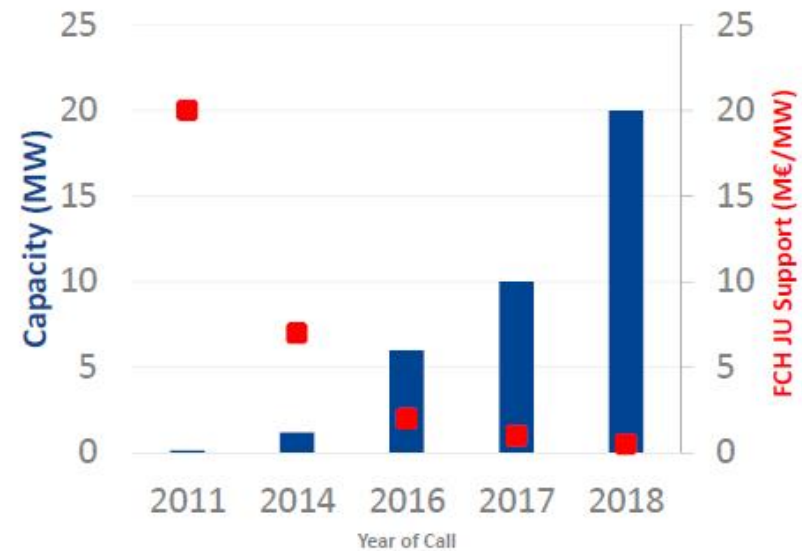


Refineries

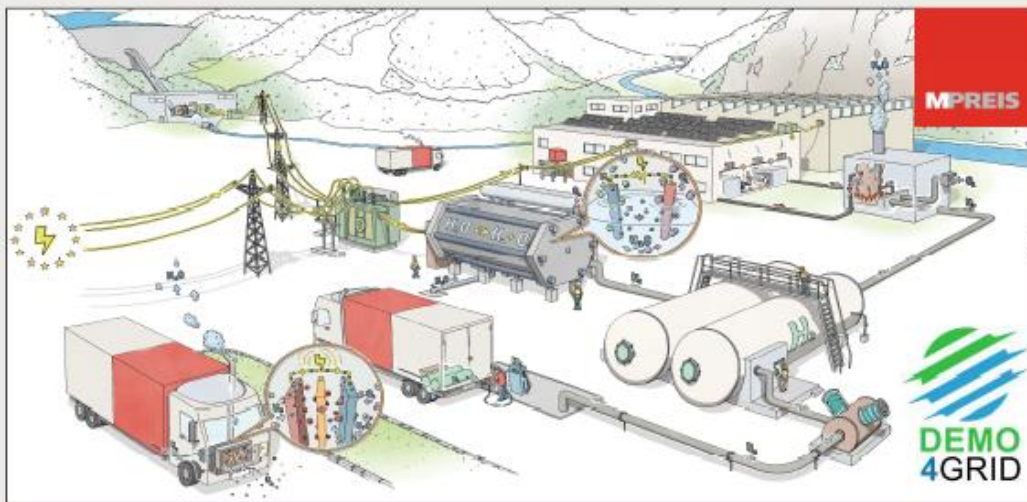


Food industry

Electrolyser Demo Projects



Big industries are discovering the potential of Hydrogen



3.4 MW electrolyser at MPREIS (bakery plant) in Völs

- The green H₂ is produced from hydro-electricity (from Alps)
- 1st phase: it is used to heat the ovens to bake the bread
- 2nd phase: distribution by using H₂ trucks

DURATION: 2017-2022; project 7.74 M€ (2.93 M€ by FCH-JU)



6 MW electrolyser at VOESTALPINE (steel plant) in Linz

- The green H₂ is produced from hydro-electricity (from Alps)
- It is used to produce steel in this way the industry can make a first step towards CLEAN STEEL

DURATION: 2017-2021; project 18 M€ (12 M€ by FCH-JU)

Big industries are discovering the potential of Hydrogen



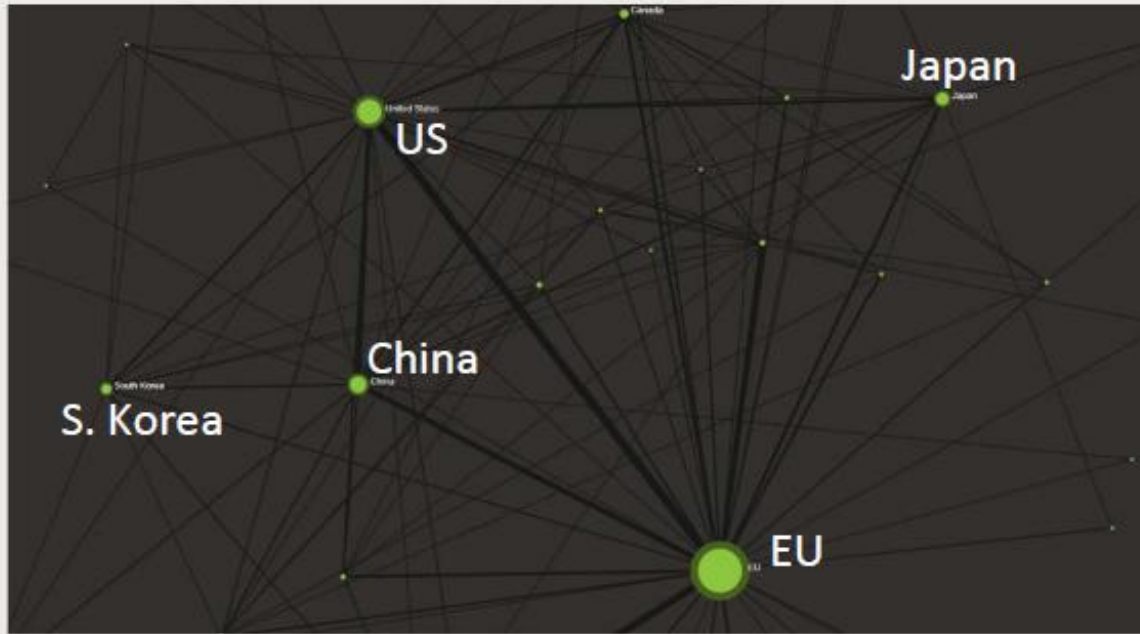
10 MW electrolyser at SHELL in Köln

- The green H₂ is produced from curtailed wind energy due to a full electricity grid.
 - The produced H₂ will be injected in their current H₂ stream used for desulfurization; later to be used in fuelcell vehicles
- DURATION: 2018-2022; project 16 M€ (10 M€ by FCH-JU)**

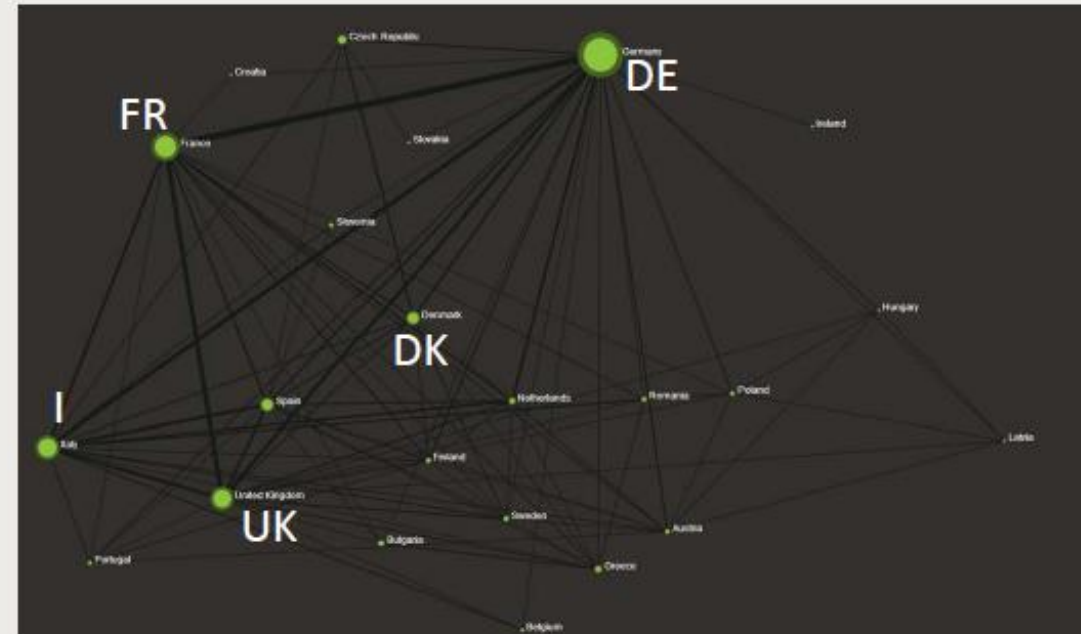
150/30kW Reversible electrolyser, Salzgitter

- To operate a high-temperature Electrolyser as reversible generator (rSOC, reversible Solid Oxide Cell) in the industrial environment of an integrated iron and steel work.
 - The system is flexible to produce either H₂ or electricity.
- DURATION: 2016-2019; project 4.5 M€ (100% by FCH-JU)**

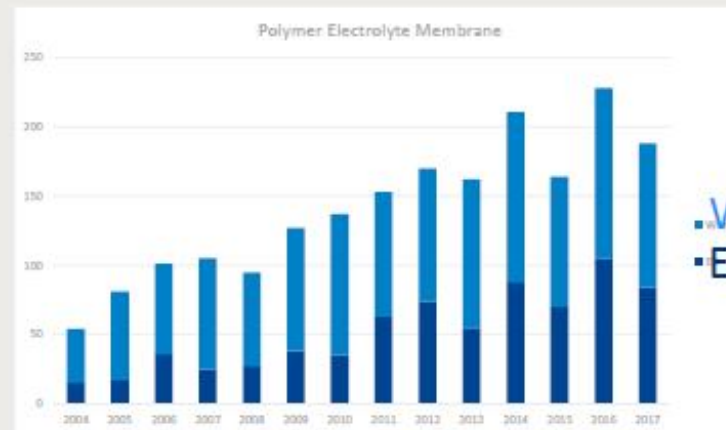
PEM electrolysis: Number of publications, patents, etc. 2004



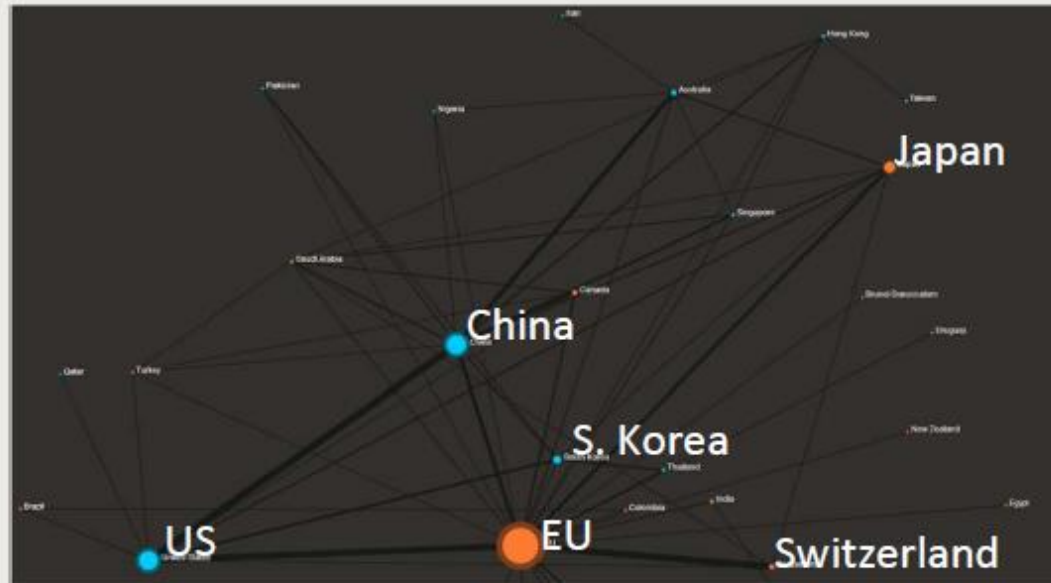
EU 823, US 430, China 270, JPN 193, S. Korea 143



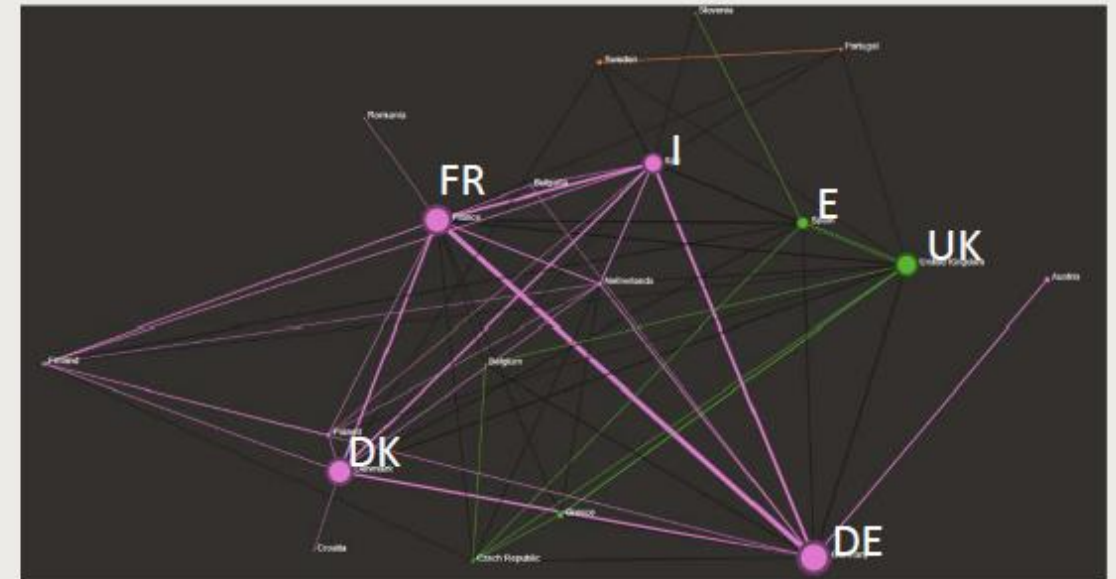
DE 224, FR 136, I 116, UK 111, DK 62



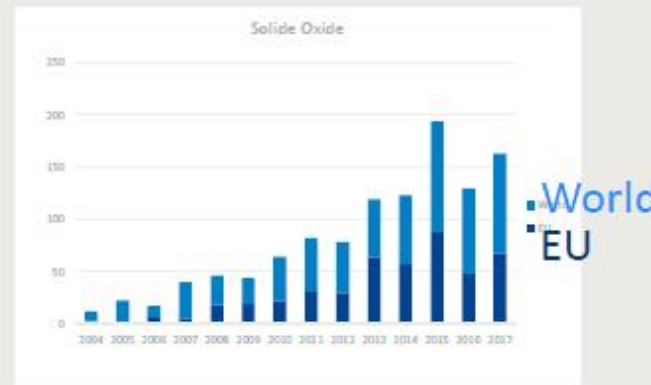
SOE electrolysis: Number of publications, patents, etc. 2004 - 2017



EU 508, China 255, US 246, JPN 121, S. Korea 74



DE 117, FR 103, DK 94, UK 79, I 69, E 40



THANK YOU!

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