



Making an impact on the clean energy transition

DRIVING FORWARD FUEL-CELL TECHNOLOGY



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The price dividend

Fuel-celled cars remain expensive, partly because the technology behind them is still relatively costly. Driving down those costs while enhancing performance are among the main goals of the FCH JU, which is helping to stimulate market growth and get greener vehicles on to Europe's roads. FCH has paired top expertise from academia and the industry to drive its goals forward.

The FCH JU has funded projects such as VOLUMETRIQ, PEGASUS, CRESCENDO and GAIA to design and develop solutions to make proton-exchange membrane fuel cells a lot more affordable.

Cost-efficient

One way to make fuel cells more affordable will be to reduce the use of expensive materials (e.g. platinum for the catalysers). Several projects have been investigating how to reduce or completely displace such material while ensuring that the cells' key performance indicators (power density and durability) continue to improve.

Innovative manufacturing techniques with reliable embedded quality controls are another approach being pursued by the FCH JU to increase EU capacity for the production of polymer electrolyte membranes (PEM). Overall, the goals are to lower manufacturing costs, ensure sufficient capacity to meet projected future market demands, and respecting the automotive industry's demanding quality standards.

Fuel-cell technology is still a relatively expensive exercise for the automotive industry. The FCH JU has brought together industry and university experts to drive down costs and increase performance. The aim is to pry open market potential, ensuring a greener future for the EU's transport sector.



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KEY ACHIEVEMENTS

**REDUCTION OF -80 % IN PT LOADING
(FROM 1.5 G/kW IN 2008
TO AVG. 0.3 G/kW IN 2017)**

ensuring lower costs for membrane electrode assembly

DURABILITY

over 5 000 hours

1.55 W/cm²

Single cell power density target in 2020

POWER DENSITY:

1W/cm² WAS THE 2016;

1.3 W/cm² WAS ACHIEVED IN 2017

resulting in shorter, lighter and cheaper stacks for the same power output.

TOO EXPENSIVE

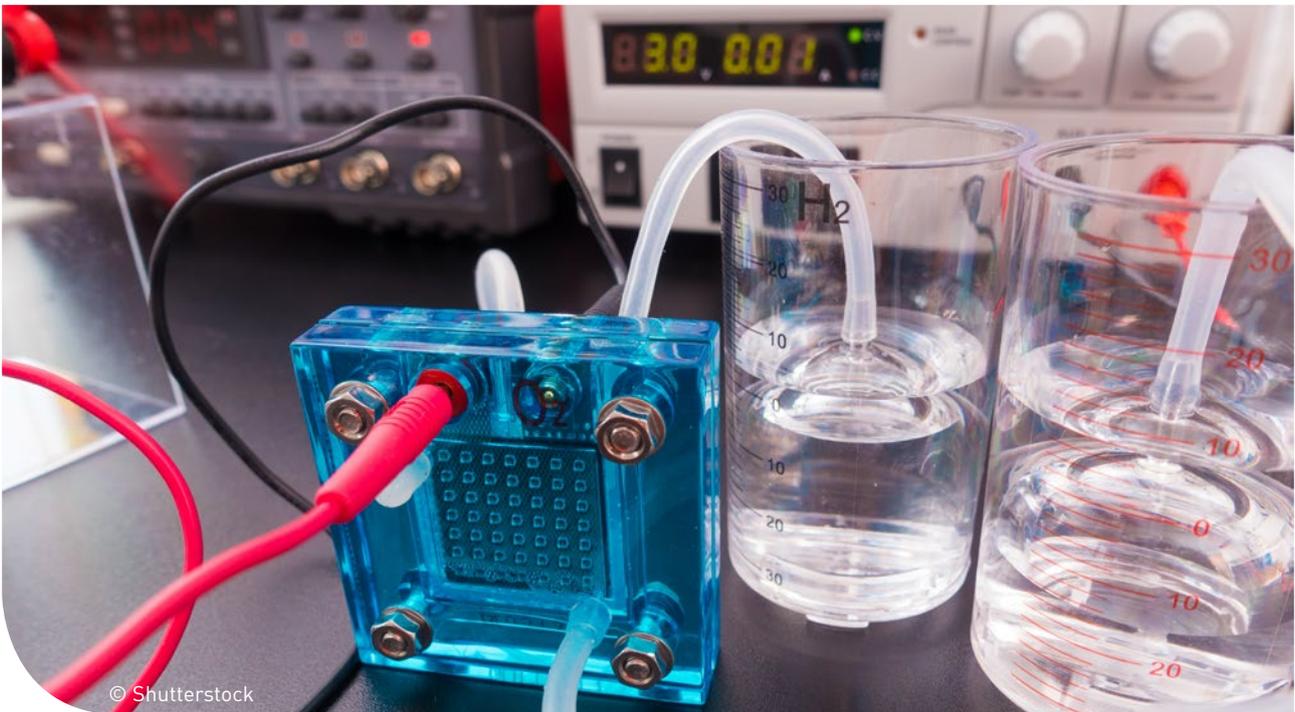
Fuel cells stacks are expensive, creating obstacles to marketing and commercial entry for a globally competitive automotive industry in Europe.

MORE FOR LESS

FCH JU is trying to stimulate market growth in an area of high potential by supporting research that tackles key commercial problems. **The goal?** The goal is to develop the projects by bringing together key industry and academic experts to drive down the costs behind the technology. **Key results?** FCH JU funded projects have so far demonstrated that it is possible to reduce costs of fuel cell production while improving performance durability for large-scale automotive fuel cell commercialisation.

IMPACT

**140 EUR MILLION FUNDING TO
DRIVE DOWN COSTS AND INCREASE
PERFORMANCE**



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www.fch.europa.eu/page/fch-ju-projects

VOLUMETRIQ <http://www.volumetriq.eu/>

INSPIRE <http://www.inspire-fuelcell.eu/>

CRESCENDO <http://www.crescendo-fuelcell.eu/>

GAIA <http://www.gaia-fuelcell.eu/>



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