Making an impact on the clean energy transition

TRANSPORT

HYDROGEN DRIVING SHIFTS INTO GEAR

In the real world

Hydrogen-powered vehicles produce only water vapour as waste and will complement battery electric vehicles with lower CO_2 emissions across Europe. But real-world demonstrations and upfront investment were required to test this emerging technology in practical driving conditions.

A project co-financed by the FCH JU – Demonstration of Small 4-Wheeled fuel cell passenger vehicles Applications in Regional and Municipal transport (SWARM) – showed that hydrogen-powered vehicles are both practical and powerful. Launched in 2012 and completed in 2017, SWARM helped UK SMEs to develop and deploy a fleet of small hydrogen-powered passenger vehicles. One of these SMEs has developed a new business model to offer their clients in rural Wales, UK, clean transport services using their vehicle. The other one is looking for investors or partners to take their vehicle to the next stage of development or manufacturing.

Powering through

The project brought together research centres, new SMEs and other larger industrial stakeholders which allowed, through intense collaboration, the development, manufacturing and testing of three concept car models, two of which have already been their second-generation products and have been deployed in a small fleet of 11 vehicles. The vehicles have been tested in various European regions, from Wales to North-western Germany. A fleet of one of the vehicles will soon manufactured and used in an innovative clean transport services business model in rural Wales. The other one is seeking investors or partner to move to the next stage of development or manufacturing. With the capacity to be built in two configurations, four sitter for taxi purposes or two sitter with cargo capacity for small logistic purposes, we might soon see it in our roads.

Not long ago, the idea that hydrogen-powered vehicles would some day cruise along European roads was mainly 'hot air'. However, the FCH JU has co-funded a project which helped two UK SMEs develop and demonstrate their concept hydrogen-powered vehicles to bring them closer to commercialisation.
One of these SMEs will use their fleet of vehicles in a new business model offering transport services to their clients in rural Wales. The other one is looking for investors or partners to take their vehicle to the next stage.

HYDROGEN DRIVING SHIFTS INTO GEAR

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WHAT'S AT STAKE?

SMEs demonstrate the feasibility of small hydrogen-powered vehicles on European roads to help accelerate transition to a zero-emissions transport sector.

THE ROAD TO SUCCESS

The FCH JU worked with universities and SMEs to lay the foundations for the development and manufacturing of small hydrogen-powered vehicles. **The goal?** To enable these stakeholders to make the key technical innovations necessary for such vehicles to be available for new zero-emission transport services for European customers. **Key results?** The FCH JU-funded project included a demonstration phase that uncovered many of the requisite innovations that helped to improve later generations of vehicles. The project also financed the necessary hydrogen refuelling stations to test the vehicles and the business model.

KEY ACHIEVEMENTS

3
new refuelling stations added to existing networks

1
SME in negotiation to mass manufacture their vehicle

3
new small hydrogen-powered passenger vehicle models

13
vehicles built or demonstrated in the project

1
new business model offering transport services in rural communities;

0.54
kg H2/100km for the Microcab

750
kg weight of the Microcab

IMPACT

UP TO 100 %
savings on CO2 emissions compared to conventional vehicles

EUROPEAN SMES DEVELOPED THE FIRST PILOT FCEVS IN EUROPE

FIND OUT MORE

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

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FUEL CELLS AND HYDROGEN JOINT UNDERTAKING

A partnership dedicated to clean energy and transport in Europe