Project Overview

The ZEFER project started in September 2017 and will run until September 2022. The project will deploy 180 FCEVs (Fuel Cell Electric Vehicles) in Paris, London, and Copenhagen. It will demonstrate the viable business cases for captive fleets of FCEVs in operations which can realise value from hydrogen vehicles. ZEFER aims to drive sales of FCEVs to other cities, thereby increasing FCEV sales and improving the business case for HRS (Hydrogen Refuelling Stations) serving these captive fleets.

Project Objectives

- Prove the viable business models for operating FCEVs in high mileage fleet applications
- Gather evidence on the performance of FCEVs as high mileage fleet vehicles
- Demonstrate viable business models for early
 HRS supported captive fleets
- Deploy and test the performance of 180 fuel cell passenger cars in high-mileage fleet operations
- Test the performance of today's best-in-class hydrogen refuelling station technology under significant increased loading compared to current levels
- Ensure widespread dissemination of the technical and business modelling research results to target groups of decision-makers

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This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking (now Clean Hydrogen Partnership) under Grant Agreement No 779538. This Joint Undertaking receives support from the European Union's Horizon 2020 Research and Innovation programme, Hydrogen Europe and Hydrogen Europe Research.



Zero Emission Fleet Vehicles For European Roll-out

ZEFER will demonstrate the viable business cases for captive fleets of FCEVs in operations which can realise value from hydrogen vehicles.



Hydrogen fuel cell electric vehicles are a clean, green alternative to petrol or diesel engines. The ZEFER project aims to give you confidence in the technology and prove the benefits it has on the environment and society.

How far can you travel on a full tank?

The hydrogen vehicles, deployed as part the ZEFER project, average around 100km per kilogram of hydrogen, equating to a vehicle range of 500km per refuel of their five-kilogram tanks. The vehicles deployed refuel on average every 200 km.

How long does it take to refuel?

Filling up on hydrogen at a refuelling station can take a matter of minutes, dispensing at a rate of 1.1 kg/m, comparable to conventional petrol or diesel pumps. Vehicles in Paris and London top up an average of 2.2 kg of hydrogen per refuel.

Are hydrogen vehicles safe?

Since the project started, there have been no safety problems at the refuelling stations or with the fuel cell system. Even those vehicles that have been involved collisions experienced no safety problems with the fuel cell system.

How many refuelling stations are there?

There are 159 refuelling stations across Europe, including 6 HRS in London and Paris with additional HRS in preparation. As the ZEFER project proves hydrogen vehicles as an alternative option, more will be installed to develop strategic infrastructure. At least 45 more are expected to be built by the end of 2022.

2017 ZEFER project commences

APRIL 2018

25 hydrogen vehicles deployed to Green Tomato Cars, London

AUGUST 2018

36 hydrogen vehicles deployed to STEP, Paris

DECEMBER 2018 Roissy/CdG Refuelling station opens

AUGUST 2019

2.1 million kilometres driven by ZEFER project vehicles

SEPTEMBER 2019

10 tonnes of hydrogen dispensed to Green Tomato Cars hydrogen vehicles

OCTOBER 2019

10 hydrogen vehicles deployed to Metropolitan Police Service

NOVEMBER 2019

Additional 25 hydrogen vehicles deployed to Green Tomato Cars

APRIL 2021

117 hydrogen vehicles on the roads as part of ZEFER

NOVEMBER 2021

60 vehicles by DRIVR in Copenhagen and 180 vehicles deployed thanks to ZEFER on the roads in London, Paris and Copenhagen

2022

End of project



180 vehicles deployed

>99% availability

8.3 million km driven



170 km/day	average daily distance
44,000 km/year (hydrogen vehicle) 39,000 km/year (non-hydrogen vehicle)	average annual distance per vehicle
12,647 km	farthest driven by a vehicle in a month



193 kmbetween refuels8,291 kmfarthest driven by one
taxi in a month30,485 kgof hydrogen used by
ZEFER Hype taxis

