

Fuel cell buses on Route 25

Route 25 between Oxford Circus and Ilford has been chosen as the first fuel cell trial bus route for a number of reasons.

Firstly, it's important to test the buses in different inner city areas. Route 25 is a busy route that extends all the way from the centre of London, through the East End and onto Ilford. It's a long route that offers a wide variety of traffic conditions in the largest city taking part in the trial.

In addition, fuel cell buses will run alongside conventional double-decker buses on the same route. As a result of all these factors, the operating and environmental data gathered will play a major part in helping the project to gain experience of how the fuel cell propulsion system actually performs day-by-day.

Once the field trial is well established London Buses will begin to run the fuel cell buses on other routes in order to test their operational and environmental effectiveness more thoroughly.

Like most of the London bus fleet, fuel cell buses provide full low-floor access.

Partners in progress

London Buses is part of Transport for London, and is responsible for achieving environmental targets and standards for the whole of London's bus fleet, as required by the Mayor's Air Quality Strategy.

First operates around one sixth of the London bus network. Their experience, support and expertise in transit management is crucial in ensuring the trial is conducted and assessed to rigorous standards.

BP is providing the hydrogen-refuelling facilities for the fuel cell buses. BP is an infrastructure partner in five of the nine CUTE (Clean Urban Transport for Europe) cities and is demonstrating a range of different hydrogen technologies in each location.

Energy Saving Trust is supporting the project through grant funding from its new vehicle technology fund programme.

Daimler Chrysler has developed and manufactured the buses and will provide technical support during the trial.

The **European Union** has co-financed the trial, with the support of the European Commission Directorate-General for Energy and Transport.

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London leading the way

London is taking part in a pioneering project to reduce air pollution and noise by testing the first generation of zero emission fuel cell buses. This important initiative is a key part of the Mayor's Transport and Air Quality Strategies, which are designed to help give Londoners a cleaner and healthier future. Not only is the fuel cell bus trial a significant step towards achieving that goal, it also demonstrates that London is leading the way in alternative forms of public transport.

Energetically efficient

Nine cities in Europe are taking part in the fuel cell bus trial, making it the largest project of its type anywhere in the world. The reason it's so important is because of greenhouse gas emissions and inner-city noise levels which are a major source of complaint.

The project brings together over 40 organisations including the bus manufacturer, operating companies, hydrogen suppliers, fuelling and storage facilities, and universities. It is part of the ongoing development of clean urban transport systems which combine energy efficiency with cost-effectiveness.

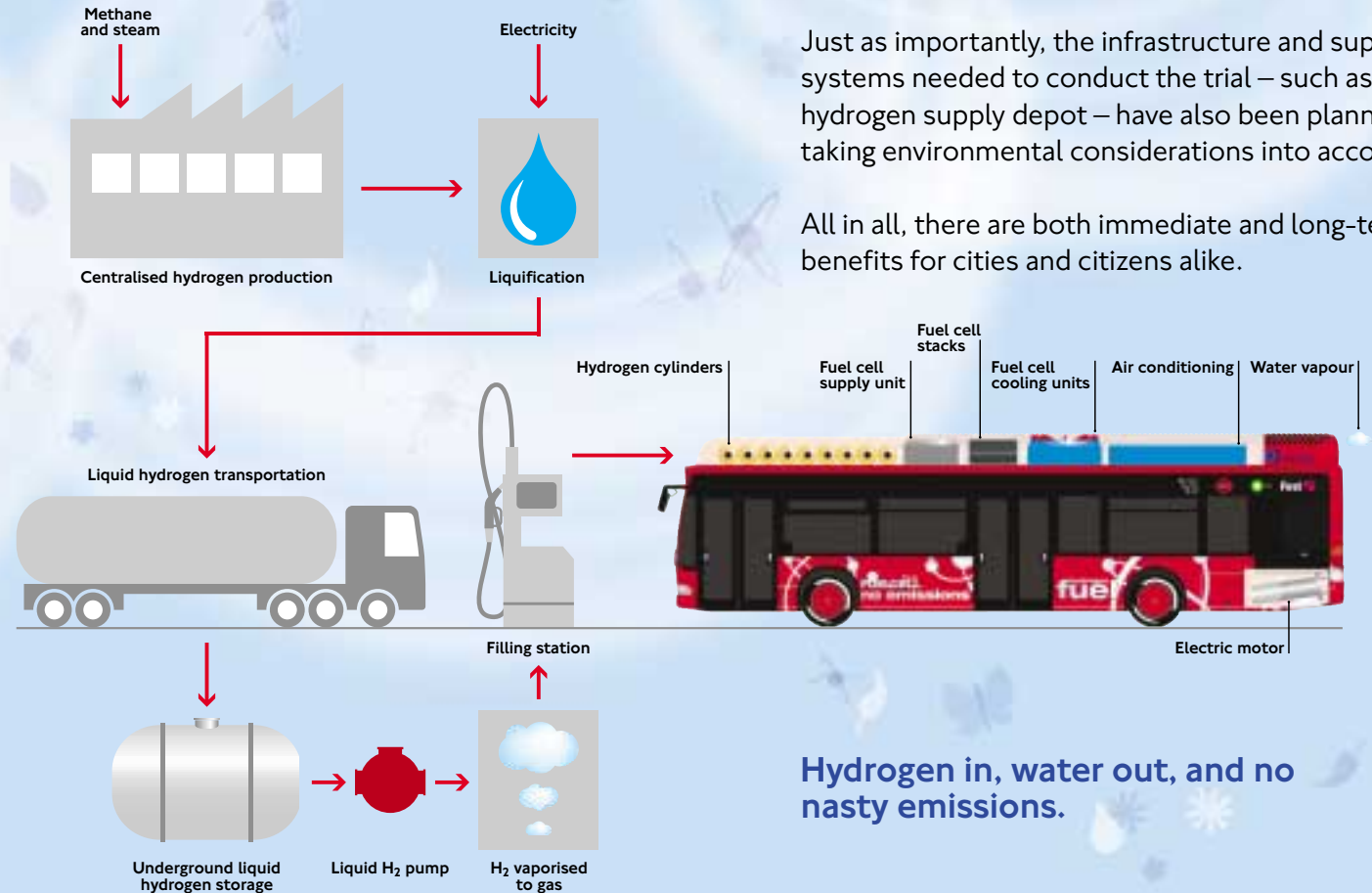
The fuel cell buses will be subjected to rigorous ecological, technical and economic analysis, which will then be compared to conventional bus transportation. By the end of the trial London will have made a major contribution to a much-needed initiative, the results of which are eagerly awaited by transport authorities and governments across the globe.

Fuel cell buses can travel more 125 miles before refuelling.

How fuel cell buses work

The new Mercedes Citaro buses, which have been built by Daimler Chrysler especially for this trial, use the latest fuel cell and hydrogen production technology.

Do they really run on hydrogen? Yes



Hydrogen can be made in a number of different ways including steam reforming of natural gas and the splitting of water into hydrogen and oxygen (electrolysis). The hydrogen is then liquefied by cooling it down to a very low temperature.

The liquid hydrogen is delivered to the fuelling site where it is dispensed as a gas into pressurised cylinders. These are the cylinders you can see on top of the bus, along with the fuel cell system, coolers and other components.

The only emission from a fuel cell bus is water, which forms a vapour cloud as soon as it leaves the exhaust and enters the atmosphere.

Just as importantly, the infrastructure and support systems needed to conduct the trial – such as the hydrogen supply depot – have also been planned taking environmental considerations into account.

All in all, there are both immediate and long-term benefits for cities and citizens alike.

Hydrogen in, water out, and no nasty emissions.