

PRESS RELEASE: (For release Oct. 17th, 2016)

New Bus Refuelling for European Hydrogen Bus Depots

NewBusFuel is an ongoing study funded by Fuel Cells and Hydrogen Joint Undertaking with the goal of resolving the knowledge gap for establishment of large-scale hydrogen refuelling infrastructure for fuel cell buses – silent electric buses with long driving range and with zero local emissions. The study that commenced in summer 2015 has assessed the central technology- and engineering solutions required for the refuelling of a large number of hydrogen fuel cell buses at a single bus depot, which is under way to evolve into fleet development in the coming years. Large scale bus depot refuelling imposes significant new challenges which have not yet been tackled by the hydrogen refuelling sector:

- Scale – throughputs in excess of 2,000kg/day (compared to 100kg/day for current passenger car stations)
- Close to 100% available supply for the public transport networks which will rely on hydrogen
- Short refuelling window – buses will be refuelled in a short overnight window, leading to rapid H2 throughput
- Footprint – the refuelling units needs to be reduced to fit within busy urban bus depots
- Volume of hydrogen storage – which can exceed 10 tonnes per depot and leads to new regulatory and safety constraints or alternative supply and backup concepts to minimize storage effort on site
- New business concepts leading to competitive fuel prices

A large and pan-European consortium have developed solutions to these challenges. The consortium involves 10 of Europe's leading technology providers involved in hydrogen production and refuelling. These partners have worked with 12 bus operators in Europe, each of whom have demonstrated political support for the deployment of hydrogen bus fleets.

In each location engineering studies have been produced, by collaborative design teams involving bus operators and industrial HRS experts, each defining the optimal design in terms of regulatory boundary conditions, available space and economics, hydrogen supply route, commercial arrangements and the practicalities for a hydrogen station capable of providing fuel to a fleet of fuel cell buses (40-260 buses).

Public reports are in preparation based on an analysis across the studies, with an aim to provide design guidelines to bus operators considering deploying hydrogen buses, as well as to demonstrate the range of depot fuelling solutions which exist (and their economics) to a wider audience.

“NewBusFuel is a very important project and a necessary link for the commercialisation of fuel cell buses in Europe,” said Ben Madden, Director, Element Energy the project coordinator for NewBusFuel. “Our aim is to ensure that the bus operator sector in Europe possesses the knowledge

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required to plan and then build the ultra-reliable and high capacity hydrogen bus refuelling facilities which will be required for large fuel cell bus fleets of the future.”

Madden continued; “NewBusFuel brings together experts from hydrogen fuelling station providers, their equipment suppliers and hydrogen bus operators to develop workable designs of high capacity hydrogen fuelling stations which are needed for busy bus depots. The insights from analysing the designs will demonstrate that a range of reliable and affordable hydrogen fuelling solutions can be made available to fuel depot-scale hydrogen bus fleets.”

Commenting on the project, Bart Biebuyck, Executive Director of the FCH JU said; “Fuel Cells and Hydrogen production technologies are a very important piece in the puzzle for low and zero emission public transport in Europe. We have seen the last years, significant development and news on the commercialisation of heavy-duty hydrogen-powered vehicles (buses, trucks, trains recently). It is crucial that we now bridge the gap from small-scale, small-fleet demonstration projects to robust large scale infrastructure, which is a key factor if hydrogen powered public transport is going to be deployed in significant numbers in the transportation sector. NewBusFuel will bring crucial knowledge available to those not yet familiarized with FC bus and infrastructure technology.”

The results of this project will be published in early 2017. These results will be disseminated widely to provide confidence to the whole bus sector that this potential barrier to commercialisation of hydrogen bus technology has been overcome.

Read more on the project webpage at: www.newbusfuel.eu

FCH JU project info: www.fch.europa.eu/project/new-bus-refuelling-european-hydrogen-bus-depots

Partnership overview:

