Technology Strategy Board
Driving Innovation

Zero-emission, fuel-cell scooter

Innovation **ideas**

SPOTLIGHT ON A CURRENT PROJECT #019

Reducing carbon emissions from road vehicles will be crucial in achieving the Government's target of cutting emissions by 80% by 2050 compared with 1990 levels. Electric motorbikes, powered by hydrogen fuel cells, have no harmful exhaust emissions and are considered to be a vital part of 'cleaner' urban commuting. Longer-term trials of such vehicles are needed to accumulate road-running experience in mixed commuter and city/urban riding conditions.

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The Suzuki Burgman fuel-cell scooter, which was unveiled in London in February 2010, is the result of several years of collaboration between Intelligent Energy (a UK clean power systems company) and the Suzuki Motor Corporation (Japan).

Unique features
The new scooter combines Intelligent Energy's air-cooled, fuel-cell technology with maximum carryover of components and running gear from a conventional scooter. The design combines 'rideability', operational flexibility and style. The scooter is fuelled from a cylinder of hydrogen, which can be recharged in a few minutes and gives a riding range of 350 km. The maximum speed of the Burgman scooter will be limited in line with its intended city centre and urban use.

Demonstration programme
The first public road tests of the scooter will be in Loughborough to obtain approval for road use and to endorse refuelling safety measures. Demonstration fleets in London and other locations will then provide day-to-day operational experience in live traffic and environmental conditions, and to establish performance and service requirements. Scooters will also run in demonstration events to raise public awareness of the technology's potential.

Market potential
The fuel-cell scooter is expected to be priced competitively with its petrol equivalent, with the timing of commercial market introduction still to be determined. There are plans for hydrogen filling stations to be available around London in time for the 2012 Olympics.

Over the last few decades, the number of motorbikes and motor scooters sold worldwide every year has been increasing. Currently, the number of units sold on an annual basis stands at around 40 million. The Burgman scooter is aimed at the commuter markets of Europe, North America and Japan, where its use will lead to a significant reduction in carbon emissions.

'The fuel-cell Burgman is a fantastic piece of kit. I hope Londoners will dump their 20th century motorcycles and buy one built for the 21st century.'

Kit Malthouse, Deputy Mayor of London (Policing)

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Duration 16 months – ends April 2011

Technology Strategy Board investment
£1.09 million

Total project cost £3.06 million

Current project partners
Intelligent Energy
Suzuki Motor Corporation
Loughborough University

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