HyFLEET:CUTE

Hydrogen for Clean Urban Transport in Europe
What is HyFLEET:CUTE?

Continued operation of 33 H2 powered Fuel Cell Mercedes-Benz Citaro buses in 7 European cities, Perth (Western Australia) and Beijing (China)

Operation of 14 H2 powered Internal Combustion Engine MAN buses in Berlin (Germany)

Design, Construction and Testing of “next generation” H2 powered Fuel Cell buses and Internal Combustion Engine buses
What is HyFLEET:CUTE?

Continuous operation of CUTE/ECTOS filling stations
- Optimization
- Improved operational reliability and energy efficiency

Design, construction and testing new H₂ refuelling infrastructure in Berlin
- LPG reformer
- To fuel 20 buses
Project Objectives

- Reduce energy and fuel consumption of the whole transport system
- Education and training of new EU member states on the advantages of H₂ in either Fuel Cells or ICE
- Inform key decision makers in Industry, Government, and the Community on impacts of possible future H₂ transport energy system
- Provide information and recommendation to EC on possible future energy and environment policy impacts of H₂ transport energy systems
Who are the Partners?
Research Focus

Technology

Fuel Cell Buses
- Optimising existing FC buses for energy efficiency
- Development and build of next generation Fuel Cell Hybrid bus
Fuel Cell Bus Prototype

The fuel cell bus system of the future is driven by the 4 core technologies: tank system, accumulator system, drive system and fuel cells
Research Focus

Technology

Fuel Cell Buses
• Optimising existing FC buses for energy efficiency
• Development and build of next generation Fuel Cell Hybrid bus

Hydrogen ICE Buses
• Development and build of 14 hydrogen ICE buses
Hydrogen ICE buses

4 buses with 150kW ICE engine
to be delivered in 2006

9 buses with 200 kW ICE engine
with turbo charger
to be delivered in 2007

1 bus with 200 kW ICE engine
with turbo charger and APU
to be delivered in 2007
Research Focus

Technology

Fuel Cell Buses
- Optimising existing FC buses for energy efficiency
- Development and build of next generation Fuel Cell Hybrid bus

Hydrogen ICE Buses
- Development and build of 14 hydrogen ICE buses

Infrastructure
- Optimizing existing H2 refuelling systems for energy efficiency, reliability
- Develop & build innovative new refueller in Berlin
Hydrogen Infrastructure - Berlin

Fueling station designed to refuel 20 buses per day

On-site production of gaseous hydrogen via LPG reformer (100Nm/h)

Installation of ionic liquid compressor

Installation of stationary fuel cells for consumption of surplus gaseous hydrogen from the LPG reformer
- Heat and energy will be used for the service station shop
Research Focus

Quality, Safety and Training
- Optimising of H2 safety procedures at refuelling stations
- Analysis of certification and regulatory issues
- Training of possible stakeholders in new projects – EU member states, Asia, Australia

Global Hydrogen Bus Platform
- Dissemination and exchange of information
- Forums for debate and discussion
- Education of decision makers
- International focus

Sub Components Research Studies
- Analysis of Performance of Stationary Fuel Cells
- Environmental Analysis
- Customer Acceptance
- Socio Economic implications of a H2 economy
- Macro economic Implications of H2 FC technology
- Adaptation of findings to China

Studies, Dissemination

Global Hydrogen Bus Platform

Sub Components Research Studies
Project Time Line

Global Hydrogen Bus Platform

Operation of FC buses

Design + Production of a future FC hybrid bus

Setup and operation of a new H2 refuelling station in Berlin

- 4 H₂ ICE buses
- 10 turbo ch. H₂ ICE buses

Handbook for „Non-H₂ “-City

Training for new MS WS 1&2

Training for non EU countries

Certification Workshop (WS)

Accompanying studies *

Dissemination

*Quality & Safety; socio-economic & ecological assessment

** It is not yet decided whether Perth and Beijing will also extend the operation phase
Thank you for your attention!

For further information please go to www.global-hydrogen-bus-platform.com

or contact

Monika Kentzler
monika.kentzler@daimlerchrysler.com
HyFLEET: CUTE

“Partners for Sustainable Mobility”