



## Project Summary

# Hydrogen for Clean Urban Transport in Europe

### HyFLEET:CUTE

**Action Line:** Alternative motor fuels  
**Contract Type:** Integrated projects  
**Activity area:** Hydrogen and Fuel Cell

### Coordinator:

**Organisation:** DAIMLERCHRYSLER AG  
EPPLESTRASSE 225  
70546 STUTTGART  
Germany  
**Contact Person:** [Andreas NOWAK](#)  
[Walter RAU](#)

### Project details

<b>Reference:</b>	AMFhy/019991/2005	<b>Start Date:</b>	10/01/2006
<b>Status:</b>	Execution	<b>End Date:</b>	10/09/2009
<b>Project Cost (€):</b>	43.162.677	<b>Duration (months):</b>	44
<b>Project Funding (€):</b>	18.986.145		

### Summary

The HyFLEET:CUTE project will comprise the continued operation of the FC-fleet from the former CUTE and ECTOS projects, the development and demonstration of a new FC hybrid pre-prototype and the development, construction and demonstration of a fleet of 14 hydrogen powered internal combustion engine (ICE) buses in regular service in Berlin including the required hydrogen infrastructure. It will be a part of the European Hydrogen & Fuel Cell platform.

Goals of this project are to:

- Improve FC technology by continuing the operation of 21 FC- buses over a period of 12 months in 7 European and in parallel continuing the operation another 6 buses in China and Western Australia
- Develop the concept, design and production of a new FC hybrid bus as a pre-prototype aiming at 20% less fuel consumption than a comparable diesel bus
- Built up the hydrogen infrastructure for operating a fleet of 14 buses in Berlin
- Development, design and production of 4 buses with naturally aspirated hydrogen ICE, 150 kW and of 9 buses with turbocharged/direct injection hydrogen ICE, 200 kW and
- 1 bus with turbocharged/direct injection hydrogen ICE, 200 kW, with energy management/Fuel Cell -APU

In Berlin the hydrogen refuelling infrastructure will be implemented as part of a public filling station. The infrastructure will be suitable for fleet operation with a daily filling capacity of up to 20 buses and will feature some innovative elements aiming at operation reliability, CO2 reduction and energy efficiency:

- GH2 on site production through reforming LPG, which can be substituted by Bio-DME.
- New generations of dispensers and compressors using ionic fluids and re-liquefaction equipment for LH2 boil-off
- Two stationary fuel cells will be demonstrated which consume the surplus GH2 produced on-site

The core objectives of the overall project are:

- Reduction of the energy and fuel consumption of the whole transportation system
- Education and training of new European Union member states on the advantages of H2 as fuel together with ICE and FC propulsion systems
- Deliver a comprehensive set of data to industrial stakeholders, politicians, authorities and NGOs enabling them to take key decisions on investments in public-private partnerships based on facts and knowledge
- Deliver facts, data and recommendations to the EC supporting future revisions of the Community's energy or environment policy

China will play a key role in energy consumption in the future. By integrating China and other countries with the European Union in a Global Hydrogen Bus Platform, the impact of the project will take effect beyond European borders.



## Partners

1	DAIMLERCHRYSLER AG	DE
2	GVB	NL
3	Transports de Barcelona S.A.	ES
4	Hamburger Hochbahn AG	DE
5	LONDON BUS SERVICES LTD	GB
6	Ville de Luxembourg - Service des Transports en Commun + C61	LU
7	EMPRESA MUNICIPAL DE TRANSPORTES DE MADRID, S.A.	ES
8	TOTAL Deutschland GmbH	DE
9	Icelandic New Energy	IS
10	EvoBus GmbH	DE
11	Vattenfall Europe Hamburg AG	DE
12	Norsk Hydro ASA	NO
13	SHELL HYDROGEN B.V.	NL
14	PE Europe GmbH	DE
15	PLANET - Planungsgruppe Energie und Technik GbR	DE
16	Universitaet Stuttgart	DE
17	Euro Keys sprl	BE
18	Air Liquide SA	FR
19	Hydrogenics Europe N.V.	BE
20	University of Iceland	IS
21	Instituto de Engenharia Mecanica - Instituto Superior Técnico	PT
22	Western Australian Department for Planning and Infrastructure	AU
23	Repsol YPF S.A.	ES
24	China FCB Demonstration Project Management Office	CN
25	BP Gas Marketing Ltd.	GB
26	BVG Berliner Verkehrsbetriebe A.ö.R.	DE
27	MAN Nutzfahrzeuge AG	DE
28	MVV Consulting GmbH	DE
29	Technical University Berlin	DE
30	Vattenfall Europe Berlin AG & co Kg	DE
31	NEOMAN Bus GmbH	DE