



# Tenneco Automotive Works With Industry Consortium To Develop Integrated Automotive Fuel Cell Power System

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*Company Selected by European Commission to Participate in the Sixth Framework Program for Sustainable Development*

LAKE FOREST, ILLINOIS/BRUSSELS, BELGIUM, July 1, 2004 - Tenneco Automotive (NYSE: TEN) announced today its participation in a European industry consortium to research and develop an automotive hydrogen fuel cell system. The consortium will work under the auspice of the European Commission's Sixth Framework Program for Sustainable Development (FP-6), which will provide substantial funding for the consortium's HyTRAN project.

The objective of HyTRAN is to advance fuel cell technology towards a commercially-viable solution, which will require improvements in cost, durability, weight, volume and efficiency. The consortium is led by Volvo and includes 19 partners.

"The invitation to participate in this prestigious industry consortium recognizes Tenneco Automotive's leadership in advanced emission control technology," said Mark P. Frissora, chairman and CEO, Tenneco Automotive. "Our partnerships with our OEM customers in exhaust component design and full systems integration on both diesel and gasoline powertrains require expertise in managing flow, heat transfer and material compatibility, while optimizing cost and leveraging our manufacturing capabilities. Applying this expertise to developing hydrogen fuel cell systems is a logical next step forward for Tenneco Automotive."

The goal of the consortium is to develop an 80 kW (107 horsepower) direct hydrogen fuel cell (DHFC) system capable of powering an automobile, and a 10 kW (13 horsepower) auxiliary power unit (APU) for on-board power and stationary applications such as truck cabin and trailer use. Tenneco Automotive will be responsible for designing and developing key air and fuel-flow components that integrate each of the systems. The APU system will include a fuel processor to convert diesel fuel to hydrogen, and a fuel clean-up system to purify the hydrogen. This system will employ advanced thermal and flow technology similar to the emission control systems Tenneco Automotive already produces for gasoline and diesel automobiles.

Tenneco Automotive is also responsible for assuring that noise, vibration and harshness (NVH) is managed to meet appropriate noise standards. Finally, the company will be responsible for ensuring that the system can be manufactured in a cost-effective way.

Research and development will be done at Tenneco Automotive's European emission control engineering headquarters in Edenkoben, Germany.

The other consortium partners are: Centro Ricerche Fiat, Renault, Volkswagen, DaimlerChrysler, DAF Trucks, Nuvera Fuel Cells, Johnson Matthey Fuel Cells, Opcon Autorotor, Weidmann Plastics Technology, Adrop, Institut für Kraftfahrwesen Aachen, Netherlands Energy Research Centre, Politecnico di Torino, Paul Scherer Institute, Institut für Mikrotechnik Mainz, Imperial College of Science, Technology and Medicine, London, and Environment Park, Torino.

The main objective of the European Commission's transportation research is to develop systems that offer near zero emissions and safe operation. Research in the FP-6 program is conducted in the areas of reducing congestion, intelligent transport systems, new vehicle concepts and fuels. The research aims to identify diverse and environmentally friendly sources of energy, and enable a move away from unsustainable solutions with an objective of reducing greenhouse gases, ensuring the security of energy supplies and having a competitive internal market for energy within the European Union. Long term issues will include new sources of energy such as hydrogen, fuel cells, the transport and storage of energy, biomass, and cleaner fossil fuel systems.

Tenneco Automotive is a \$3.8 billion manufacturing company with headquarters in Lake Forest, Illinois and approximately 19,200 employees worldwide. Tenneco Automotive is one of the world's largest designers, manufacturers and marketers of emission control and ride control products and systems for the automotive original equipment market and the aftermarket. Tenneco Automotive markets its products principally under the Monroe®, Walker®, Gillet® and Clevite® Elastomer brand names. Among its products are Sensa-Trac® and Monroe Reflex® shocks and struts, Rancho® shock absorbers, Walker® Quiet-Flow® mufflers, Dynomax® performance exhaust products, and Clevite® Elastomer noise, vibration and harshness control components.

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