OVERVIEW
The National Fuel Cell Research Center (NFCRC) has a long, proud relationship with hydrogen fuel cell vehicles. Since its establishment in 1997, the NFCRC has worked with auto manufacturers, fuel supply companies, and various local, state and federal agencies on fuel cell vehicle and fueling infrastructure research and technology. Its history is intertwined with that of the fuel cell vehicle’s progress towards commercialization.

Today, through a successful collaboration with Toyota Motor Sales, USA, Inc. and Toyota Motor Engineering and Manufacturing North America, Inc., the NFCRC maintains a fleet of 17 Toyota Fuel Cell Hybrid Vehicles (FCHV-Advs) -- one of the largest fuel cell vehicle fleets in the nation. Fleet vehicles are sub-leased to companies, agencies and municipalities in Orange County both to gather information through real-world application, and to promote fuel cell vehicle and hydrogen fueling awareness and market acceptance. The vehicles are also utilized by various departments within UC Irvine, providing opportunities to showcase fuel cell vehicle technology to many campus visitors.

GOALS
• Promote awareness and acceptance of fuel cell vehicles
• Analyze driver behavior and public perceptions
• Evaluate driving/fueling logistics
• Facilitate development of hydrogen fueling infrastructure
• Enable public familiarity/acceptance of the new fueling paradigm

FUEL CELL HYBRID VEHICLE (FCHV) PROGRAM

Toyota FCHV-Adv

Built on the Toyota Highlander platform, key features include:
- Vehicle range of 432 miles; 96 mph top speed; 90 kW (122 hp) PEM fuel cell stack; 90 kW (122 hp) electric motor; 21 kW nickel-metal-hydride battery pack; 70 MPa (10,000 psi) hydrogen storage tanks; aluminum roof and fenders; and an air conditioning system that utilizes carbon dioxide as a refrigerant.

Toyota FCHV-Adv fuel cell vehicles at the UC Irvine Hydrogen Station

PROGRAM ACCOMPLISHMENTS
• First highway-ready hybrid electric fuel cell vehicle deployment in the nation (Dec. 2, 2002)
• First fuel cell vehicle ever delivered to a paying customer (deployed to Orthodyne Electronics, Inc., Dec. 24, 2002)
• Approximately 150,000 hydrogen powered FCHV-Adv miles driven during calendar year 2012
• Thousands of hydrogen refueling fills at the UCI and the Orange County Sanitation District hydrogen stations (operated by UCI)
• Hundreds of people educated about hydrogen and fuel cell powered automobiles though driving/riding in NFCRC fleet FCHVs, as well as via NFCRC meetings, conferences and open houses, and vehicle displays at various community events.
• Invaluable objective customer feedback regarding FCHV attributes and performance provided to Toyota

RECENT PUBLICATIONS/PAPERS

PERSONNEL
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