Fuel Cell Technology Update – October 1, 2007

To: Reporters, editors and investors following business, energy, automotive and technology news.
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TRANSPORTATION APPLICATIONS

Centro Ricerche Fiat (CRF) presented three Nuvera Fuel Cell-powered Panda cars to the municipality of Mantova today as part of the Zero Regio project. Zero Regio is an integrated project aimed at developing and demonstrating zero emission road transport systems in normal daily use in Mantova, Italy, and Frankfurt, Germany. The three hydrogen Pandas were presented alongside an ENI multi-fuel refilling station, offering pressurized hydrogen at 350 bar. Following today’s event, the vehicles will serve the city of Mantova in a number of different civic applications.


General Motors introduced the HydroGen4, a Euro version of the Chevrolet Equinox Fuel Cell, at the Frankfurt auto show. The HydroGen4 is part of a larger strategy by the automaker to expand its green push throughout Europe.

http://www.edmunds.com/insideline/do/News/articleId=121541

Hyundai Motor Company introduced its new i-Blue Fuel Cell Electric Vehicle concept at the Frankfurt Motor Show earlier this month. The i-Blue platform is tailored to incorporate Hyundai's third-generation fuel cell technology, currently being developed at its Eco-Technology Research Institute in Mabuk, Korea. The i-Blue is powered by a 100 kW electrical engine and fuel cell stack. Fueled with compressed hydrogen (700 bar) stored in a 115 liter tank, i-Blue is capable of running more than 600 km per refueling and achieves a maximum speed of 165 km/h.


Mercedes-Benz will begin serial production within three years of a small car powered by a hydrogen fuel cell, the premium brand of DaimlerChrysler. The new B-Class car's electric engine will generate top output of 136 horsepower and perform on par with a two-litre petrol engine, the company said. It will consume the equivalent of 2.9 litres of diesel fuel per 100 kilometres driven. The claim is for 83 miles per gallon.

STATIONARY APPLICATIONS

PORTABLE/BACKUP POWER

Plug Power Inc. has installed two GenCore® fuel cell systems to provide backup power for a New York State Police radio tower in eastern Rensselaer County. Installed in tandem, the two GenCore systems can provide a combined maximum of 10 kilowatts of power. The emergency response radio tower requires approximately 7.5 kilowatts. In addition, each fuel cell system has enough stored hydrogen to provide backup power for 72 hours without refueling. At the Grafton tower, which is on the outer reaches of the statewide network, Plug Power’s fuel cell systems will provide the extended run capability needed for continuity of operations during a lengthy grid outage.

5 kW IdaTech fuel cell backup power system, the ElectraGen™5XTR has been installed by Cell Care Technologies in the London at the Investec headquarters. Operating on a liquid fuel (a methanol/water fuel mixture called HydroPlus), the fuel cell system will provide extended run backup power to the building's security office to ensure site integrity during any power interruption. The fuel cell is integrated with a Chloride UPS system and installed in the loading dock of the Investec building.

http://www.idatech.com/Media-Center-Investec.asp

Acumentrics Corporation and Jadoo Power have agreed to collaborate in producing small scale generators (< 5 kW) utilizing Acumentrics’ SOFC technology and Jadoo’s N-Stor interface, modular system design and automated canister refill technology.

http://www.jadoopower.com/

Protonex Technology Corporation is working with Raytheon in the development of Protonex’ portable fuel cell power system for the US Army. This work will be completed under a subcontract of Protonex’ previously awarded $3.5 million contract with the US Army Research Office (ARO) to develop a 250-watt portable fuel cell power source that is significantly smaller, lighter, quieter and more efficient than alternative battery or generator systems.

http://www.protonex.com/09-12-07%20Raytheon%20US.pdf

Comtec Enterprises has backed up its datacenter power supply with a hydrogen fuel cell to save on space, eradicate downtime and reduce its carbon footprint.

The company, which supplies technology products and services and hosts customer applications, finalised the building of its new datacentre, which houses up to 1024 servers, in June and purchased an APC hydrogen fuel cell for about £60,000 to provide power back-up.

This is only the third such APC product implemented in a datacentre to be deployed in the UK, with Kensington based financial services company Winton Capital Management and technology company UPS Systems the other two users.

Unipart Leisure and Marine division of the Unipart Group of Companies will be the official UK distributor for Voller Energy's Emerald fuel cell system predicted to revolutionize power supplies in the marine industry. The Voller Energy Emerald fuel cell is capable of replacing the commonly used diesel generator and is an environmentally friendly alternative power supply cutting toxic emissions by an estimated sixty times. Added benefits include reduced maintenance and servicing, low noise and vibrations with a significant reduction in overall weight. Voller also received an order from GenQuip for twenty 1-kW fuel cell systems to be installed in welfare cabins, mobile units used in construction.

http://www.voller.com/press.asp

MICRO FUEL CELLS

FUELS/REFORMERS/STORAGE

NanoLogix, Inc. used hydrogen gas produced from its bioreactor prototype facility at Welch Foods Inc., a cooperative in Pennsylvania, to power a 5.5-kW generator and in turn, multiple strings of 100-watt light bulbs. NanoLogix uses a fermentative approach to the microbial production of hydrogen, reducing or eliminating methanogens and increasing the yield of hydrogen. NanoLogix bacteria now metabolize sugars and convert them into carbon dioxide and hydrogen at a 1:1 ratio. The carbon dioxide is then removed by passing the gas mixture through a concentrated solution of sodium hydroxide, leaving behind pure hydrogen.

The London Schools Hydrogen Challenge, [www.lshc.co.uk](http://www.lshc.co.uk), is an interactive educational science programme developed by the London Hydrogen Partnership. The Challenge, which has been created in partnership with BMW (UK) Ltd, is aimed at schoolchildren aged 11 to 14 years old across all 33 London boroughs. To encourage schools to sign-up to the Challenge a first prize of £1,000 is being offered. Schools that have completed the Challenge successfully will be invited to compete in the Grand Final at City Hall in June 2008.

**MATERIALS/COMPONENTS**

**CCEF Provides Funding to UConn.**

The Connecticut Clean Energy Fund (CCEF), a ratepayer fund administered by Connecticut Innovations Inc. (CI), today announced that it has provided $176,000 to the University of Connecticut (UConn) to support a collaborative applied research project with UTC Power, a United Technologies company that has pioneered advances in many areas of fuel cell technology. The partners will be developing advanced optical diagnostic tools to aid in the development and reliable operation of proton exchange membrane (PEM) fuel cell systems. CCEF’s funding was provided through its Yankee Ingenuity Technology Program and will be matched by funding from UTC Power. PEM fuel cells are used in autos, fleet vehicles, such as buses, and portable and stationary power systems. The goal of the project is to develop robust, fiber-based laser sensors to take local measurements inside PEM fuel cell systems.


Diahatsu, working with Japan’s National Institute of Advanced Industrial Science and Technology (AIST), developed a new fundamental fuel cell technology that completely eliminates the need for platinum, a precious metal that has been an essential material in the electrode catalyst in conventional fuel cells for automobiles. Newly developed technology uses alkaline electrolyte membranes. This allows inexpensive metals such as cobalt and nickel to be used as an electrode catalyst (instead of platinum), and other inexpensive materials to be used in the separator and other component parts. As a result, it helps conserve valuable resources of precious metals and significantly reduces cost.


**REQUESTS FOR PROPOSALS**

**REPORTS/MARKET STUDIES**

**MISCELLANEOUS**


**CONFERENCES**


**FC Expo 2008.**

Fuel cells generate electricity without combustion by harnessing the energy created when hydrogen and oxygen are chemically combined. Fuel Cells 2000 is an independent, nonprofit activity dedicated to the commercialization of fuel cell technologies.