

# *news from* **FUEL CELLS 2000**

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**Fuel Cell Technology Update – February 1, 2007**

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

### **Ford Unveils Fuel Cell Plug-in Hybrid.**

Ford recently unveiled its Airstream Concept vehicle, a plug-in hybrid electric vehicle that utilizes a hydrogen fuel cell to recharge the lithium-ion battery while the car is on the road. The vehicle's HySeries Drive™ powertrain features a Ballard fuel cell and begins operating after 25 miles. The vehicle can then travel another 280 miles on the 4.5 kg of hydrogen stored for use in the fuel cell. The HySeries Drive™ powertrain is already on the road and driving in a Ford Edge prototype, achieving a combined city/highway equivalent fuel economy of 41 miles per gallon.

[http://media.ford.com/newsroom/release\\_display.cfm?release=25147](http://media.ford.com/newsroom/release_display.cfm?release=25147)

### **DaimlerChrysler Introduces Fuel Cell-Powered Fire Response Vehicle.**

DaimlerChrysler has introduced the first fuel cell-powered fire response vehicle that will be operated by the Sacramento Metropolitan Fire District in California. The Fire Service Mercedes-Benz F-Cell has a range of approximately 100 miles and a top speed of 85 mph. The electric motor develops 88 hp (65 kW), enabling acceleration from 0 to 60 mph in 16 seconds. The fuel cell stack has been developed by Ballard Power Systems. The vehicle will be refueled at a BP Energy hydrogen fueling station located at the California Fuel Cell Partnership.

[http://www.greencarcongress.com/2007/01/daimlerchrysler\\_3.html](http://www.greencarcongress.com/2007/01/daimlerchrysler_3.html)

### **Hydrogenics and LiftOne Receive Award for Forklifts.**

Hydrogenics Corporation and LiftOne, a division of Carolina Tractor, have received an award to assist in the deployment of hydrogen fuel cells in forklifts at several manufacturing facilities in South Carolina. The project is an initiative of The Greater Columbia Fuel Cell Challenge, and will incorporate Hydrogenics HyPX™ Fuel Cell Power Packs in two Class 1 lift trucks furnished by LiftOne. A mobile hydrogen refueler will be supplied for refueling.

[http://www.hydrogenics.com/ir\\_newsdetail.asp?RELEASEID=224933](http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=224933)

### **Microcell Delivers 1 kW Fuel Cell Core.**

Microcell Corporation has delivered the first 1 kW fuel cell core for automotive applications based on its novel microfiber architecture. A fuel cell "core" is a cluster of smaller, easily removable, tube-like fuel cell units with integrated current collection and heat exchange systems. The design and construction of larger 50-100 kW units will be based on the modularity of these fuel cell cores.

<http://www.microcellcorp.com/news.html#>

## **STATIONARY APPLICATIONS**

### **Fuel Cell Tax Credit Extended.**

President Bush approved a bill that will extend federal tax credits for renewable energy and energy efficiency projects. The wide-ranging Tax Relief and Health Care Act of 2006 provides a one-year tax credit extension for new properties that produce geothermal power or make use of solar energy; for homeowners that purchase solar water heating, solar photovoltaic, or fuel cell systems; for businesses that purchase fiber-optic lighting systems, solar energy systems, or fuel cell power plants; for new energy

efficient homes; and for energy efficiency improvements to commercial buildings. The credit allows businesses and property owners to deduct \$1000 per kilowatt, or up to 30% of the cost of the fuel cell system.

<http://www.whitehouse.gov/news/releases/2006/12/20061220-2.html>

#### **Acumentrics Unit Passes Japanese Safety Tests.**

Acumentrics Corporation's 3-kW fuel cell generator passed safety tests for the Japan Gas Association (JGA). The JGA is a corporate association of 211 city gas utilities and 260 associated firms.

The JGA project aims to assure the safety of small solid-oxide fuel cell systems in preparation for their market release and success and rigid standards must be met in Japan's Electrical Utilities Industry Act and the Fire Services Act. Tests were conducted at the Japan Gas Appliances Inspection Association (JIA) facility in Tokyo.

<http://www.acumentrics.com/>

#### **FuelCell Energy Enters Agreement with Linde.**

FuelCell Energy, Inc. has entered into a marketing and distribution agreement with The Linde Group. Under terms of the agreement, which goes into effect immediately, Linde gains the non-exclusive right to sell and market Direct FuelCell® (DFC®) power plants worldwide except where FuelCell Energy already has granted exclusive distribution agreements, focusing initially on DFC opportunities in North America.

<http://www.fce.com/#>

### **PORTABLE/BACKUP POWER**

#### **Smart Fuel Cell Selected for Military Program.**

SFC Smart Fuel Cell AG has been selected to provide an advanced power solution to the US Army Test and Evaluation Command (ATEC). SFC is to develop a 250 W Alternate Power Source Fuel Cell (APSFC) for the Army's Operational Test Command (OTC).

[http://www.efoy.de/index.php?option=com\\_content&task=view&id=901&Itemid=177&lang=en](http://www.efoy.de/index.php?option=com_content&task=view&id=901&Itemid=177&lang=en)

### **MICRO FUEL CELLS**

#### **Ultracell Receives \$3 Million From BASF Venture Capital.**

UltraCell Corporation has received a \$3 million investment by Germany's BASF Venture Capital. The company will use the BASF funds to expand worldwide sales and marketing, and to develop next-generation products.

<http://www.ultracellpower.com/>

### **FUELS/REFORMERS/STORAGE**

#### **Nuvera to Provide Hydrogen Refueling Systems for Fuel Cell-Powered Forklifts.**

Nuvera will supply a PowerTap PTH-12 hydrogen refueling system to The Raymond Corporation to support working fuel cell-powered forklifts at Raymond's manufacturing facility in Greene, New York. The PowerTap PTH-12 is able to provide usable hydrogen either from a third party gas distributor or from the Nuvera PowerTap hydrogen generation system.

[http://www.nuvera.com/news/press\\_release.php?ID=26](http://www.nuvera.com/news/press_release.php?ID=26)

#### **H2Gen Provides Hydrogen Generator to Chevron.**

H2Gen has delivered its factory-tested HGM 2000 hydrogen generation system to Chevron Hydrogen Company, for use in Chevron's hydrogen energy station being constructed near the Orlando, Florida airport. The fueling station at Orlando, funded in part by the Florida Department of Environmental Protection, is expected to be operational by early 2007 and will support hydrogen-fueled internal combustion engine powered buses that will be used at the airport. The H2Gen generator, the sole source of hydrogen produced at the site, is capable of reforming natural gas to produce 115 kg of hydrogen per day, enough to power at least eight of these buses.

<http://www.h2gen.com/downloads/H2GenChevronOrlandoH2Station.PDF>

### **QuestAir Receives Follow-on Order from HyRadix.**

QuestAir Technologies Inc. has received a follow-on order from HyRadix Inc. for ten H-3200 hydrogen purifiers, for use in HyRadix's Aptus® and Adéo® hydrogen generators. HyRadix will take immediate delivery of the first two H-3200 units, manufactured to CE specifications for the European market.

[http://www.questairinc.com/investor\\_relations/press\\_releases/archived\\_releases/2007/01-08.htm](http://www.questairinc.com/investor_relations/press_releases/archived_releases/2007/01-08.htm)

### **Millennium Cell Establishes Manufacturing Capability.**

Millennium Cell Inc. has established manufacturing capability for its Hydrogen on Demand® fuel cartridges, a step which will broaden the company's business model to include commercial sales of standard products. With this development, the company also has the capability to fulfill orders from licensees who package components into customized fuel cartridge designs. The company collaborated with The Dow Chemical Company and The Edison Welding Institute to develop manufacturing techniques and select materials for key fuel cartridge components. Within the program, the key components were redesigned with new materials to achieve high reliability and performance at a low cost under military specification environmental conditions.

<http://www.millenniumcell.com/fw/main/default.asp?DocID=92&reqid=951036>

### **DOE Launches Hydrogen Safety Course for First Responders.**

DOE has launched a Web-based course for First Responders that provides an "awareness level" overview of hydrogen for fire, law enforcement, and emergency medical personnel. This multimedia tutorial acquaints first responders with hydrogen, its basic properties, and how it compares to other familiar fuels; hydrogen use in fuel cells for transportation and stationary power; potential hazards; initial protective actions should a responder witness an incident; and supplemental resources including videos, supporting documents, and links relevant to hydrogen safety.

<http://www.hydrogen.energy.gov/firstresponders.html>

## **FUEL CELL COMPONENTS**

### **FuelCell Energy Receives Component Order from MTU.**

FuelCell Energy, Inc. has received orders for a total of 1.5 megawatts (MW) of fuel cell stack components from its European distribution partner, MTU CFC Solutions GmbH (MTU CFC). FuelCell Energy will deliver the stack components to MTU CFC in the current fiscal year, fabricating them at the company's manufacturing facilities in Connecticut. MTU CFC will use the components to construct HotModule® fuel cells that it manufactures for the European market.

<http://www.fce.com/#>

## **REPORTS/MARKET STUDIES**

### **Power for Portable Electronics.**

Darnell Group has just completed the Sixth Edition of Power for Portable Electronics. The new addition adds explicit quantitative analysis of the emerging markets for micro fuel cells and includes detailed and thorough forecasts and analysis of the changing markets for various power management intergrated circuits (IC).

[http://www.darnell.com/consulting/study.php?mc\\_id=32](http://www.darnell.com/consulting/study.php?mc_id=32)

### **Strategic Analysis of the Japanese Fuel Cell Market, European Market.**

Frost & Sullivan has released "Strategic Analysis of the Japanese Fuel Cell Market" which provides an overview of the fuel cell markets in Japan with a complete analysis of the key market trends, challenges, drivers, and restraints. Frost & Sullivan examines the following markets: residential fuel cell systems, large stationary systems, fuel cells for portable devices, and fuel cell vehicles. Frost & Sullivan also released "European Stationary Fuel Cells Markets" which includes an analysis of the stationary fuel cells market, along with forecasts for revenues and unit sales for different fuel cell technologies.

[http://www.researchandmarkets.com/product/8c1774/strategic\\_analysis\\_of\\_the\\_japanese\\_fuel\\_cell](http://www.researchandmarkets.com/product/8c1774/strategic_analysis_of_the_japanese_fuel_cell)  
[http://www.researchandmarkets.com/product/744d92/european\\_stationary\\_fuel\\_cells\\_markets](http://www.researchandmarkets.com/product/744d92/european_stationary_fuel_cells_markets)

### **Towards A Hydrogen Economy.**

Research Reports International has published the 3rd edition of its "Towards a Hydrogen Economy" report, a 165-page study of the movement towards using hydrogen as a key energy carrier.  
[http://www.researchreportsintl.com/products/product.cfm?report\\_ID=62](http://www.researchreportsintl.com/products/product.cfm?report_ID=62)

## **REQUESTS FOR PROPOSALS**

### **BAA for Hydrogen Vehicle and Fueling Station Pilot Projects.**

DOD's Naval Surface Warfare Center, Crane Division and the Defense Logistics Agency have issued a Broad Agency Announcement (BAA) on Research and Development for Hydrogen-Fueled Material Handling Equipment and Hydrogen Vehicle Fueling Station Pilot Projects. Approximately \$10 million is available, with individual program awards expected to be between \$750,000 and \$1.5 million.  
<http://www.fbo.gov/spg/DON/NAVSEA/N00164/N0016407R6685/SynopsisR.html>

## **MISCELLANEOUS**

### **Hydrogenics and Heliocentris Enter Distribution Agreement.**

Hydrogenics Corporation has entered into a distribution agreement with Heliocentris Fuel Cells AG, to add Hydrogenics' fuel cell power modules and small-scale PEM electrolyzers to Heliocentris' product mix. Heliocentris sells products and services to schools, universities and industry and will now be equipped to be a solution provider for customers that demand a higher power range, from 4kW -16kW.  
[http://www.hydrogenics.com/ir\\_newsdetail.asp?RELEASEID=225625](http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=225625)

### **IPHE Accepting Nominations for Project Recognition.**

The International Partnership for the Hydrogen Economy (IPHE) is accepting nominations for hydrogen and fuel cell pre-competitive research projects to be considered for official recognition by the IPHE in 2007.  
<http://www.iphe.net/ilccommittee.htm>

## **CONFERENCES**

For a complete list of conferences, please go to <http://www.fuelcells.org/news/conf.html>

### **FC Expo 2007.**

The 3<sup>rd</sup> International Hydrogen and Fuel Cell Expo will take place February 7-9, 2007, at Tokyo Big Sight in Tokyo, Japan. For details, please visit <http://www.fcexpo.jp/english/>.

### **Small Fuel Cells 2007.**

The 9<sup>th</sup> International Small Fuel Cells for Portable Applications conference will be held March 7-9, 2007, at the Marriott Miami Hotel in Miami, Florida. For more information, please go to <http://www.knowledgepress.com/events/7131050.htm>.

### **Hydrogen Expo US 2007.**

The National Hydrogen Association (NHA) Annual Hydrogen Conference & Hydrogen Expo US 2007 will be held March 19-22, 2007, at the Henry B. Gonzalez Convention Center in San Antonio, Texas. For conference details, please visit <http://www.hydrogenexpo.com>.

### **Hydrogen & Fuel Cells 2007.**

Hydrogen & Fuel Cells 2007: International Conference and Trade Show will take place at the Conference & Exhibition Centre, in Vancouver British Columbia, Canada, on April 29-May 2, 2007. For registration information, go to <http://www.hfc2007.com/>.

### **2007 Ohio Fuel Cell Symposium.**

The 2007 Ohio Fuel Cell Symposium will be held May 23-24, 2007, at the Hyatt Regency Columbus in Columbus, Ohio. For details, please go to <http://www.fuelcellsohio.org/>.

### **Fuel Cell Early Markets 2007.**

Fuel Cell Early Markets 2007: Policy, Finance, & Applications will be held June 11-13, 2007 in Brussels, Belgium. For more information, please contact Magda Dziembowski at [mdziembowski@intertechusa.com](mailto:mdziembowski@intertechusa.com) or visit <http://www.intertechusa.com/conferences/list.aspx?display=upcoming>.

**Fuel Cell 2007.**

Fuel Cell 2007 will be held at the Hyatt Regency in Rochester, New York, on June 14-15, 2007. For registration information, go to [http://www.fuelcell-magazine.com/fc\\_2007\\_registration.htm](http://www.fuelcell-magazine.com/fc_2007_registration.htm).

**3rd European Hydrogen Energy Conference 2007.**

The 3rd European Hydrogen Energy Conference 2007 will take place at the MECC Maastricht, The Netherlands, from June 18-22, 2007. For conference details, go to <http://www.EHEC2007.com>.

**Grove Fuel Cell Symposium.**

The Tenth Grove Fuel Cell Symposium will be held at the QEII Conference Center in London, England, September 25-27, 2007. For information, please go to <http://www.grofuelcell.com/>.

*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.*