Fuel Cell Technology Update – September 3, 2002

To: Reporters, editors and investors following business, energy, automotive and technology news. Let us know if you would prefer to receive the full updates via email, or if you wish to be removed from our list. For more information on stories, call (202) 785-4222.

TRANSPORTATION

Ballard Receives Bus Engine Order.
Ballard Power Systems has received an order from Gillig Corporation for delivery of three heavy-duty Ballard® fuel cell engines and support services. The 205 kW fuel cell engines will be integrated into transit buses for delivery in 2004 to the Santa Clara Valley Transportation Authority (VTA) based in San Jose, California. The fuel cell buses will operate for a two-year period in revenue service under real-world conditions, in response to the California Air Resources Board's zero-emission transit bus requirements.
http://biz.yahoo.com/bw/020829/292105_1.html

GM Gets Set to Introduce the Hy-Wire.
General Motors Corporation (GM) revealed a look at its new Hy-wire automobile, a drivable fuel cell vehicle that features by-wire technology. The Hy-wire incorporates features first displayed in GM’s AUTOnomy concept car shown earlier this year. The X-drive incorporates an electronic monitor of "vital" car functions and shuttles from side to side on a horizontal bar that stretches across the width of the vehicle. The 94kW fuel cell stack is located in the back of the chassis, and the electric motor, which drives the vehicle's front wheels, is installed transversely between the wheels. Hy-wire will be introduced to the public at the Paris Motor Show Sept. 26, 2002.
http://www.gm.com/cgi-bin/pr_display.pl?3137

Japan to Introduce Tax Incentives for FCVs.
Japan’s Ministry of Land, Infrastructure and Transport announced plans to exempt fuel cell vehicle (FCV) owners from two taxes beginning in FY 03. The purpose of the tax waivers is to encourage consumers to buy the vehicles, which are expected to enter the market by the end of this year. The ministry has proposed removing a vehicle owner tax that is equal to five percent of the vehicle’s purchase price, as well as a 39,500 yen (about US$300) tax on vehicles with engines between 1,500 and 2,000 cubic centimeters.

STATIONARY POWER
H Power Taking Orders, Signs Agreement with Osaka Gas and DGP.
H Power Corporation is now taking orders for its two commercial, direct hydrogen fueled product lines. The EPAC-500™is a self-contained 500-Watt fuel cell power source. The Modular Power Solutions product line can be configured for indoor or outdoor use. Shipments are expected to be in September. In other news, H Power has signed a licensing agreement with Japan's Osaka Gas Company, Ltd. under which H Power acquires the rights to manufacture, integrate and improve Osaka Gas' fuel processing system for use in its FC systems. H Power also signed a Representation Agreement with Direct Global Power, Inc. (DGP) of Schenectady, NY. DGP will be responsible for developing sales opportunities for H Power's EPAC(TM)-500 and HCORE(TM)-500 power systems.
http://www.hpower.com/cgi-bin/pr.cgi?idPressRelease=74
http://biz.yahoo.com/bw/020822/222295_1.html
http://biz.yahoo.com/bw/020805/52494_1.html

Nuvera Launches Commercial Fuel Cell Generators.
Nuvera Fuel Cells has launched a hydrogen fuel cell business based on its Avanti™ 5-kW distributed generation product line. Nuvera will provide OEMs with hydrogen power modules ranging from 1 to 6-kW.

The U.S. Department of Energy (DOE) has approved plans for FuelCell Energy to install a two-megawatt fuel cell power plant at the Wabash River Energy coal gasification-combined cycle power plant in West Terre Haute, Indiana. The one-year program will demonstrate the fuel cell using coal gas.
http://www.fossil.energy.gov/techline/tl_cct_fuelcell_print.html

FCE, PPL to Install FC System at NJ College.
FuelCell Energy (FCE) will partner with PPL Energy Services to install a 250-kilowatt Direct FuelCell (DFC) power plant at Ocean County College in Toms River, NJ. The natural gas system will be operated in a cogeneration mode and will supply both electricity and heat to three buildings on the college campus.
http://biz.yahoo.com/prnews/020814/nyw111_1.html

Plug Power Delivers 9 Systems to Navy, Generates 1 Million kWh of FC Power.
Plug Power Inc. announced the sale and delivery of nine GenSys™5C systems – a 5kW, combined heat and power (CHP) grid parallel, natural gas-fueled, proton exchange membrane (PEM), fuel cell system – to Johnson Controls, Inc., under contract to the Navy Renewable Energy Division at the Naval Air Weapons Station in China Lake, California. The nine systems are expected to be installed at three Naval facilities in California. Plug Power’s five-kilowatt (kW), grid-parallel, natural gas-powered fuel cell (FC) systems have generated more than 1
milllion kilowatt hours (kWh) of electricity in the field this year. The FC systems were installed and have been operating in more than 20 customer locations in seven U.S. states and three countries, with an additional 13 systems slated to be installed later this year.

http://biz.yahoo.com/prnews/020822/nyth084_1.html

**Working Fuel Cell On Display in Colorado.**
In Colorado, a fuel cell providing power to a residence and to the electrical grid system is available for public viewing. The fuel cell will be operating at the Parade of Homes from August 31 through October 6, 2002. Miller Burton Homes, Inc., Built Green Colorado(TM), the City and County of Denver, Governor's Office of Energy Management and Conservation (OEMC), Intermountain Rural Electric Association (IREA), Plug Power Inc., and Xcel Energy, Inc. collaborated in the installation of this fuel cell.


**Hydrogenics Installs Back-up System.**
Hydrogenics Corporation announced the successful installation of its HyUPS™ regenerative back-up fuel cell power generator at a trial site provided by Nextel Communications in northern California. The next step of the trial will simulate grid power failure conditions in order to test the 25 kW HyUPS™ system under a variety of operating conditions. The trial is expected to last through to the end of the summer.


**Sulzer Hexis, GVM Sign FC Distribution Deal.**
Swiss companies Sulzer Hexis and Gasverbund Mittelland (GVM) signed a distribution agreement aimed at evaluating fuel cell (FC) systems for household use. Under the agreement, GVM will buy 30 FC systems from Sulzer Hexis for installation in customer homes.

http://www.sulzer.com

**PORTABLE POWER**

**Electric Fuel Receives Contracts, Orders from Several Companies.**
Electric Fuel Corporation has received a contract from an Israeli Security Agency to develop advanced zinc-air batteries for miniature aerial platforms. Under the terms of the contract, Electric Fuel will develop prototype zinc-air cells that can maintain high power densities for extended periods of time. In other news, Electric Fuel 's Instant Power™ Chargers for digital cameras and camcorders will be sold in 1,200 Ritz Camera stores, the nation’s largest retail photo chain, and on their award winning website 'Ritzcamera.com' with additional nationwide distribution from WYNIT, Inc., the nation’s largest and fastest growing distributor of digital imaging products. The Instant Power camcorder battery connects to the camcorder through its DC jack and offers up to 10-hours of straight use time,
depending upon the product’s make and model. Auction World, one of the foremost direct television channels in the UK, has also placed an order valued at approximately $730,000 for the Instant Power™ Chargers and Mini Chargers. The order will be supplied over the next 12 months. Auction World will use INSTANT POWER Chargers in their TV auctions, as well as in a bundling deal with the purchase of mobile phones sold on a Vodafone contract.

http://biz.yahoo.com/prnews/020806/nytu143_2.html
http://biz.yahoo.com/prnews/020819/nym144_1.html
http://biz.yahoo.com/prnews/020826/nym078_1.html

FUEL CELL COMPONENTS

IdaTech Launches Fuel Processor.
IdaTech commercially launched its FPM 20(TM) fuel processor module – the first commercial product of its kind incorporating a steam reformer and the company’s patented, two-stage purification process into a compact package. The first of a family of fuel processors to be commercially released, the FPM 20(TM) is designed for simple integration into fuel cell systems or for use as a stand-alone hydrogen generator producing high-purity hydrogen.

http://biz.yahoo.com/prnews/020826/sfm080_1.html

Hydrogenics and Dow Sign Agreement.
Hydrogenics Corporation and Dow Corning have signed an agreement to jointly commercialize an innovative manufacturing process that the two companies co-developed for sealing PEM fuel cell stacks, electrolysers and membrane electrode assemblies (MEA). Fuel Cell "Seal-in-Place™"(FCSIP) technology is a robust and cost-effective automated sealing process that injects Dow Corning's proprietary silicone materials into an unsealed assembled stack.


FuelCell Energy Receives More Orders from MTU.
FuelCell Energy, Inc. has received additional orders by the MTU unit of DaimlerChrysler for fuel cell components for six 250 kW units.

http://biz.yahoo.com/prnews/020828/nyw027_1.html

AMI to Supply Additional Test Stations to Global Thermoelectric.
Global Thermoelectric Inc. has issued a contract to Advanced Measurements Inc. (AMI) to supply 14 additional solid oxide fuel cell (SOFC) test stations for delivery in the fall of 2002.

http://64.69.77.104/generic_frames.asp?content_page=news.htm

Solvay Unveils New Membrane Website.
Solvay Advanced Polymers has launched a new website designed to help manufacturers and their end-users better understand the benefits of using
polymers for membranes. The site features the company's family of semi-permeable sulfone polymers and is focused on educating its visitors about the content, manufacturing and uses of polymeric membranes.
http://www.solvaymembranes.com

REPORTS/MARKET STUDIES

Global Stationary Fuel Cell Markets.
Allied Business Intelligence (ABI) released a report predicting the wide-scale adoption of commercial stationary fuel cell (FC) technology in the near future. The study, titled "Global Stationary Fuel Cell Markets – A Detailed Analysis of an Emerging Industry," indicates that FC generation capacity will increase to nearly 16,000 megawatts (MW) by 2012, from its current level of about 45 MW.
http://www.alliedworld.com

Metrics Group has released a new report – “Technical Intelligence Profile (TIP): Fuel Cells.” The TIP provides a broad overview of patenting activity in the field of Fuel Cells, as well as general competitive intelligence on the patenting of select market leaders and universities.
http://www.metricsgroup.com

MISCELLANEOUS

Pacific Fuel Cell Signs Agreement with University of California.
Pacific Fuel Cell Corporation has signed an agreement with the University of California (UC) to research and develop a fuel cell prototype based on Pacific Fuel Cell's proprietary carbon nanotechnology. The major purpose of the research and development (R&D) project is to sharply reduce the amount of platinum required for fuel cell operation.

Wartsila, Topsoe Join to Develop Fuel Cells.
Wartsila has entered into an agreement with Haldor Topsoe to jointly develop and market new fuel cell products with power outputs above 200 kilowatts (kW) for distributed power and marine applications. The two companies will combine Wartsila's decentralized power plant applications and marine technology experience with Haldor Topsoe's experience in catalyst development for the oil industry and planar solid oxide fuel cell (SOFC) technology development.
http://www.haldortopsoe.com

Fuel Cells 2000 has added new features to its award-winning website, www.fuelcells.org. An Interactive Map of Fuel Cell Developers and a Fuel Cell Installation chart are just some of the new items that can be found.
http://biz.yahoo.com/bw/020903/32561_1.html
CONFERENCES/CALL FOR PAPERS

Early Markets for Stationary Fuel Cells.
The 2nd Annual Early Markets for Stationary Fuel Cells will be held at the Radisson Hotel Boston in Boston, Massachusetts, from September 30 – October 1, 2002. For registration details, please visit http://www.srinstitute.com/part_iter_site_page.cfm?iteration_id=438

f-cell 2002.
The “forum f-cell 2002” will be held October 14-16, 2002, Stuttgart, Germany. For details, go to http://www.f-cell.de/english/.

Environment UK 2002.

CHP Conference.

Hydrogen Infrastructure Investment Roundtable.

Fuel Cell Seminar.
The 2002 Fuel Cell Seminar will be held November 18-21, 2002, at the Palm Springs Convention Center in Palm Springs, California. For more information, go to www.gofuelcell.com.

National Ethanol Conference.
The National Ethanol Conference will be held February 17-19, 2003, at the Camelback Inn Marriott Resort in Scottsdale, Arizona. For more information, please visit www.ethanolRFA.org.

Electric Power 2003 takes place March 4-6, 2003, at the George R. Brown Convention Center in Houston, Texas. www.electricpowerexpo.com

Hyforum 2003.
Century” – will be October 20-23, 2003, in Beijing, China. For details, check out www.chinahydrogen.org.

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*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.*