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FUEL CELL CONNECTION - November 2007 Issue

IN THIS ISSUE

- * National Guard Base to Test Cold-Weather Hydrogen Fueling Technologies
- * DOE Seeks Entrepreneurs for New "Residency" Program
- * Navy to Test SOFC Stacks from SECA
- * Honda Unveils FCX Clarity Fuel Cell Vehicle Available for Leasing in 2008
- * EPA Offers Research Grants for Environmental Leaders of the Future

CONTENTS

News on U.S. Government Fuel Cell Programs

1. National Guard Base to Test Cold-Weather Hydrogen Fueling Technologies
2. Fuel Cell Powers Record UAV Flight
3. NETL Publishes Fact Sheets on Hydrogen-from-Coal Research Progress
4. DOE Releases FutureGen Environmental Impact Statement
5. Awards Presented at Fuel Cell Seminar

RFP / Solicitation News

6. DOE Seeks Entrepreneurs for New "Residency" Program
7. Fuel Cell Topics Included in DOD 2008.1 SBIR Solicitation
8. LIPA Issues Renewable Energy RFP
9. SECA Solicitation for Core Technology and Innovative Concepts
10. CEC Announces International Energy Fund Solicitation for California Firms

Contract / Funding Awards

11. HBCU/OMI Award to Fund Hydrogen Separation Membranes
12. Navy to Test SOFC Stacks from SECA

State Activities

13. California Publishes Committee Final Report on 2007 Integrated Energy Policy Report

Industry Headlines

14. Honda Unveils FCX Clarity Fuel Cell Vehicle Available for Leasing in 2008
15. GM Partners with Walt Disney Company on Fuel Cell Vehicle Demonstration
16. Ballard Transfers Automotive Fuel Cell Division to New Company

University Activities

17. EPA Offers Research Grants for Environmental Leaders of the Future
18. University Fuel Cell Roundup

Administration

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**News on U.S. Government Fuel Cell Programs**  
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1. National Guard Base to Test Cold-Weather Hydrogen Fueling Technologies

Michigan's Selfridge Air National Guard (SANG) Base will be the site of a hydrogen energy station evaluation and demonstration program supported by the U.S. Departments of Defense and Energy. The hydrogen station, designed and built by Chevron Technology Ventures, will power a fleet of five Hyundai Tucson fuel cell vehicles that will be used by the Army and National Guard. Hydrogen will be generated using advanced steam methane reforming technology, which will produce about 40 kilograms of hydrogen per day.

<http://media.prnewswire.com/en/jsp/latest.jsp?sessionid=F6D2E3F4D7E14DD44CBD52FBB99E3DEC.tomcat2?resourceid=3592630&access=EH>

2. Fuel Cell Powers Record UAV Flight

A fuel cell-powered "micro" unmanned aerial vehicle (UAV) made a record 78-mile flight, using only 25% of the hydrogen tank capacity stored on-board the aircraft and exceeding by 28 miles a previous micro-UAV record set in 2006. The micro UAV was designed by U.S. aerospace research laboratories and supported by NASA, the Dryden Flight Research Center, the U.S. Air Force Office of Scientific Research, and the National Science Foundation. The fuel cell propulsion system for the vehicle was designed by Horizon Fuel Cell Technologies.

<http://www.horizonfuelcell.com/file/Pterosoardistancerecord.pdf>

3. NETL Publishes Fact Sheets on Hydrogen-from-Coal Research Progress

The National Energy Technology Laboratory (NETL) has published fact sheets on six DOE research and development projects designed to promote large-scale production of hydrogen from coal. The fact sheets detail progress made as the projects near the end of their first year of activity in support of President Bush's Hydrogen Fuel Initiative.

http://www.netl.doe.gov/publications/press/2007/071022-DOE-NETL_Details_Progress_of_Hydrogen-from-Coal.html

4. DOE Releases FutureGen Environmental Impact Statement

The U.S. Department of Energy (DOE) has released an Environmental Impact Statement (EIS) for the FutureGen project, a near-zero emissions power plant to produce both electricity and commercial-grade hydrogen gas from coal while capturing and sequestering greenhouse gas emissions. The EIS evaluated four potential sites to host the project. DOE will issue a Record of Decision for this Final EIS no sooner than 30 days after the Environmental Protection Agency publishes its Notice of Availability of the Final EIS in the Federal Register.

http://www.fossil.energy.gov/news/techlines/2007/07078-FutureGen_EIS_Released.html

5. Awards Presented at Fuel Cell Seminar

Dr. Subhash C. Singhal, a Battelle Fellow and Director, Fuel Cells at the Pacific Northwest National Laboratory, along with Mr. John Trocciola, a private consultant whose clients include UTC Power, DOE, DOD and LIPA, received the 2007 Fuel Cell Seminar & Exposition Award for outstanding leadership and innovation in the promotion of the overall advancement of fuel cell technology. Winners of the Bernard S. Baker Awards were: 1st place, Wenhua Huang, Boston University; 2nd place, Zhongwei Chen, University of California, Riverside; and 3rd place, Kyung

Joong Yoon, Boston University. The Baker Awards encourage and recognize exceptional students in the field of fuel cell related technologies.

<http://www.bu.edu/phpbin/news-cms/news/?dept=633&id=47328>

<http://www.fuelcellseminar.com>

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**RFP/Solicitation News**  
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6. DOE Seeks Entrepreneurs for New "Residency" Program

The DOE seeks applicants for a new Entrepreneur in Residence (EIR) Program, which will bring venture capital sponsored entrepreneurs into three DOE National Laboratories to develop plans to commercialize new clean energy technologies. Selected entrepreneurs will conduct technology assessments, evaluate market opportunities, formulate preliminary business cases, and propose business structures for start-up enterprises. DOE will provide up to \$300,000 funding to support this initiative. Deadline for applications is December 21, 2007.

<http://www.energy.gov/news/5661.htm>

7. Fuel Cell Topics Included in DOD 2008.1 SBIR Solicitation

Topics related to solid oxide fuel cell technology are included in the 2008.1 Small Business Innovation Research (SBIR) Solicitation issued by the U.S. Department of Defense (DOD). Potential proposers may ask questions directly of Topic Authors until December 9, 2007. Phase I awards under the DOD SBIR are typically \$70,000 to \$100,000 in size over a period of six to nine months. Successful Phase I projects will be eligible to apply for Phase II funding, which is typically \$500,000 to \$750,000 over a period of up to 24 months. The deadline for Phase I project proposals is January 9, 2008.

<http://www.acq.osd.mil/osbp/sbir/solicitations/sbir081/index.htm>

8. LIPA Issues Renewable Energy RFP

The Long Island Power Authority (LIPA) has issued a Request for Proposals (RFP) from eligible Renewable Generating Facilities (RGF) interested in selling blocks of renewable energy. Fuel cells and biogas/biofuels are listed as eligible sources of energy. A transcription of the November 28 Proposers' Conference will be posted on the RFP web site. Questions regarding this RFP should be submitted on or before December 19, 2007. Proposals are due January 11, 2008.

<http://www.lipower.org/company/papers/rfp/renewable.html>

9. SECA Solicitation for Core Technology and Innovative Concepts

The DOE Office of Fossil Energy has issued a master solicitation, Solid State Energy Conversion Alliance (SECA) Core Technology and Innovative Concepts. Applications are being accepted under four specific "Areas of Interest" related to the SECA goal of developing modular, 5-kW solid oxide fuel cell technologies. Awards under this solicitation will be for Phase I projects only, with funding levels for individual project awards varying depending on the Area of Interest. Deadline for applications is January 15, 2008. [https://e-](https://e-center.doe.gov/iips/faopor.nsf/3b3cff0a4a1f243485256ec100490e1a/c6b3272bfe33133d8525733d00526bd3?OpenDocument)

[center.doe.gov/iips/faopor.nsf/3b3cff0a4a1f243485256ec100490e1a/c6b3272bfe33133d8525733d00526bd3?OpenDocument](https://e-center.doe.gov/iips/faopor.nsf/3b3cff0a4a1f243485256ec100490e1a/c6b3272bfe33133d8525733d00526bd3?OpenDocument)

10. CEC Announces International Energy Fund Solicitation for California Firms

The California Energy Commission issued the 2008 International Energy Fund Solicitation to assist California firms with projects leading to the export of power generation technologies and services in foreign nations. Proposed products or services must be commercially available. The

Energy Commission expects to award up to \$250,000 for FY2007/08, with individual awards of up to \$25,000. Proposals are due February 13, 2008.
<http://www.energy.ca.gov/contracts/export.html>

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**Contract / Funding Awards**  
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11. HBCU/OMI Award to Fund Hydrogen Separation Membranes

North Carolina A&T State University will receive \$200,000 from DOE for a project to investigate a new approach for coating thin film membranes used in hydrogen separation technology. The project is one of four to receive funding through the annual competition for Historically Black Colleges and Universities and Other Minority Institutions (HBCU/OMI), sponsored by DOE's Office of Fossil Energy.

http://www.fossil.energy.gov/news/techlines/2007/07075-DOE_Awards_HBCU_Grants.html

12. Navy to Test SOFC Stacks from SECA

The U.S. Department of the Navy announced it intends to purchase two 10-cell SOFC stacks for independent testing and evaluation. It is expected that the Naval Sea Systems Command, NUWC Division Newport will test a variety of SOFCs being developed under DOE's Solid State Energy Conversion Alliance (SECA) Program. The announcement states the first stack to be tested by the Division will be from Delphi.

<http://www.fbo.gov/spg/DON/NAVSEA/N66604/N66604%2D08%2DQ%2D0395/Combine%20Synopsis%5FSolicitation.html>

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**State Activities**  
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13. California Publishes Committee Final Report on 2007 Integrated Energy Policy Report

The California Energy Commission has published the Committee Final Report on the 2007 Integrated Energy Policy Report, which will be considered for adoption by the Commission at its November meeting. The Report states that "Over the longer term, advanced biofuels, hydrogen, and plug-in hybrid vehicles are expected to play a role in meeting California's Low Carbon Fuel Standard." The state's energy plan establishes targets for alternative fuel use (including hydrogen) beginning with nine percent by 2012, 11 percent by 2017, and 26 percent by 2022.

http://www.energy.ca.gov/2007_energypolicy/

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**Industry Headlines**  
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14. Honda Unveils FCX Clarity Fuel Cell Vehicle Available for Leasing in 2008

Honda unveiled its new FCX Clarity fuel cell vehicle at the Los Angeles Auto Show and announced plans to begin leasing the vehicle on a limited basis in summer 2008. Current plans call for a three-year lease term with a price of \$600 per month. The FCX Clarity features a lithium ion battery pack and 100-kW fuel cell stack to power the vehicle's electric drive motor. Hydrogen for the fuel cell is stored in a single tank. The vehicle has a 68 mpg (gge) fuel economy and a range of 270 miles between fuelings.

15. *GM Partners with Walt Disney Company on Fuel Cell Vehicle Demonstration*
General Motors (GM) announced it will supply ten Chevrolet Equinox fuel cell vehicles as part of a new partnership with the Walt Disney Company. The fuel cell vehicles will be deployed as shuttles on Disney properties in California.
<http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/viewpressrelDetail.do?domain=2&docid=41305>

University Activities

18. *University Fuel Cell Roundup*
(summaries contributed by Kathy Haq, Dir. of Outreach and Communications, National Fuel Cell Research Center, UC Irvine, khag@nfcrc.uci.edu)

Biofilms made up of millions of bacteria are at the root of many serious chronic infectious diseases and industrial contamination, but they might also be used to power microbial fuel cells whose fuel could be wastewater. The concept recently was outlined at a European Science Foundation workshop by Cristian Picioreanu, an associate professor with the Biofilm Research Group at Delft University of Technology. This use of biofilms stems from the ability of bacteria to transfer electrons to metals, which can be the cathode of a fuel cell, via the minute tentacles called pili extending from their surface. [29-Oct-2007, *Space Daily*]

<http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/view/monthlyreleasedetail.do?domain=74&docid=40734>

Exxon Mobil Corporation on Nov. 15 announced a partnership with QuestAir Technologies, Plug Power Inc. and Ben-Gurion University to work toward commercialization of an on-vehicle hydrogen production system for use in a fuel cell-powered lift truck application. Under the terms

of the partnership, Plug Power will seek to commercialize unique technologies developed by ExxonMobil, QuestAir Technologies and Ben-Gurion University that take liquid fuels -- gasoline, diesel, ethanol or biodiesel -- and convert them into hydrogen on board the vehicle, where it will be used in a fuel cell power train.

http://www.businesswire.com/portal/site/exxonmobil/index.jsp?ndmViewId=news_view&ndmConfId=1001106&newsId=20071115005128&newsLang=en&vnsId=-2147483648

Honda has awarded Professor Paul McGinn of the University of Notre Dame's department of chemical and biomolecular engineering \$50,000 for "enhanced design and performance of fuel cells." McGinn was one of seven U.S. researchers and universities recognized at the 10th anniversary of the Honda Initiation Grant program (www.hondagrants.com) on Nov. 15. The Honda Initiation Grant program was established in 1997 to foster collaborative research activity between Honda R&D engineers in the U.S. and members of the academic community in North America. The goal of the Honda Initiation Grant program is to fund innovative ideas in the early stages of research that are likely to make valuable contributions to technology over a longer term of five to ten years. <http://corporate.honda.com/press/article.aspx?id=4365>

The China Ministry of Science and Technology, the Shanghai government, Tongji University, and Shell Hydrogen on Nov. 15 announced the opening of the first hydrogen refueling station in Shanghai for fuel cell vehicles. The Anting Hydrogen refueling station, located at the International Automotive City in Anting, Shanghai, will dispense compressed gaseous hydrogen for a fleet of fuel cell cars and buses operating in the Shanghai region. Tongji University is responsible for the development and operation of the new hydrogen station, with Shell contributing technical advice and part of the funding. The station also features an information center on the hydrogen economy. http://www.shell.com/home/content/media-en/news_and_library/press_releases/2007/hydrogen_shanghai_15112007.html

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**Administration**  
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Press releases and story ideas may be forwarded to Bernadette Geyer, editor, for consideration at [fuelcellconnection @ yahoo.com](mailto:fuelcellconnection@yahoo.com).

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**About Fuel Cell Connection**  
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US Fuel Cell Council -- The US Fuel Cell Council is the business association for anyone seeking to foster the commercialization of fuel cells in the United States. Our membership includes producers of all types of fuel cells, as well as major suppliers and customers. The Council is member driven, with eight active Working Groups focusing on: Codes & Standards; Transportation; Power Generation; Portable Power; Stack Materials and Components; Sustainability; Government Affairs; and Education & Marketing. The Council provides its members with an opportunity to develop policies and directions for the fuel cell industry, and also gives every member the chance to benefit from one-on-one interaction with colleagues and opinion leaders important to the industry. Members also have access to exclusive data, studies, reports and analyses prepared by the Council, and access to the "Members Only" section of its web site. (<http://www.usfcc.com/>)

National Fuel Cell Research Center -- The mission of the NFCRC is to promote and support the genesis of a fuel cell industry by providing technological leadership within a vigorous program of research, development and demonstration. By serving as a locus for academic talent of the highest caliber and a non-profit site for the objective evaluation and improvement of industrial products, NFCRC's goal is to become a focal point for advancing fuel cell technology. By supporting industrial research and development, creating partnerships with State and Federal agencies, including the U.S. Department of Energy (DOE) and California Energy Commission (CEC), and overcoming key technical obstacles to fuel cell utilization, the NFCRC can become an invaluable technological incubator for the fuel cell industry. (<http://www.nfcrc.uci.edu/>)

National Energy Technology Laboratory -- The National Energy Technology Laboratory is federally owned and operated. Its mission is "*We Solve National Energy and Environmental Problems.*" NETL performs, procures, and partners in technical research, development, and demonstration to advance technology into the commercial marketplace, thereby benefiting the environment, contributing to U.S. employment, and advancing the position of U.S. industries in the global market. (<http://www.netl.doe.gov>)