

PDF Versions of Fuel Cell Connection are posted at <http://www.usfcc.com/BackIssues.html>

UNSUBSCRIBE using the link at the bottom of this email.

SUBSCRIBE at <http://lb.bcentral.com/ex/manage/subscriberprefs?customerid=9927>

~~~~~  
**FUEL CELL CONNECTION – August 2003 Issue**  
~~~~~

IN THIS ISSUE

- * DOE Releases Draft Strategic Plan for Comments
- * NASA Seeks Water Electrolyzer for Hydrogen/Oxygen Gas Production
- * DOE Awards State Energy Funding to Fuel Cell, Hydrogen Projects
- * FERC Invites Comments on Expedited Procedures for Small Generators
- * Ballard Unveils Fuel Cell Emergency Generator

~~~~~  
**CONTENTS**

**News on U.S. Government Fuel Cell Programs**

1. DOE Releases Draft Strategic Plan for Comments
2. PNNL Details GridWise™ Initiative to Reduce Electric Grid Vulnerabilities
3. Italy to Join International Partnership for the Hydrogen Economy
4. NREL Investigates Ultracapacitors for Fuel Cell Vehicles
5. FTA-Funded Fuel Cell Bus Demonstrates 145-Mile Range
6. DOD Looks to Fuel Cells to Improve Fuel Efficiency of Its Ground Vehicles
7. Consortium to Develop Fuel Cell Locomotives
8. Battery Shortages in Iraq Lead to Military Examination of Fuel Cells and Solar Panels
9. Sandia Research May Achieve Hydrogen Storage Goal
10. Final Report Published for Military Residential Fuel Cell Demonstration
11. Report Published on Basic Energy Sciences Hydrogen Workshop
12. NETL Posts Presentations from Direct Carbon Fuel Cell Workshop
13. First Greenhouse Gas Technology Center Advanced Energy Stakeholder Meeting Set

**RFP / Solicitation News**

14. NASA Seeks Water Electrolyzer for Hydrogen/Oxygen Gas Production
15. NREL Solicits Licensing Agreements for its Fiber Optic Hydrogen Gas Sensor
16. RFI Issued for Liquid-Fueled Fuel Cell Systems
17. ORNL Seeks Support for FreedomCAR R&D
18. EPSCoR Grant Applications Invited
19. Alternative Fuels Grants Available in Pennsylvania
20. Ongoing Opportunity for Waste Utilization Technologies

**Contract / Funding Awards**

21. DOE Awards State Energy Funding to Fuel Cell, Hydrogen Projects
22. DOE Names Greenhouse Gas Sequestration Regional Partners
23. NASA Awards \$4.3 million Contract Option to Teledyne for PEMFC System
24. NSWC to Purchase Hydrogenics Electrolyzer

**Legislation / Regulation**

25. FERC Invites Comments on Expedited Procedures for Small Generators

**State Activities**

26. State Interconnection Data Available

27. AQMD Names Test Sites for Hydrogen Project

**Industry Headlines**

- 28. Ballard Unveils Fuel Cell Emergency Generator
- 29. Ford Testing Hydrogen Hybrid Vehicle
- 30. Fuel Cells Available for Educational Research & Teaching
- 31. Fuel Cell Boat Tested In Newport Beach Harbor
- 32. Eighth Grove Fuel Cell Symposium

**Administration**

About *Fuel Cell Connection*

Subscribe at <http://lb.bcentral.com/ex/manage/subscriberprefs?customerid=9927>

~~~~~  
News on U.S. Government Fuel Cell Programs
~~~~~

-----  
*1. DOE Releases Draft Strategic Plan for Comments*

The Department of Energy has released a Draft Strategic Plan which charts the course for the next 25 years. Two of the 14 strategies listed in the Plan are focused on fuel cells and the hydrogen economy. Intermediate goals listed include "By 2010, bring down the cost of the hydrogen equivalent of a gallon of gas to \$1.50," and "By 2015, technologies are developed that allow a decision by industry to commercialize fuel cell vehicles and hydrogen infrastructure." Public opinion is being solicited through September 8, 2003. An online form is also provided for comments. <http://strategicplan.doe.gov>

-----  
*2. PNNL Details GridWise™ Initiative to Reduce Electric Grid Vulnerabilities*

Pacific Northwest National Laboratory is working on an initiative called GridWise™ that seeks to modernize the electric grid in the United States by incorporating new energy resources such as fuel cells, and monitoring technologies that would turn off power to appliances not in use when fluctuations are noticed on the grid. <http://www.pnl.gov/news/2003/03-30.htm>

-----  
*3. Italy to Join International Partnership for the Hydrogen Economy*

DOE Secretary Spencer Abraham announced that Italy will join the International Partnership for the Hydrogen Economy (IPHE). Under a bilateral science and technology agreement, Italy and the United States already cooperate on research and development in the areas of hydrogen production, storage, transport, end-use technologies, and codes & standards. [http://www.energy.gov/engine/content.do?PUBLIC\\_ID=13922&BT\\_CODE=PR\\_PRESSRELEASE\\_S&TT\\_CODE=PRESSRELEASE](http://www.energy.gov/engine/content.do?PUBLIC_ID=13922&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE)

-----  
*4. NREL Investigates Ultracapacitors for Fuel Cell Vehicles*

Researchers at the National Renewable Energy Laboratory are using a hybrid electric vehicle simulation model to simulate a fuel cell hybrid vehicle with an ultracapacitor energy storage system. [http://www.ornl.gov/news/pulse/pulse\\_v139\\_03.htm](http://www.ornl.gov/news/pulse/pulse_v139_03.htm)

-----  
*5. FTA-Funded Fuel Cell Bus Demonstrates 145-Mile Range*

A zinc air fuel cell bus developed by Arotech Corporation held its last performance test drive planned under phase III of a program with the Department of Transportation's Federal Transit Administration. The bus was newly-fitted with ultracapacitors, which helped to increase the vehicle's range from 127 to 145 miles.

[http://biz.yahoo.com/bw/030812/125340\\_1.html](http://biz.yahoo.com/bw/030812/125340_1.html)

-----  
*6. DOD Looks to Fuel Cells to Improve Fuel Efficiency of Its Ground Vehicles*

The Department of Defense has designated the U.S. Army National Automotive Center (NAC) to work with automotive and fuel cell companies toward developing fuel cells for vehicles and the necessary fueling infrastructure. NAC will invest \$40 million on fuel cell-related contracts in FY2004. [http://wardsauto.com/ar/auto\\_military\\_gets\\_ready/index.htm](http://wardsauto.com/ar/auto_military_gets_ready/index.htm)

-----  
*7. Consortium to Develop Fuel Cell Locomotives*

An international consortium funded by the U.S. Army National Automotive Center (NAC) will develop and demonstrate a 109-metric ton, 1-MW fuel cell locomotive for military and commercial railway applications. Funding for Phase 1 of the five-year project is \$1 million.

[http://www.fuelcellpropulsion.org/army\\_loco\\_1aug2003.htm](http://www.fuelcellpropulsion.org/army_loco_1aug2003.htm)

-----  
*8. Battery Shortages in Iraq Lead to Military Examination of Fuel Cells and Solar Panels*

"Inadequate inventories of military batteries" during Operation Iraqi Freedom is leading to an examination of alternative power sources such as fuel cells and solar panels to replace non-rechargeable batteries on the battlefield.

<http://www.nationaldefensemagazine.org/article.cfm?id=1190>

-----  
*9. Sandia Research May Achieve Hydrogen Storage Goal*

Research at Sandia National Laboratory on a new class of materials may come close to achieving the DOE goal of 6 weight percent storage of hydrogen for fuel cell vehicles.

[http://www.ornl.gov/news/pulse/pulse\\_v139\\_03.htm](http://www.ornl.gov/news/pulse/pulse_v139_03.htm)

-----  
*10. Final Report Published for Military Residential Fuel Cell Demonstration*

The Department of Defense has published a final report on the one-year demonstration of a residential fuel cell for military facilities. The 3-kW hydrogen PEM fuel cell developed by Avista Labs was installed and operated at the Geiger Field, 242<sup>nd</sup> Combat Communications Squadron's building 401. The fuel cell, which ran for over 8,760 hours, exceeded the 90% availability requirement. <http://www.dodfuelcell.com/res/GeigerUpdatedFinalReport.pdf>

-----  
*11. Report Published on Basic Energy Sciences Hydrogen Workshop*

The DOE Office of Science has published its "Report of the Basic Energy Sciences Workshop on Hydrogen Production, Storage, and Use," which was held in May 2003. The Workshop was held to assess the basic research needs for a hydrogen economy. Conclusions of the Workshop included the finding that "Basic research understanding of the mechanisms for proton and oxygen ion conduction, of gas separation, and of surface behavior at interfaces is fundamental to the design of new approaches to hydrogen production, storage, and use."

<http://www.sc.doe.gov/bes/hydrogen.pdf>

-----  
*12. NETL Posts Presentations from Direct Carbon Fuel Cell Workshop*

The National Energy Technology Laboratory has posted presentations from its Direct Carbon Fuel Cell Workshop, held in July 2003. Presentation topics include "Reactions of the Carbon Anode in Molten Carbonate Electrolyte" and "Design, Efficiency and Materials for Carbon/Air Fuel Cells." <http://www.netl.doe.gov/publications/proceedings/03/dcfcw/dcfcw03.html>

-----  
*13. First Greenhouse Gas Technology Center Advanced Energy Stakeholder Meeting Set*

The Environmental Technology Verification (ETV) Program's Greenhouse Gas Technology Center has scheduled its first Advanced Energy Stakeholder Group meeting for September 18, 2003, in Washington, DC. The ETV Program has verified fuel cells for use in landfills and is currently verifying fuel cell combined heat and power systems.

[http://www.sri-rtp.com/ADVANCED%20ELECTRICAL\\_Agenda2.pdf](http://www.sri-rtp.com/ADVANCED%20ELECTRICAL_Agenda2.pdf)

~~~~~  
RFP/Solicitation News
~~~~~

-----  
*14. NASA Seeks Water Electrolyzer for Hydrogen/Oxygen Gas Production*

NASA's Johnson Space Center has a requirement for a water electrolyzer for production of hydrogen/oxygen gas to be used for fuel cell testing. Deadline for submitting quotes is August 30, 2003. <http://www.eps.gov/spg/NASA/JSC/OPDC20220/9-BH13-HA3-03-40P/SynopsisP.html>

-----  
*15. NREL Solicits Licensing Agreements for its Fiber Optic Hydrogen Gas Sensor*

The National Renewable Energy Laboratory anticipates negotiating license agreements with U.S. companies interested in commercializing a fiber optic hydrogen gas sensor that has applications in the transportation industry (hydrogen-powered vehicles), fuel cells, weld inspections, and semiconductor industries. Deadline for response is September 1, 2003.

<http://www.eps.gov/spg/DOE/NREL/NR/HGS01/SynopsisP.html>

-----  
*16. RFI Issued for Liquid-Fueled Fuel Cell Systems*

The U.S. Army Communications-Electronics Command Acquisition Center is soliciting information on available liquid fueled fuel cell systems capable of providing continuous power that can be added to the Army inventory of available power sources. Systems must utilize a liquid feedstock fuel, not hydrogen bottles, and produce a full continuous power output in the range of 2-60 kW. This announcement is seeking White Papers, with a response deadline of September 19, 2003.

<http://www.eps.gov/spg/USA/USAMC/DAAB15/DAAB15-03-Q-LFFC/SynopsisR.html>

-----  
*17. ORNL Seeks Support for FreedomCAR R&D*

Oak Ridge National Laboratory is requesting proposals from prospective suppliers to provide support in the R&D efforts of DOE's Office of FreedomCAR and Vehicle Technologies. The two topics covered by this solicitation are: a System on a Chip (SoC) motor controller for use in applications such as fuel cell and hybrid vehicles; and a high voltage to isolated, DC-to-DC converter for use in fuel cell and hybrid vehicles. Deadline for proposals is September 23, 2003.

<http://www.eps.gov/spg/DOE/ORNL/ORNL/6400002514S/Modification%2001.html>

-----  
*18. EPSCoR Grant Applications Invited*

DOE's Office of Science is inviting grant applications under its Experimental Program to Stimulate Competitive Research (EPSCoR). The purpose of the program is to enhance the capabilities of designated States to conduct nationally-competitive energy-related research. Approximately \$1.0 million is available for one or two awards for FY2004 under this solicitation. Deadline for applications is September 23, 2003.

<http://www.sc.doe.gov/grants/Fr03-21.html>

-----  
*19. Alternative Fuels Grants Available in Pennsylvania*

Pennsylvania's Department of Environmental Protection has more than \$17 million in Alternative Fuels Incentive Grants available to fund projects that help reduce air pollution and our

dependence on foreign oil. Hydrogen is listed as an eligible fuel for the program. Applications must be submitted by October 1, 2003.

<http://www.dep.state.pa.us/newsletter/default.asp?ID=899>

-----  
*20. Ongoing Opportunity for Waste Utilization Technologies*

The Environmental Technology Verification (ETV) Program is interested in locating and testing the performance of technologies that reduce greenhouse gas emissions from human and animal waste. ETV's Greenhouse Gas Technology Center is currently accepting applications from candidates wishing to voluntarily submit technologies for independent testing. This is an ongoing cost-shared opportunity. <http://www.sri-rtp.com/official%20opportunity%20announcement.pdf>

~~~~~  
Contract / Funding Awards
~~~~~

-----  
*21. DOE Awards State Energy Funding to Fuel Cell, Hydrogen Projects*

DOE will provide over \$17.3 million for 187 energy efficiency and renewable energy projects through the State Energy Program Special Projects Competitive Grants, including four fuel cell projects: "Demonstration of a PEM Fuel Cell with On-Site Generation of Hydrogen," "Fuel Cell Demonstration and Public Education," "PEM Fuel Cell Educational Modules," and "Assessment of Hawaii's Geothermal Resource and Potential for Hydrogen Production."

[http://www.energy.gov/engine/content.do?PUBLIC\\_ID=13988&BT\\_CODE=PR\\_PRESSRELEASE\\_S&TT\\_CODE=PRESSRELEASE](http://www.energy.gov/engine/content.do?PUBLIC_ID=13988&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE)

-----  
*22. DOE Names Greenhouse Gas Sequestration Regional Partners*

DOE has named seven partnerships of state agencies, universities, and private companies that will form the core of a nationwide network to help determine the best approaches for capturing and permanently storing greenhouse gases. DOE will provide approximately \$11.1 million to support the partnerships over the next two years.

[http://www.fossil.energy.gov/news/techlines/03/tl\\_sequestration\\_partnershipselections.html](http://www.fossil.energy.gov/news/techlines/03/tl_sequestration_partnershipselections.html)

-----  
*23. NASA Awards \$4.3 million Contract Option to Teledyne for PEMFC System*

NASA awarded a \$4.3 million contract option to Teledyne Energy Systems for the development and delivery of an "engineering model" PEM fuel cell power system to the Glenn Research Center. The 7-kW system will be used in NASA's Second Generation Reusable Launch Vehicle Program. [http://www.teledyneenergysystems.com/news/news\\_nasa-pem.asp](http://www.teledyneenergysystems.com/news/news_nasa-pem.asp)

-----  
*24. NSWC to Purchase Hydrogenics Electrolyzer*

The Naval Surface Warfare Center Crane Division announced that it intends to purchase a 4-kW Electrolyzer Module from Hydrogenics Corporation.

<http://www.eps.gov/spg/DON/NAVSEA/N00164/N0016403Q0320/SynopsisP.html>

~~~~~  
Legislation / Regulation
~~~~~

-----  
*25. FERC Invites Comments on Expedited Procedures for Small Generators*

On the same day that the Federal Energy Regulatory Commission (FERC) issued its standard procedures and a standard agreement for the interconnection of generators larger than 20 MW, it also proposed expedited procedures for small generators no larger than 20 MW. The proposed rule includes "super-expedited procedures for interconnecting pre-certified generators 2 MW or less to a low voltage electric system; expedited procedures for interconnecting generators between 2 and 10 MW to a low voltage electric system; and, expedited procedures for interconnecting small generators to a high voltage electric system...and for generators larger than 10 MW to a low voltage electric system." Comments on the proposed rule should be sent to FERC within 45 days of the NOPR's publication in the Federal Register. Comments may be filed electronically via the eFiling link at <http://www.ferc.gov>.  
<http://www.ferc.gov/press-room/pr-current/07-23-03-interconnect1.pdf>

~~~~~  
State Activities
~~~~~

-----  
*26. State Interconnection Data Available*

Over the past two months, interconnection standards for 29 states have been added to the Database of Incentives for Renewable Energy. Each record includes a summary of the status of a state's interconnection standards development process, with links to relevant documents. The summary includes a listing of which technologies are eligible under the interconnection standard.  
<http://www.dsireusa.org>

-----  
*27. AQMD Names Test Sites for Hydrogen Project*

The Summer 2003 issue of Minnesota's "Energy Highlights" newsletter features an article detailing legislation that includes hydrogen, renewable energy and nuclear waste issues. The legislation transfers \$10 million from the state's Renewable Development Fund to the University of Minnesota, with at least \$3 million specifically for research focused on environmentally sound production of hydrogen and improving fuel cell technologies.

[http://www.state.mn.us/mn/externalDocs/Summer\\_2003\\_073103015914\\_7-03Highlights.pdf](http://www.state.mn.us/mn/externalDocs/Summer_2003_073103015914_7-03Highlights.pdf)

~~~~~  
Industry Headlines
~~~~~

-----  
*28. Ballard Unveils Fuel Cell Emergency Generator*

Ballard Power Systems unveiled a new 1-kW hydrogen-fueled fuel cell stationary backup power system, the Nexa® RM Series. Ballard has delivered systems for utility and server room field UPS (uninterruptible power system) trials, and has scheduled deliveries for telecommunications field trials before year-end. <http://www.ballard.com/pdfs/16%20Nexa%20RM.pdf>

-----  
*29. Ford Testing Hydrogen Hybrid Vehicle*

Ford Motor Company is testing two H2RV vehicles, which combine a hydrogen internal combustion engine, boosted by a supercharger, with a Modular Hybrid Transmission System. The vehicles are now on the streets of southeastern Michigan.

[http://media.ford.com/print\\_doc.cfm?article\\_id=16082](http://media.ford.com/print_doc.cfm?article_id=16082)

-----  
*30. Fuel Cells Available for Educational Research & Teaching*

Anuvu Incorporated announced the commercial availability of its industrial quality 1.5 kW fuel cells for educational institutions and research-based organizations.  
[http://biz.yahoo.com/pnews/030813/sfw018\\_1.html](http://biz.yahoo.com/pnews/030813/sfw018_1.html)

-----  
**31. Fuel Cell Boat Tested In Newport Beach Harbor**

A fuel cell water taxi powered by Millennium Cell's Hydrogen on Demand™ hydrogen fuel system and an Anuvu fuel cell was successfully operated in the Newport Beach, California, harbor, as part of pre-launch testing. The 30-day demonstration project will occur in September 2003.  
<http://www.millenniumcell.com/cgi-bin/news.pl?function=detail&id=08212003>

-----  
**32. Eighth Grove Fuel Cell Symposium**

Eighth Grove Fuel Cell Symposium – “Building Fuel Cell Industries” – ExCeL, London, UK. 24-26 September 2003 – <http://www.grovefuelcell.com>. Conference: sm.wilkinson@elsevier.com. Exhibition: pamchattin@aol.com.

~~~~~  
Administration
~~~~~

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

Subscribe at <http://lb.bcentral.com/ex/manage/subscriberprefs?customerid=9927>

~~~~~  
About Fuel Cell Connection
~~~~~

**The Sponsors**

*U.S. Fuel Cell Council* -- The U.S. 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.  
[\(http://www.usfcc.com/\)](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.

[\(http://www.nfcrc.uci.edu/\)](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>