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FUEL CELL CONNECTION – July 2004 Issue

IN THIS ISSUE

- * PNNL Publishes Fuel Cell, Hydrogen Permitting Guides
- * Fuel Cell Projects Sought Through NASA SBIR Solicitation
- * SECA Grant-Winning Projects Announced
- * Western Governors Adopt Resolution to Spur Clean Energy
- * Fuel Cell Provides Power to Democratic National Convention

CONTENTS

News on U.S. Government Fuel Cell Programs

1. NREL Researches Green Algae Mutations for Hydrogen Production
2. CERL-Funded Fuel Cell Demonstration Concludes
3. BNL Researchers Discover Titanium Role in Hydrogen Storage
4. DOE EERE Regional Offices Change Names and Web Addresses

New Government Publications Posted

5. PNNL Publishes Fuel Cell, Hydrogen Permitting Guides

RFP / Solicitation News

6. Kettering University Issues RFP for Fuel Cell Related Equipment
7. Sacramento County Seeks Renewable Power, Fuel Cell Power
8. BPA Issues Solicitation for Non-Wires Energy Solutions
9. Fuel Cell Projects Sought Through NASA SBIR Solicitation
10. \$71 Million Remains in California Emerging Renewables Program

Contract / Funding Awards

11. SECA Grant-Winning Projects Announced
12. NY State Awards \$15 Million for Clean Energy Projects
13. Fuel Cell, Hydrogen Projects Among Recipients of Biomass R&D Funding
14. DOD C2P2 Program Awards \$1.8 Million Contract to Plug Power
15. Army Research Office Awards Portable Fuel Cell Development Contract to Protonex

State Activities

16. Western Governors Adopt Resolution to Spur Clean Energy
17. New Mexico Seeks to Attract Hydrogen and Fuel Cell Companies to its State
18. Hawaii Expands Net Metering to 50 kW

University Activities

19. Scholarships Awarded to Ohio State University Students for Fuel Cell Essays
20. Rensselaer to Create Future Energy Systems Center for Advanced Technology
21. Virginia Tech, Battelle Receive Innovation Award for Membrane Research
22. Universities Develop California Hydrogen Policy White Paper

Industry Headlines

- 23. Fuel Cell Provides Power to Democratic National Convention
- 24. MTI Micro Introduces Mobion Brand Fuel Cells for PDA/Smartphone
- 25. Toshiba Unveils 100 Milliwatt DMFC
- 26. 2005 Honda FCX Earns EPA and CARB Certification

Administration

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News on U.S. Government Fuel Cell Programs

1. NREL Researches Green Algae Mutations for Hydrogen Production

Researchers at the National Renewable Energy Laboratory are creating new mutations of green algae that are more oxygen tolerant and can sustain hydrogen production in the presence of oxygen. Researchers have noted that under normal sunlight, the green algae cannot produce hydrogen for more than a few minutes.

http://www.ornl.gov/info/news/pulse/pulse_v163_04.htm

2. CERL-Funded Fuel Cell Demonstration Concludes

A demonstration of three residential fuel cells, funded by the Construction Engineering Research Laboratory, has successfully concluded, exceeding the 90% overall availability requirements on all three fuel cells. The 5-kW PEM fuel cells, manufactured by Plug Power, were installed at Brooks City-Base in San Antonio. <http://www.swri.org/9what/releases/2004/FuelCell.htm>

3. BNL Researchers Discover Titanium Role in Hydrogen Storage

Researchers at Brookhaven National Laboratory and the New Jersey Institute of Technology are researching the effects of titanium compounds on the release and re-absorption of hydrogen, to help scientists learn how similar catalysts work and improve catalyst performance. The research could lead to more efficient storage materials for hydrogen fuel cells.

<http://www.bnl.gov/bnlweb/pubaf/pr/2004/bnlpr072304.htm>

4. DOE EERE Regional Offices Change Names and Web Addresses

The six Regional Offices of the Department of Energy's Office of Energy Efficiency and Renewable Energy have been renamed to better reflect the regions they serve. Offices also have new web site addresses. Information on the new Regional Office information can be obtained from the EERE web site at <http://www.eere.energy.gov/regions>.

New Government Publications Posted

5. PNNL Publishes Fuel Cell, Hydrogen Permitting Guides

Pacific Northwest National Laboratory has published two important permitting guides for use by code officials and building owners interested in regulations pertaining to fuel cells and hydrogen.

The guides are titled "Permitting Stationary Fuel Cell Installations" and "Permitting Hydrogen Motor Fuel Dispensing Facilities."

http://www.pnl.gov/fuelcells/permit_guide.stm

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**RFP/Solicitation News**  
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6. Kettering University Issues RFP for Fuel Cell Related Equipment

Kettering University's Department of Mechanical Engineering is requesting bids for the procurement of equipment in support of its Center for Fuel Cell Systems and Powertrain Integration. Equipment requested includes an electrolyzer based hydrogen generator, a PEM single stack fuel cell test stand, a PEM multi-stack fuel cell test stand, and a solid oxide single stack fuel cell test stand. Bids will be received until August 6, 2004.

http://www.kettering.edu/mech_eng/mech_eng/EDA_EQUIPMENT_BID_DOCUMENTS.pdf

7. Sacramento County Seeks Renewable Power, Fuel Cell Power

Sacramento County has announced a solicitation to help the County meet its Renewable Portfolio Standard Program and Greenery Program needs. The Council intends to negotiate and execute Power Purchase Agreements with the highest rated and most qualified vendors for a variety of renewable resources, including fuel cell technology. August 9, 2004, is the deadline for responding to the solicitation, which is number 040055.CJB. <http://www.bids.smud.org>

8. BPA Issues Solicitation for Non-Wires Energy Solutions

Bonneville Power Administration has announced an effort to analyze the ways in which Non-Wires Solutions – such as distributed generation and CHP technologies, demand side management measures, and energy conservation – can be used as viable alternatives to transmission line construction or used to defer construction. BPA has issued a solicitation for demonstration pilot projects, with a total of \$1 million in funding available. No single proposed demonstration project will be funded for an amount greater than \$500,000. Responses to the solicitation are due by August 19, 2004. http://www.bpa.gov/Energy/N/Projects/Non_Wires/

9. Fuel Cell Projects Sought Through NASA SBIR Solicitation

NASA has posted its Small Business Innovation Research Program solicitation, which features several fuel cell and hydrogen-related sub-topics, including Electric and Intelligent Propulsion Technologies for Environmentally Harmonious Aircraft, Revolutionary Flight Concepts, and Energy Storage Technologies. Deadline for submissions is September 9, 2004.

<http://sbir.nasa.gov>

10. \$71 Million Remains in California Emerging Renewables Program

The California Energy Commission's Emerging Renewables Program reports that it still has \$71 million of the \$118.125 million allocated to the program through 2006. The Program was created to help develop a self-sustaining market for renewable energy systems in California. Fuel cell systems are included among emerging technologies eligible for funding, but only using sewer gas, landfill gas, or other renewable sources of hydrogen. Fuel cells smaller than 30 kW are eligible for a rebate of \$3.60 per Watt. Fuel cells greater than or equal to 30 kW may be eligible for a future performance incentive. Rebate funds are available on a first come first served basis until the funding is exhausted.

http://www.energy.ca.gov/renewables/emerging_renewables/funding.html

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**Contract / Funding Awards**  
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11. SECA Grant-Winning Projects Announced

Eleven new fuel cell projects were selected by the DOE Solid State Energy Conversion Alliance Program (SECA) for over \$3.3 million in funding. Projects selected include improvement of sulfur-tolerance of high-temperature fuel cell materials, development of modifications to interconnect materials to permit the use of lower-cost base materials while improving performance, and development of new thermochemically-stable sealing systems that are compatible with other SOFC components. http://www.fossil.energy.gov/news/techlines/04/tl_seca_awards.html

12. NY State Awards \$15 Million for Clean Energy Projects

New York Governor George Pataki announced more than \$15 million in grants for 52 distributed generation and CHP projects throughout the state. The projects, which will support the development and demonstration of combined heat and power (CHP) technology, received funding through the New York State Energy Research and Development Agency, which selected five fuel cell projects among the grant winners.

http://www.state.ny.us/governor/press/year04/june24_4_04.htm

13. Fuel Cell, Hydrogen Projects Among Recipients of Biomass R&D Funding

One fuel cell project and one hydrogen project are recipients of more than \$2.4 million in funding through a joint DOE and USDA Biomass Research and Development Initiative. Technology Management received nearly \$1 million for its "Fuel Cell Systems Operating on 100% Bio-Liquid Fuels" project and New Energy Solutions received about \$1.4 million for its project, "Design and Demonstration of a Commercial Prototype for Onsite Production of High Purity Hydrogen from Farm Animal Wastes."

http://www.energy.gov/engine/content.do?PUBLIC_ID=16189&BT_CODE=PR_PRESSRELEASES&TT_CODE=PRESSRELEASE

14. DOD C2P2 Program Awards \$1.8 Million Contract to Plug Power

The Department of Defense awarded a \$1.8 million contract to Plug Power for the Common Core Power Production (C2P2) Program. Under the program, 15 GenCore® systems will be placed in both fielded demonstration programs and laboratory test programs to develop and validate application requirements for integration into infrastructure support systems.

<http://www.plugpower.com/news/details.cfm?prid=228>

15. Army Research Office Awards Portable Fuel Cell Development Contract to Protonex

The Army Research Office awarded approximately \$1 million to accelerate the development of Protonex's NGen™ hydrogen-air and direct methanol fuel cell stacks for soldier portable military applications. <http://www.emediawire.com/releases/2004/7/emw142825.php>

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**State Activities**  
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16. Western Governors Adopt Resolution to Spur Clean Energy

At their annual meeting, Western Governors adopted a resolution that will launch an initiative to develop clean, diversified energy systems for the West, with a goal of 30,000 megawatts of clean energy by 2015. The initiative was spearheaded by Govs. Bill Richardson of New Mexico and Arnold Schwarzenegger of California.

<http://www.westgov.org/wga/press/energy.htm>

17. New Mexico Seeks to Attract Hydrogen and Fuel Cell Companies to its State

New Mexico's Economic Development Department issued a request for proposals from nonprofits that can attract hydrogen and fuel cell related companies to the state. The \$200,000 contract funding comes from the Advanced Technologies Economic Development Act.

<http://kobtv.com/index.cfm?viewer=storyviewer&id=11923&cat=HOME>

18. Hawaii Expands Net Metering to 50 kW

Hawaii has increased the eligible capacity limit of net-metered systems from 10 kW to 50 kW. Under the law, all utilities must offer net metering to residential and commercial customers with solar, wind, biomass or hydroelectric systems. The State also instituted a renewable portfolio standard, which mandates that 20% of the Hawaii utilities' electricity sales come from renewable energy sources by December 31, 2020.

http://irecusa.org/articles/static/1/1086717339_987096476.html

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**University Activities**  
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19. Scholarships Awarded to Ohio State University Students for Fuel Cell Essays

Three students from Ohio State University received scholarships funded by NexTech Materials, based on the students' essays on the topic of the emerging fuel cell industry and the global competitive position of Ohio.

<http://www.nextechmaterials.com/Scholarship2004PR.pdf>

20. Rensselaer to Create Future Energy Systems Center for Advanced Technology

Rensselaer Polytechnic Institute has been awarded up to \$10 million in state funds to create the Future Energy Systems Center for Advanced Technology (CAT), in partnership with Cornell University and the Brookhaven National Laboratory. The Center will have an initial emphasis on fuel cells and the hydrogen economy, as well as smart lighting, smart displays, and solar cells.

http://www.rpi.edu/web/News/press_releases/2004/energy.htm

21. Virginia Tech, Battelle Receive Innovation Award for Membrane Research

Virginia Tech University and Battelle won one of R&D Magazine's annual R&D 100 Awards, for their efforts on novel low-cost, high-temperature polymer membranes for use in PEM fuel cells.

<http://www.battelle.org/news/04/7-16-04R&D100.stm>

22. Universities Develop California Hydrogen Policy White Paper

Academic researchers at University of California-Berkeley, University of California-Davis, Humboldt State University and California Environmental Associates collaborated to develop a California hydrogen policy white paper titled "An Integrated Hydrogen Vision for California." The effort was primarily funded by a grant from the Steven and Michele Kirsch Foundation.

http://socrates.berkeley.edu/~rael/Kirsch_H2_Final.pdf

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**Industry Headlines**  
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23. Fuel Cell Provides Power to Democratic National Convention

A 250-kW Direct FuelCell® power plant, manufactured by FuelCell Energy, was installed to provide power at part of a temporary distributed generation micro-grid power supply at the Democratic National Convention at the Fleet Center in Boston, Massachusetts.

http://www.corporate-ir.net/ireye/ir_site.zhtml?ticker=FCEL&script=412&layout=-6&item_id=595672

24. MTI Micro Introduces Mobion Brand Fuel Cells for PDA/Smartphone

MTI MicroFuel Cells introduced the Mobion™ brand for its direct methanol fuel cells, as well as concept models of a PDA/Smartphone and a hand-held entertainment system featuring integrated fuel cells.

<http://www.mechtech.com/newsandevents/article.asp?id=163>

25. Toshiba Unveils 100 Milliwatt DMFC

Toshiba Corporation announced the prototype of a highly compact direct methanol fuel cell that can be integrated into devices as small as digital audio players and wireless headsets for mobile phones. The fuel cell prototype weighs 8.5 grams, and can power an MP3 music player for as long as 20 hours on a single 2cc charge of highly concentrated methanol.

http://www.toshiba.co.jp/about/press/2004_06/pr2401.htm

26. 2005 Honda FCX Earns EPA and CARB Certification

The 2005 Honda FCX fuel cell vehicle has been certified by both the U.S. Environmental Protection Agency and the California Air Resources Board for commercial use. The 2005 model FCX achieves a nearly 20 percent improvement in its EPA fuel economy rating and a 33 percent gain in peak power compared to the 2004 model.

<http://www.hondanews.com/CatID1000?mid=2004072847987&mime=asc>

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**Administration**  
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Press releases and story ideas may be forwarded to Bernadette Geyer, editor, for consideration at bernie@usfcc.com.

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**About Fuel Cell Connection**  
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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>