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FUEL CELL CONNECTION – July 2003 Issue

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News on U.S. Government Fuel Cell Programs

1. DOE Issues Prospectus for FutureGen Participation by Foreign Governments

The U.S. Department of Energy has issued "A Prospectus for Participation by Foreign Governments in FutureGen," the government's program to develop a coal-fueled power plant to produce electricity and hydrogen with zero emissions. DOE is seeking international involvement in this project.

<http://www.fe.doe.gov/programs/powersystems/futuregen/internationalprospectus6-17-03.pdf>

2. New Catalyst Could Provide Cheaper Hydrogen Production

Scientists at the University of Wisconsin at Madison have developed a hydrogen-making catalyst from nickel, tin and aluminum, which is used in a process called aqueous-phase reforming, to convert plant byproducts to hydrogen. The team is now collaborating with scientists at Virent Energy Systems in Wisconsin as part of a National Science Foundation Small Business Technology Transfer grant to develop catalysts for generating fuels from biomass.

<http://www.nsf.gov/od/lpa/news/03/pr0369.htm>

3. RSPA to Review Applications of Hydrogen Fuelers for HazMat Exemptions

The Office of Hazardous Materials Safety of the U.S. Department of Transportation's Research and Special Programs Administration is reviewing applications for hazardous materials exemptions for novel designs in the transport of hydrogen by highway for vehicle refueling. Exemptions under consideration would allow the transport of compressed hydrogen in non-DOT specification plastic-lined, carbon fiber-wrapped cylinders with a service pressure from 7,000 to 13,000 psig.

http://www.rspa.dot.gov/results_summer03.pdf

4. NASA Investigation Into Crash of Helios Continues

An interim status report by NASA's Mishap Investigation Board (MIB) indicates the Helios Prototype appeared to have experienced "undamped pitch oscillations" which led to a partial breakup of the aircraft at 3,000 feet. The fuel cell system had not yet been turned on when the mishap occurred. The MIB's final report is due by September 30, 2003.

<http://www.dfrc.nasa.gov/Newsroom/NewsReleases/2003/03-40.html>

5. PNNL Highlights SOFC Research

Pacific Northwest National Laboratory's work on solid oxide fuel cell bipolar plate materials is highlighted in the June 2003 issue of *Advanced Materials and Processes*.

http://www.pnl.gov/main/press/fuel_cell.html

6. Article Highlights Fuel Cell Potential for Army Battery-Replacement

An article in *National Defense Magazine* says fuel cells could reduce the load soldiers have to bear in the field by reducing the number of batteries a battalion would have to carry. The article notes "A battalion preparing for war literally must bring tens of thousands of batteries to the battlefield" and that a fuel cell system "can produce an equivalent power to batteries at about one-third the weight."

<http://www.nationaldefensemagazine.org/article.cfm?id=1153>

7. Climate Change Strategic Plan to Include Technology Scenario Case Studies

President Bush recently announced a 10-Year Strategic Plan for the Administration's Climate Change Science Program. The Plan includes evaluation of two categories of Technology Scenarios as "Illustrative Case Studies" that will examine the combinations of technologies expected to provide energy between now and 2050.

<http://www.climatescience.gov/>

8. Presentations from Hydrogen Production and Northwest Transportation Conference

Presentations are now available online from the Hydrogen Production and Northwest Transportation Conference sponsored by Pacific Northwest National Laboratory and the Northwest Energy Technology Collaborative. Presentation topics include "Northwest Hydrogen Initiative" and "Military Fuel Cells & Infrastructure for Energy and Environmental Security."

<http://www.pnl.gov/energy/hydrogen/>

9. Technical Forum Slated for Yellowstone Fuel Cell Demonstration

A Technical Forum will be held on August 13, 2003, in Bozeman, Montana, regarding a DOD-funded demonstration of a stationary fuel cell at Yellowstone National Park. The Forum will provide input to the project management team on the requirements, specifications, issues and opportunities related to the project. Contact Jack Adams, Leonardo Technologies Inc., jackadams@adelphia.net, Ph. 724-327-4789, for more information.

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**RFP/Solicitation News**  
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10. CECOM Seeks Environmental Chamber for Testing Small Fuel Cells

The U.S. Army Communications-Electronics Command intends to purchase a small environmental chamber for the purpose of testing small fuel cells. The chamber must be ready for delivery in 6 weeks or less from the receipt of the contract. Deadline for applications is August 1, 2003. <http://www.eps.gov/spg/USA/USAMC/DAAB15/DAAB1503Q0005/listing.html>

11. TACOM Issues Solicitation for Fuel Cell Sources

The U.S. Tank-Automotive and Armaments Command is seeking a self-contained fuel cell system to power the Omni-Directional Inspection System robot for a 10 to 12-hour run on a single refueling. Up to \$300,000 funding is available under this solicitation. Deadline for proposals is August 15, 2003.

<http://www.eps.gov/spg/USA/USAMC/DAAE07/DAAE07-03-Q-LSS1/listing.html>

12. Power and Thermal Technologies for Air and Space

The Air Force Research Laboratory has issued a Broad Agency Announcement for development, demonstration and improvement of key power and thermal technologies in the areas of Power Generation, Power Management & Distribution, Energy Storage, and Subsystem Integration. Anticipated funding for this solicitation is \$49 million. Responses to the BAA are due by September 2, 2003.

<http://www.eps.gov/spg/USAF/AFMC/AFRLWRS/BAA-03-05-PRK/SynopsisP.html>

13. DOE Issues Solicitation for Hydrogen Production and Delivery Research

The Department of Energy has issued its solicitation for research in several specific hydrogen production and delivery technologies. Key topics include: Hydrogen from Biomass, Advanced Electrolysis Systems, and Hydrogen Production Infrastructure Analysis. Total cumulative DOE funding available under this solicitation for all projects is anticipated to be up to \$80 million over the four-year period. Proposals are due September 4, 2003. <http://e-center.doe.gov/iips/busopor.nsf/8373d2fc6d83b66685256452007963f5/c688ad56a47ae7db85256cd3006ffa27?OpenDocument>

14. NASA STTR Seeks Power Sources, Including Fuel Cells

NASA's Small Business Technology Transfer (STTR) program solicitation features research TPOIC T3 Glenn Research Center, which includes fuel cells as one of the desired power technologies. Phase I awards have a maximum contract value of \$100,000. Deadline for responses is September 9, 2003.

<http://sbir.gsfc.nasa.gov/SBIR/sbirsttr2003/solicitation/index.html>

15. NASEO Funding Available for Hydrogen Technology Learning Centers

The National Association of State Energy Officials announced the State Technologies Advancement Collaborative Solicitation, which features a program area providing \$900,000 in funding for Hydrogen Technology Learning Centers. Proposals are due September 10, 2003.

<http://www.naseo.org/stac/default.htm>

16. Solicitation to Fund Hydrogen ICE Vehicle, Fueling Stations in California

South Coast Air Quality Management District issued an RFP soliciting bids for hydrogen infrastructure and also for hydrogen ICE demonstrations. The RFP would support conversion of vehicles from natural gas, gasoline or diesel, and seeks proposals for hydrogen fueling stations in Burbank, Ontario, Riverside, Santa Ana, and Santa Monica. Proposals are due September 16, 2003. <http://www.aqmd.gov/hb/attachments/03077b.doc>

17. Energy Innovations Small Grant Program Issues RFP

California's Public Interest Energy Research Program has issued an RFP for its Energy Innovations Small Grant (EISG) Program, which provides a maximum \$75,000 per grant project for advanced energy technologies, including fuel cells. Approximately \$2.4 million is available per year for EISG grants. Deadline for proposals is September 19, 2003.

<http://www.energy.ca.gov/contracts/smallgrant/index.html>

18. PA DEP, Agriculture Launch \$5 Million Initiative to Fund Clean Energy Technologies

Pennsylvania's Departments of Environmental Protection and Agriculture announced a \$5 million initiative to finance the implementation of clean and renewable energy technologies. Projects that could qualify for funding include proposals to use biomass as fuel, and taking advantage of

existing waste coal to produce energy using non-combustion methods. Deadline for proposals is September 19, 2003. <http://www.dep.state.pa.us/newsletter/default.asp?ID=423>

19. DOE Issues Hydrogen Storage "Grand Challenge"

DOE has issued its "Grand Challenge" for Basic and Applied Research in Hydrogen Storage Solicitation. The total cumulative DOE funding available under this solicitation for all projects is anticipated to be between \$95 million and \$125 million over a five-year period. Applications are due September 30, 2003.

http://www.eere.energy.gov/hydrogenandfuelcells/2003_storage_solicitation.html

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**Contract / Funding Awards**  
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20. DOE Awards \$96 Million for Hydrogen, Fuel Cell R&D

The Department of Energy has announced the selection of 13 firms and educational institutions to receive \$75 million in cost-shared awards to fund new research in fuel cells for vehicles, buildings and other applications. Eleven firms and universities received an additional \$21 million in awards for hydrogen storage, production, and sensor technologies.

http://www.energy.gov/engine/content.do?PUBLIC_ID=13801&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE

21. ATP Funding Awarded to Fuel Cell Projects

Fuel cell projects received \$6.3 million in funding through the Department of Commerce National Institute of Standards and Technology Advanced Technology Program (ATP) Awards. Topics included solid oxide fuel cells, renewable hydrogen production, and development of a miniature fuel processor for portable power applications.

http://www.nist.gov/public_affairs/releases/atpaward0703.htm

22. DOE SBIR Awards Fund Several Fuel Cell, Hydrogen Projects

DOE's Office of Science granted SBIR/STTR awards to 17 fuel cell and hydrogen projects through its 2003 solicitation. Projects include development of SOFC insulation materials, a new membrane technology for the separation of hydrogen from coal syngas, and a technology to accelerate the screening of new families of potential fuel cell catalysts.

http://www.energy.gov/engine/content.do?PUBLIC_ID=13880&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE

23. Minority Universities Receive Fuel Cell, Hydrogen Project Funding

Two of the seven awardees for the Historically Black Colleges and Universities (HBCU) grant research program solicitation proposed projects for hydrogen and fuel cell research. Clark Atlanta University received \$200,000 for a project to determine the feasibility of producing hydrogen from coal and/or biomass, while also sequestering carbon. Southern University and A&M College received \$200,000 for a project to improve the materials used in SOFCs to increase their efficiency and lower production costs.

http://www.energy.gov/engine/content.do?PUBLIC_ID=13823&BT_CODE=PR_PRESSRELEASE_S&TT_CODE=PRESSRELEASE

24. California PIER Program Awards Funding to UC-Berkeley Hydrogen Project

University of California, Berkeley, received \$74,898 for a 12-month project titled "The Environmental Impacts & Economic Potential of Novel Hydrogen-Renewable Infrastructure" under the California PIER Environmental Area Exploratory Grant Program.
http://www.energy.ca.gov/contracts/2003-07-24_notice_award.html

25. Eight Fuel Cell Projects Receive NYSERDA Funding

Eight projects for fuel cell demonstrations – including installation of a fuel cell CHP system at the Bronx Zoo – were selected for funding through the New York State Energy Research and Development Authority's Distributed Generation and Combined Heat and Power Solicitation.
http://www.state.ny.us/governor/press/year03/july18_3_03.htm

26. MTI Micro Fuel Cells Receives Award from BUSINYS Program

MTI Micro Fuel Cells received an award of \$41,000 from New York State's "Building Skills in New York State" (BUSINYS) Program. The grant will fund advanced education courses for the company's technicians, engineers and scientists.
http://www.mtimicrofuelcells.com/article.cfm?a_id=13927

27. NASA Awards Contract for Aircraft Fuel Cell

NASA/Glenn Research Center has awarded a \$524,999 contract to Advanced Technology Products of Worcester, Massachusetts, for design and fabrication of a fuel cell power system for a high-performance composite electric propelled aircraft.
<http://prod.nais.nasa.gov/cgi-bin/eps/synopsis.cgi?acqid=106759&type=award>

28. Hydrogenics and Enova to Work on Fuel Cell Bus for Air Force

Hydrogenics and Enova Systems received funding from the State of Hawaii's High Technology Development Corporation to develop and integrate a fuel cell bus to be stationed at the Hickam Air Force Base in Hawaii.
<http://www.hydrogenics.com/ir/NewsReleaseDetail-1.asp?RELEASEID=114613>

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**State Activities**  
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29. Public-Private Hydrogen & Fuel Cell Partnership Launched in Illinois

The Illinois Coalition and Illinois' Department of Commerce & Economic Opportunity have launched Illinois 2H2 to create an industry cluster centered on the development of hydrogen as an energy carrier. The new organization expects to create a strategic action plan by the end of November 2003.

<http://www.ilcoalition.org/FUSION/FTF/DocNRel?STYLE=wimgbg&TIMESTAMP=1059421325203&Appl=144&Lang=0&SID=49&UID=0&ROW=2&COL=1&DEPTH=4>

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**Industry Headlines**  
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30. Boeing Announces Plans to Test Fuel Cell-Powered Aircraft

Boeing announced that it plans to test a fuel cell-powered airplane in late-2004 or early-2005. The project will be led by Boeing's Research and Technology Center in Madrid, Spain, with partners including Advanced Technology Products, Diamond Aircraft, Sener, and Aerlyper.
http://seattlepi.nwsource.com/business/130398_electplane11.html

31. SOFC System to Demonstrate Fumes-to-Fuel

Fuel Cell Technologies has installed a pilot VOC reformer and SOFC system at the Ford Motor Company's Dearborn Assembly Plant, to transform waste gases into energy.
http://www.fct.ca/17_07_03.html

32. NEC Unveils Fuel Cell-Powered Laptop Computer

Japanese computer company NEC Corp., unveiled a prototype of a laptop computer that runs on a direct methanol fuel cell, and announced that it will start selling the product in 2004. The fuel cell system should initially be able to run for five hours on a single cartridge of methanol fuel, but NEC says within two years it should increase the run-time to 40 continuous hours.
<http://www.nec.co.jp/press/en/0306/3002.html>

33. Eighth Grove Fuel Cell Symposium

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

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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/)

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<http://www.netl.doe.gov>