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FUEL CELL CONNECTION -- October 2002 Issue

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News on U.S. Government Fuel Cell Programs

1. DOE Vision 21 Agreement with FuelCell Energy Expanded

A DOE Vision 21 project agreement with FuelCell Energy has been modified and expanded to include the demonstration of two additional sub-megawatt power plants based on the company's Direct FuelCell/Turbine® technology. The modification provides an additional \$16 million to the project's budget that will be shared by the DOE and FuelCell Energy.

http://www.corporate-ir.net/ireye/ir_site.zhtml?ticker=fcel&script=410&layout=-6&item_id=340285

2. Hydrogen Trap Developed by Researchers

Scientists at Los Alamos National Laboratory, University of Chicago, and Carnegie Institution of Washington's Geophysical Laboratory have shown they can trap hydrogen gas inside water-ice structures forming hydrogen hydrate. The researchers subjected a mixture of hydrogen and water to a pressure equivalent to about 2,000 times the atmospheric pressure at sea level at room temperature. When the mixture was cooled to -11 degrees Fahrenheit, the two regions reacted and formed one solid compound.

<http://www.gnet.org/news/newsdetail.cfm?NewsID=22625>

3. FreedomCAR Partnership Plan Posted Online

A new "FreedomCAR Partnership Plan" is available for viewing online. The plan provides goals, objectives, and milestones for the program, including specific technical goals for fuel cell performance, electricity storage, vehicle weight reduction and hydrogen storage.

<http://www.cartech.doe.gov/pdfs/FreedomCar-partnership-plan.pdf>

4. Railroad and Locomotive R&D Multi-Year Program Plan Includes Fuel Cell Interests

The Department of Energy's Office of the FreedomCAR and Vehicle Technologies Program has published a "Railroad and Locomotive R&D Multi-Year Program Plan" for increasing the fuel efficiency of the U.S. freight railroad fleet by 50 percent in the next 18 years. Fuel cells are seen as one of the technologies that can provide an additional 1-8 percent improvement in efficiency with a recommended \$22 million of DOE funding. The Plan lists technical barriers and suggested R&D activities that would be necessary to develop fuel cell technology to a point where it would be suitable for locomotives.

<http://www.trucks.doe.gov/pdfs/P/127.pdf>

5. DOT R&D Plan Updated, Details Fuel Cell Research

The Department of Transportation has made available online the 4th Edition of its Research, Development, and Technology Plan. The plan includes information on current DOT fuel cell projects such as the Fuel Cell Bus program and fuel cells for marine applications.

http://www.rsps.dot.gov/research_plan.html

6. Distributed Power Program Publishes Interconnection Trends Review

DOE's Distributed Power Program has published "Distributed Energy Resources Interconnection Systems: Technology Review and Research Needs." The publication is an outgrowth of the DOE/NREL Distributed Energy Resources Systems Interconnection Technologies Workshop.
<http://www.eren.doe.gov/distributedpower/news/122.html>

7. FTA Funds Course Manual on Hydrogen Fuel Cell Engines

The Federal Transit Administration funded the development of a course manual with technical information on the use of hydrogen as a transportation fuel. The 10-part manual – produced by College of the Desert and SunLine Transit Agency – is available for free, online.
http://www.ott.doe.gov/otu/field_ops/hydrogen_class.html

8. Article Details PNNL SECA Work

An article in Pacific Northwest National Laboratory's *Breakthroughs Magazine* details recent work and achievements by the Lab through its participation in the Solid-State Energy Conversion Alliance (SECA). SECA has a goal of creating an SOFC technology by 2010 that will cost less than \$400 per kilowatt for a variety of applications. PNNL researchers are working with a cathode material composition that performs well at 700 to 800 degrees Celsius.
<http://www.pnl.gov/breakthroughs/fall02/special3.stm>

9. Global Forum on Personal Transportation Set for Mid-November

DOE Secretary Spencer Abraham will host the "Global Forum on Personal Transportation", which is scheduled for November 12-13, 2002, at the Ritz Carlton Hotel in Dearborn, Michigan. Approximately 75-100 senior government, industry and academic officials have been invited, including representatives of the automotive, hydrogen, energy and fuel cell industries.
http://www.energy.gov/HQPress/releases02/octpr/pr02225_v.htm

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**RFP/Solicitation News**  
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10. NASA/Glenn Soliciting Potential Sources for Fuel Cell Propulsion Program

NASA/Glenn Research Center seeks information for potential sources for an R&D program associated with fuel cell systems that would be used as a primary source of power for aircraft propulsion. No solicitation exists. The FedBizOpps posting is for information and planning purposes. Responses are due by November 4, 2002.
<http://prod.nais.nasa.gov/cgi-bin/eps/sol.cgi?acqid=103487>

11. SCAQMD Issues Natural Gas Fuel Cell Demo RFP

South Coast Air Quality Management District issued an RFP for Demonstration of Natural Gas, Stationary Fuel Cells in the South Coast Air Basin. Total AQMD funding for this RFP is \$1,000,000. Deadline for proposals is November 22, 2002.
<http://www.aqmd.gov/hb/02107a.html>

12. DOE SBIR/STTR Annual Solicitation Features Fuel Cell Topics

DOE has published its annual SBIR/STTR Solicitation, which contains fuel cell and related topics. Approximately 230 Phase I awards are expected for the SBIR and 15 for the STTR, with awardees receiving up to \$100,000 for a nine month period. Phase I awardees will be able to apply for Phase II funding up to \$750,000 for ideas with the highest potential to meet program objectives. The closing date for the solicitation is January 14, 2003.

<http://www.eps.gov/spg/DOE/PAM/HQ/Reference-Number-DOE-SC0059/SynopsisP.html>

13. Fuel Cell Topics Abound in DOD SBIR/STTR

A variety of fuel cell topics are included in the Department of Defense SBIR/STTR that was issued October 1. DOD will begin accepting proposals on December 2, 2002. Until then, interested companies may talk directly with the Topic Authors to ask technical questions about the topics, which include "Methanol Fuel Cell/Battery Hybrid for the Individual Soldier," "Safe Packaging of Ammonia for Compact Hydrogen Sources," "High Efficiency Fuel Cell Reformer for Logistics Fuels," and "Small Scale Fuel Cells for Ground Personnel." Proposals are due on January 15, 2003. <http://www.acq.osd.mil/sadbu/sbir/solicitations/sbir031/index.htm>

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**Contract / Funding Awards**  
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14. Army CECOM Awards Fuel Cell Contract to IdaTech

The U.S. Army Communications – Electronics Command (CECOM) has contracted with IdaTech to develop two 2-kW fuel cell systems to power an array of communications and other electronic equipment on a High Mobility Multipurpose Wheeled Vehicle (HMMWV). One of the mobile APUs will be integrated with the HMMWV-based Command, Control & Communications On-The-Move Combat Vehicle for field-testing.

<http://www.idatech.com/media/news.html?article=42>

15. Fuel Cell Projects Receive ATP Funding

The Department of Commerce National Institute of Standards and Technology (NIST) Advanced Technology Program (ATP) announced 40 awards for FY2002, including two fuel cell projects. Lilliputian Systems, Inc. received \$2,000 in ATP funds for its "Micro Solid Oxide Fuel Cell Based Power Supplies for Handheld Electronics" project. NexTech Materials, Ltd. received \$2,000 in ATP funds for its "Direct Fuel Power Module" project.

http://www.nist.gov/public_affairs/update/upd20021021.htm

16. University Fuel Cell, Hydrogen Projects Receive Coal Research Funding

Twenty-five projects will split more than \$3 million in grants from DOE's 23rd annual University Coal Research Competition. Included are five fuel cell and/or hydrogen-related projects.

http://www.fe.doe.gov/techline/tl_ucr_2002sel_print.html

17. Nuclear Energy Projects Receive Grants for Hydrogen Generation

DOE awarded \$10 million in funding to 24 new multi-year research projects under the Office of Nuclear Energy, Science and Technology's Nuclear Energy Research Initiative (NERI). Three of the projects will focus on using nuclear power for hydrogen production.

http://www.energy.gov/HQPress/releases02/octpr/pr02222_v.htm

18. Pennsylvania Grant to Fund PEM Fuel Cell Demonstration

Pennsylvania's Environmental and Energy Challenge Grant Program has awarded \$93,400 to Plug Power for a PEM fuel cell demonstration in Pennsylvania facilities.

<http://www.dep.state.pa.us/dep/deputate/pollprev/PEEC/default.htm>

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## State Initiative

### 19. LIPA Draft Energy Plan Highlights Fuel Cell Interests

Long Island Power Authority released its first comprehensive Draft Long Island Energy Plan for public review and comment. The draft covers the years 2002-2011, detailing LIPA's ideas for meeting its energy needs, including plans for an additional fuel cell installations.

<http://www.lipower.org/newscenter/pr/2002/oct17.html>

## Legislation / Regulations

### 20. IEEE P1547 Standard Ballot Attains 90% Affirmatives

The Institute of Electrical and Electronics Engineers P1547/D10 Draft Standard for Interconnecting Distributed Resources with Electric Power Systems received 90% affirmatives in the ballot that closed Sept. 26, 2002. The next step in the IEEE ballot process was a meeting of the P1547 writing group to address the ballot comments received, which was held Oct. 8-11. After subsequent resolution, the final draft P1547 standard will be sent to the IEEE Standards Board for its approval and publication as an American National Standards Institute/IEEE consensus standard. <http://www.eren.doe.gov/distributedpower/news/123.html>

## Industry Headlines

### 21. German Hydrogen Association Presents Infrastructure Roadmap

The German Hydrogen Association has published a basis paper for a "Roadmap for the implementation of a hydrogen infrastructure in Germany." The roadmap focuses on the application of hydrogen for transport purposes.

<http://www.dwv-info.de/roadmapz.htm>

### 22. Honda Fuel Cell Car to Hit Roads by End of 2002

Honda announced it will begin leasing its FCX fuel cell vehicle to government agencies and other interested parties by the end of 2002. The FCX will have a range of approximately 220 miles on one "fill" of compressed hydrogen. The City of Los Angeles has agreed to lease five of the vehicles. <http://www.jama.org/pressReleases/detail.cfm?id=53>

[http://biz.yahoo.com/prnews/021007/lam066\\_1.html](http://biz.yahoo.com/prnews/021007/lam066_1.html)

### 23. DaimlerChrysler to Deploy Fleets of Cars and Buses in 2003

In 2003 DaimlerChrysler will deploy 30 fuel cell Citaro city buses for testing by customers in Europe. Sixty Mercedes-Benz A-Class "F-Cell" model fuel cell cars will also be deployed in 2003, for operation and testing in Europe, Japan, Singapore and the USA.

<http://europe.cnn.com/2002/TECH/ptech/10/09/fuelcell/index.html>

### 24. Intel Forms Group to Work on Fuel Cells

Intel has formed the Mobile PC Extended Battery Life Working Group with executives from Dell, Fujitsu, Matsushita, NEC and Toshiba, among others, to work on developing batteries, fuel cells and related technologies to extend the life of batteries for mobile computers.

[http://story.news.yahoo.com/news?tmpl=story&u=pcworld/20021016/tc\\_pcworld/105980](http://story.news.yahoo.com/news?tmpl=story&u=pcworld/20021016/tc_pcworld/105980)

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**25. Toshiba to Introduce Fuel Cell/Battery Notebook PC**

Toshiba announced it plans to market a fuel cell battery-operated notebook computer by 2004. The company expects the computer to have an operation time of about 10 hours.

<http://www.japantoday.com/e/?content=news&cat=4&id=234604>

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

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[\(http://www.usfcc.com/\)](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

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