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FUEL CELL CONNECTION – March 2004 Issue

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Administration

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News on U.S. Government Fuel Cell Programs

1. Navy Sees Fuel Cells for Future Ships

The Office of Naval Research (ONR) is developing new propulsion systems based on fuel cell technology for future ships, and is currently funding development of a method to extract hydrogen from diesel fuel. ONR is testing a 500-kW diesel fuel reformer that is compatible with a PEM fuel cell. Testing will continue through June 2004.

http://www.news.navy.mil/search/display.asp?story_id=12221

2. DOE Launches Hydrogen Education Workshop Series

The Department of Energy is holding six hydrogen education workshops for state and local government officials. The first workshop was held in Lansing, Michigan, and the next will be held April 16, 2004, in Austin, Texas. The workshop series is intended to provide "Hydrogen 101" to state and local officials who may not have a technical background but are interested in hydrogen and fuel cell technologies.

http://www.energy.gov/engine/content.do?PUBLIC_ID=15322&BT_CODE=PR_PRESSRELEASES&TT_CODE=PRESSRELEASE

3. ANL Collaboration Determines FCV Energy Storage Requirements

Argonne National Laboratory's Center for Transportation Research is working with colleagues in the Lab's Chemical Engineering and Nuclear Engineering divisions to establish energy storage requirements for three fuel cell vehicle platforms based on "projected midterm" technologies (2005-2007). Using a software called GCtool-Eng, the researchers projected that the fuel economy of mid-term hydrogen fuel cell vehicles can be 2.5-2.7 times the fuel economy of the current conventional gasoline ICE vehicle. The study showed that the vehicles need 4.3-6.6 kg of onboard recoverable hydrogen to achieve a 320-mile driving range between fuelings.

<http://www.transportation.anl.gov/publications/transforum/v4n3/collaboration.html>

4. DOE Forms Hydrogen Safety Review Panel

The "Fuel Cell Summit" newsletter of Pacific Northwest National Laboratory (PNL) reports that DOE has formed a Hydrogen Safety Review Panel to bring together a variety of experience to review supported projects and assess the needs for further analysis. The Panel held an introductory meeting in December 2003, and is currently reviewing DOE's document "Guidance for Safety Aspects of Proposed Hydrogen Projects."

http://www.pnl.gov/fuelcells/docs/newsletter/volume5/vol5_issue1.pdf

5. DOE to Establish National Training Facility for Hydrogen Safety

PNL's "Fuel Cell Summit" newsletter also reports that DOE plans to establish a National Training Facility for Hydrogen Safety at the Volpentest Hazardous Materials Management and Emergency Response Training Center on the DOE Hanford Site in Washington State. DOE intends the facility to become a "forum in which manufacturers and safety personnel gather to have one-on-one communication regarding hydrogen and hydrogen-using technologies."

http://www.pnl.gov/fuelcells/docs/newsletter/volume5/vol5_issue1.pdf

6. Argonne's Podolski Honored for Fuel Cell Efforts

The United States Council for Automotive Research (USCAR) honored Argonne National Laboratory's Walt Podolski for his efforts in support of USCAR and the FreedomCAR Partnership. Podolski's contributions to the FreedomCAR Fuel Cell Technical Team include his contributions to the Fuel Cell Power Systems Roadmap update, and his work to establish hydrogen storage targets with the Hydrogen Storage Technical Team.

http://www.transportation.anl.gov/tech-briefs/podolski_award.html

7. New Web Site for DOE's Distributed Energy Program

DOE's Distributed Energy Program unveiled its new web site with an updated look and the latest news from the program. <http://www.eere.energy.gov/de/>

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**New Government Publications Posted**  
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8. ANL Posts Fact Sheets on Modeling Toolkit, Alternative Fuel Evaluations

Argonne National Laboratory has posted a fact sheet on its General Computational Toolkit for optimizing fuel cells and other power systems, and has posted a separate fact sheet on its efforts to evaluate alternative fuels. The latter notes ANL's work on hydrogen fuel production and its examination of hydrogen infrastructures.

<http://www.transportation.anl.gov/pdfs/MC/304.pdf>

<http://www.transportation.anl.gov/pdfs/AF/305.pdf>

9. DOE Publishes Hydrogen Posture Plan

DOE has released its "Hydrogen Posture Plan," which outlines activities, milestones and deliverables the Department plans to pursue to support the shift to a hydrogen economy. The plan identifies milestones leading up to a commercialization decision by industry in 2015.

http://www.energy.gov/engine/content.do?PUBLIC_ID=15220&BT_CODE=PR_PRESSRELEASES&TT_CODE=PRESSRELEASE

10. Well-to-Wheel Analysis of ICE, Fuel Cell Vehicle Technologies Posted Online

Argonne National Laboratory has posted a presentation "Comparing Apples to Apples: Well-to-Wheel Analysis of Current ICE and Fuel Cell Vehicle Technologies," which was presented at the 2004 SAE World Congress in Detroit.

<http://www.transportation.anl.gov/pdfs/HV/300.pdf>

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**RFP/Solicitation News**  
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11. International Finance Corporation Seeks Feedback for Next Fuel Cell RFP

The World Bank's International Finance Corporation (IFC) has received approval from the Global Environment Facility for funding of up to US\$9 million for the first stage of the two-stage Fuel Cell Financing Initiative for Distributed Generation. IFC issued its first RFP in January 2003, and is now planning to launch a second RFP. IFC is seeking comments and feedback during its preparation process. Ideas and suggestions that might benefit the RFP process should be sent by April 9, 2004 to Sandeep Kohli, Program Manager, Environmental Finance Group, IFC, fuelcells@ifc.org. The following links provide info on the program, the process followed last year, and last year's RFP. <http://www.ifc.org/ifcext/enviro.nsf/Content/FuelCell>
<http://www.ifc.org/ifcext/enviro.nsf/Content/FuelCell-2003>
[http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/art_FuelCell_GuidanceDoc/\\$FILE/Guidance+Document.pdf](http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/art_FuelCell_GuidanceDoc/$FILE/Guidance+Document.pdf)

12. NYSERDA Solicitation Issued for DG, CHP Power Systems

The New York State Energy Research and Development Authority (NYSERDA) has issued an Invitation for Proposals on Power Systems, Distributed Generation, Combined Heat and Power, and Web-based Data Integrator. \$12 million is available under this solicitation, for demonstration projects, feasibility studies, technology transfer studies, and for technical assistance to NYSERDA as a Data Integrator. Proposals are due by April 20, 2004.
<http://www.nyserda.org/800pon.html>

13. NASA Seeks Information for Regenerative Fuel Cell Plans

NASA's Glenn Research Center has issued a solicitation for information from potential sources to help formulate a plan to develop a regenerative PEM fuel cell system for use in a future high altitude, long endurance, remotely operated solar-electric aircraft. Input from industry will be used for planning purposes only. An RFP on the topic may be released in September 2004, based on responses to this information solicitation. Deadline for responses is April 23, 2004.
<http://prod.nais.nasa.gov/cgi-bin/eps/synopsis.cgi?acqid=109357>

14. Indiana Issues Research & Technology Fund RFP

The Indiana 21st Century Research & Technology Fund has issued its Round 6 solicitation for proposals in the areas of Science and Technology Commercialization, Centers of Excellence, and Cost-Share of Federal or Other Proposals. The Fund was established in 1999 to support the expansion of the research and high tech sector of Indiana's economy. Deadline for Round 6 proposals is May 15, 2004. <http://www.21stcentury-research.org>

15. Hydrogen Safety, Codes and Standards Research Solicitation Issued

DOE is seeking financial assistance applications for three categories of research projects in support of the Hydrogen Safety, Codes and Standards Program. The categories are Hydrogen System Sensors, Pipeline Materials and Sensors, and Process Plant Sensors. Approximately \$2 million per Fiscal Year will be available in FY2005, FY2006, and FY2007. Individual awards in the

first year will not exceed \$400,000. Deadline for proposals is May 20, 2004. <https://e-center.doe.gov/iips/faopor.nsf/UNID/DB2AA42EC016800A85256E4600576D38?OpenDocument>

16. DOD Issues Climate Change Fuel Cell Grant Program Presolicitation Notice

The Department of Defense has issued a pre-solicitation notice on its Climate Change Fuel Cell Grant Program. The program provides funding of \$1000/kW of installed fuel cell capacity, or one-third of the total project costs. The solicitation release is expected to happen on April 7, 2004. Deadline for proposals will be June 1, 2004.

<http://www.eps.gov/spg/USA/COE/DACA38/52985/SynopsisP.html>

17. Clean Coal Power Initiative Round 2 Solicitation Open

DOE has release the solicitation for Round 2 of proposals under the Clean Coal Power Initiative. Approximately \$280 million is anticipated to be available for proposals under this solicitation. DOE is interested in applications for demonstrating technologies to move existing plants toward environmental performance targets, or that will help achieve goals of the Clear Skies Initiative and environmental control levels anticipated by proposed regulations and/or legislation. Deadline for proposals is June 15, 2004.

http://www.fossil.energy.gov/news/techlines/04/tl_ccpi2004sol.html

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**Contract / Funding Awards**  
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18. Fuel Cell Projects Receive California Energy Commission Awards

Two fuel cell projects will receive awards under the California Energy Commission's Energy Innovation Small Grant Program Solicitation. The two projects will receive a total of approximately \$150,000 under the Environmentally Preferred Advanced Generation topic.

http://www.energy.ca.gov/contracts/smallgrant/2004-03-25_awards_03-02.html

19. Army CERL Awards \$3.7 Million Contract for SOFC Development

The U.S. Army's Construction Engineering Research Laboratory has awarded a \$3.7 million contract for development of a 10-kW SOFC portable generator fueled by diesel or military logistics fuel.

<http://www.gastechnology.org/webroot/app/xn/xd.aspx?it=enweb&xd=6newsroom\gtiandsubcontractorsawarded3point7milliontodevelopdieseljp8.xml>

20. SCAQMD Selects Quantum to Provide Hydrogen Fuel Systems for FCV Fleet

South Coast Air Quality Management District has approved \$2.3 million for Quantum Fuel Systems Technologies to provide the engineering design and development of hydrogen fuel systems for a fleet of 30 Toyota Hybrid Electric Vehicles. The contract's value may be expanded to \$2.5 million contingent on co-funding by DOD's National Automotive Center, which would increase the total number of vehicles to 35.

http://www.qtw.com/news_events/index.shtml

21. Hydrogen Technology Learning Center Proposals Selected for Federal Funding

Three proposals have been selected for the State Technologies Advancement Collaborative Solicitation on Hydrogen Technology Learning Centers. The projects will develop interactive displays and exhibits, produce publications, conduct a national conference, establish a new

undergraduate course in hydrogen technology, develop seminars and short courses, presentations, and materials for K-12 level education.

http://www.naseo.org/stac/hydrogen_pr.pdf

22. NASA to Purchase SOFC Fuel Injection & Mixing System

NASA's Glenn Research Center issued a notice of its intent to purchase the design and build of a Fuel Injection and Mixing System for a SOFC Fuel Reformer from Delavan, Turbine Fuel Technologies.

<http://www.eps.gov/spg/NASA/GRC/OPDC20220/NNC04053858Q/SynopsisP.html>

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**State Activities**  
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23. NY PSC Blackout Report Recommends Fuel Cells for Telecoms

The New York State Public Service Commission's report on the August 2003 blackouts recommends that wireless carriers look into using fuel cells and other backup power sources for their cell sites. <http://www.dps.state.ny.us/fileroom/doc14463.pdf>

24. New Mexico Governor Signs Bill to Invest in Hydrogen, Fuel Cell Technologies

New Mexico Governor Bill Richardson signed HB251 into law, which sets up a Hydrogen and Fuel Cell Technologies Development Program to foster development of hydrogen and fuel cell-related commercialization and economic development in the state. A total of \$500,000 is appropriated from the general fund to the economic development department for expenditure on this program in FY2005 and FY2006.

<http://legis.state.nm.us/Sessions/04%20Regular/bills/house/HB0251.html>

http://www.governor.state.nm.us/2004/news/march/030404_2.pdf

25. NYC Initiative Funds Eight Fuel Cell Installations at Wastewater Treatment Plants

An \$13 million initiative announced by New York City Mayor Michael Bloomberg will install eight 200-kW fuel cells at wastewater treatment plants in the city, to convert waste gas into electricity. The fuel cells installed under this program are expected to annually eliminate about 170 tons of regulated emissions and more than 9,000 tons of carbon dioxide.

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

26. Hawaii Partners with Air Force on Fuel Cell Shuttle Bus

The State of Hawaii has partnered with the Air Force to unveil the state's first fuel cell vehicle, a 30-foot flight crew shuttle bus that will be used at Hickam Air Force Base. Following a one-year data collection and analysis effort, the bus will continue in routine service at the Base.

<http://www.hitechhawaii.com/webnews.asp?ID=698>

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**University Activities**  
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27. Penn State Demonstrates Microbial Fuel Cell

Penn State environmental engineers have shown that a microbial fuel cell can generate electricity while cleaning wastewater. Experiments have produced between 10 and 50 milliWatts of power per square meter of electrode surface so far, while removing up to 78 percent of organic matter.
<http://live.psu.edu/story/5717>

28. Case Western Reserve Univ. to Work on Power for Smart Munitions

Case Western Reserve University is teaming up with The Ashlawn Group to develop fuel cells to double the shelf life of DOD "smart" munitions. Researchers will work to develop two sizes of fuel cells, one about the size of a D-cell battery and one the size and weight of an AA battery, to fit in artillery and mortar shells. <http://www.case.edu/news/2004/3-04/ashlawn.htm>

29. Kettering to Offer Fuel Cell Degree Programs

Kettering University will offer a Mechanical Engineering Representative Degree Program with a Fuel Cell Minor and an Electrical Engineering Representative Degree Program with a Fuel Cell Minor to students in Fall 2004. The programs are designed to prepare current and future automotive manufacturing engineers for the hydrogen economy. Funding for the curriculum development was partially supported by a \$100,000 grant from NextEnergy. Three other institutions were awarded curriculum development grants: Wayne State University, Lansing Community College and Lawrence Technological University. Kettering is collaborating with the three other awardees to develop a statewide curriculum model.
<http://fuelcells.kettering.edu/pdf-newsletters/2004-02-Feb-Newsletter.pdf>

30. Rensselaer Reports on Polymer Center

Celanese Ventures USA has donated electro-chemical and fuel cell test equipment worth \$350,000 to the NYS Center for Polymer Synthesis at Rensselaer Polytechnic Institute. The new equipment will boost Rensselaer's research on high-temperature polymer membranes and increases to 11 the number of fuel cell test stations in its Fuel Cell Test Laboratory.
<http://www.rpi.edu/dept/NewsComm/Magazine/mar03/difference/difference.html>

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**Industry Headlines**  
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31. Nissan Leases X-Trail FCV to Cosmo Oil

Cosmo Oil has leased the first of Nissan's X-Trail fuel cell vehicles, which was delivered in a ceremony held at the Japan Hydrogen Fuel Cell Demonstration Program's Yokohama-Daikoku Hydrogen Station.
<http://www.nissan-global.com/EN/STORY/0,1299,SI9-CH-LO3-TI1022-CI766-IFY-MC92,00.html>

32. Plug Power and Honda Agree to Next Phase of Home Energy Station Collaboration

Plug Power announced an agreement with Honda R&D Company to continue development of the Home Energy Station, a fuel cell system that provides electricity and heat to a home or business, while also providing hydrogen fuel for a fuel cell vehicle. Work under the second phase of the project will focus on developing a next-generation prototype of the Home Energy Station.
<http://www.plugpower.com/news/press.cfm>

33. Hitachi Announces Prototype PDA Powered by a Fuel Cell

Hitachi announced it has developed a prototype personal digital assistant powered by a fuel cell that runs about five hours. The company hopes to launch sample shipments starting in 2005.

<http://www.fuelcelltoday.com/FuelCellToday/IndustryInformation/IndustryInformationExternal/NewsDisplayArticle/0,1602,4175,00.html>

34. Hyundai Unveils Tucson Hydrogen Fuel Cell EV

Hyundai has unveiled its Tucson hydrogen fuel cell powered electric vehicle. The Tucson has a driving range of 186 miles (300 km), and a top speed of 93 mph (150 km/h).

<http://worldwide.hyundai-motor.com/intro/news/index2.html>

35. Honda Proves Cold-Start Performance for Fuel Cell Stack

Honda announced successful cold-weather demonstration of its FCX fuel cell vehicle equipped with a Honda fuel cell stack. The vehicle was able to start after being parked outside overnight in temperatures as low as 12 degrees Fahrenheit.

<http://hondanews.com/CatID1002?mid=2004022728657&mime=asc&archives=t>

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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>