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## **FUEL CELL CONNECTION – January 2003 Issue**

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

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### 1. GM Unveils Truck for Military Featuring Fuel Cell APU

General Motors and the U.S. Army unveiled a diesel hybrid military pickup truck equipped with a 5-kW PEM regenerative fuel cell auxiliary power unit (APU) designed and built by Hydrogenics. When the vehicle is driven, the PEM electrolyzer uses electricity provided by the diesel engine to separate water into hydrogen and oxygen, with the hydrogen stored for future use. The water by-product of the fuel cell's use for producing electricity is stored and used to repeat the cycle.

[http://www.media.gm.com/news/releases/030109\\_mili.html](http://www.media.gm.com/news/releases/030109_mili.html)

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### 2. Plug Power Completes DOD Fuel Cell Demonstration Program

Plug Power has announced the completion of its fuel cell demonstration program at the Watervliet Arsenal (NY), which was funded by the U.S. Department of Defense. The company's ten grid-parallel 5-kW fuel cell systems operated for more than 80,000 hours and generated approximately 210,000 kWh of electricity throughout the year demonstration. The systems operated at or above 94 percent average availability during the year, exceeding the contract requirement of 90 percent.

<http://www.energyinfosource.com/dg/news.cfm?id=17849>

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### 3. FEMLAB Modeling Package Includes Fuel Cell Models

An introductory FEMLAB kit – a multiphysics modeling package used in research, product development and teaching – can now be ordered for free online. The kit includes a CD with animated tutorials, documentation in PDF format, and example models such as “Modeling of the electrolyte, solid catalyst and gas phase in a molten carbonate fuel cell” and a “Model of the solid oxide fuel cell.” [http://www.comsol.com/contact/request\\_form.php](http://www.comsol.com/contact/request_form.php)

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### 4. DG Project Screening Software Evaluates Fuel Cell Options

Science Applications International Corporation, under a grant from the U.S. Department of Energy, has developed a new project screening software tool for distributed generation (DG) applications. The software calculates life cycle cost analyses and environmental impact assessments, and includes default data on capital cost, maintenance cost and performance data for fuel cell DG technologies.

<http://www.eren.doe.gov/distributedpower/news/134.html>

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### 5. Presentations from Hydrogen Storage Workshop Now Online

Presentations are now available from the Hydrogen Storage Workshop held August 14-15, 2002, at Argonne National Laboratory. Included are presentation topics such as “Hydrogen Storage in Carbon Nanotubes” and “Hydrogen Storage Requirements for Fuel Cell Vehicles.”

<http://www.carttech.doe.gov/publications/2002hydrogen.html>

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### 6. Proceedings from Fuel Cells for Buildings Roadmap Workshop Available

Proceedings are now available online for the “Fuel Cells for Buildings And Stationary Applications Roadmap Workshop.” The workshop was sponsored by the DOE Office of Power Technologies and was held April 10-11, 2002. <http://www.carttech.doe.gov/pdfs/FC/204.pdf>

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*7. NAS Publishes Review of DOE's Vision 21 R&D Program*

The National Academy of Sciences has published "Review of DOE's Vision 21 Research and Development Program – Phase 1." The report, by the National Research Council (NRC), contains an entire section on the Fuel Cell portion of the program. NRC recommends that "other fuel cell projects be added to Vision 21's proposed program of demonstration plant design, fabrication, and operation, to address the scale-up of high-temperature fuel cell generator systems to 200-500 MW." [http://www.nap.edu/catalog/10596.html?onpi\\_listserv011703](http://www.nap.edu/catalog/10596.html?onpi_listserv011703)

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*8. MARAD 2003 Plans Include Possible Hydrogen/Fuel Cell Demo Solicitation*

The "U.S. Department of Transportation's Research, Development, and Technology Plan, 4<sup>th</sup> Edition" is now published and features information on DOT fuel cell programs at the Federal Transit Authority (FTA) and Maritime Administration (MARAD). The report notes that in FY2003, MARAD is working with the Department of Energy to develop a Maritime Hydrogen and Fuel Cell Program, "and may solicit projects from vessel owners operating in environmentally pristine waterways." [http://www.rspa.dot.gov/research\\_plan.html](http://www.rspa.dot.gov/research_plan.html)

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*9. Fuel Cells Are Promising Technology for Army Unmanned Ground Vehicles*

A new report from the National Research Council, "Technology Development for Army Unmanned Ground Vehicles," notes that in the far-term, "fuel cells offer the possibility of better fuel economy and inherently more stealthy operation." Fuel reformers, water management and safety are seen as the key issues for fuel cells as a power/energy system.  
[http://www.nap.edu/catalog/10592.html?onpi\\_listserv011003](http://www.nap.edu/catalog/10592.html?onpi_listserv011003)

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*10. EIA Releases Annual Energy Outlook*

DOE's Energy Information Administration has released its Annual Energy Outlook 2003 report. In the report, EIA projects that U.S. dependence on oil imports will grow over the next 22 years to between 65 and 70 percent. The report also sees a similar growth trend in residential energy consumption, which is expected to increase 26 percent by 2025. EIA projects that renewable energy use will grow at an average rate of 2.2 percent per year through 2025, "primarily due to state mandates for renewable electricity generation."  
[http://www.eia.doe.gov/oiaf/aeo/pdf/0383\(2003\).pdf](http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2003).pdf)

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*11. SECA Program Launches New Website*

The Solid State Energy Conversion Alliance (SECA) program has launched its new website, featuring news releases, official solicitations, workshop presentations and proceedings, as well as a listing of upcoming events. <http://www.seca.doe.gov/>

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RFP/Solicitation News
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*12. CCEF Fuel Cell RFP Announced*

The Connecticut Clean Energy Fund (CCEF) has issued the 2002 Fuel Cell RFP to promote fuel cells in Connecticut. The funding level of the RFP could reach almost \$9 million. Two categories of projects are being solicited: Commercial Operation Projects and Demonstration Projects. A pre-bid conference will be held on January 9, 2003, from 9am-noon at the Hartford Marriott/Rocky Hill, Connecticut. The deadline to submit round one proposals is 3:00 p.m. January 30, 2003.  
[http://www.ctcleanenergy.com/rfp/RFP\\_CCEF-FC-002.pdf](http://www.ctcleanenergy.com/rfp/RFP_CCEF-FC-002.pdf)

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### *13. Research on the Science of Catalysis*

The Office of Basic Energy Sciences of the DOE Office of Science invites applications for high-risk, long-term, multi-investigator, multidisciplinary research on the science of catalysis. Approximately \$4 million is expected to be available in FY2003 to fund up to six new awards. Required letters of intent are due February 5, 2003. Applications will be due March 26, 2003. <http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2002/02-31649.htm>

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### *14. NET Incubator Initiates National Business Plan Competition*

The National Environmental Technology (NET) National Business Plan Competition welcomes applications from any U.S. corporation or LLC with revenue-generating activities associated with scalable technologies and activities that contribute to increased energy and resource efficiency, higher productivity, pollution control, waste management, or the provision and delivery of water, recovered materials, and clean energy. Entrants may be a currently operating company, or be in formation, positioned for early-stage financing. A \$10,000 first prize, \$5,000 second prize and \$2,500 third prize will be awarded. A special award of two years' free rent in the NET Incubator also will be granted to the finalist with the business plan deemed most likely to succeed, yet not ready for equity funding. Entrance materials must be postmarked on or before February 7, 2003. <http://www.etc2.org/Net%20Comp%20Site/about.htm>

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### *15. Fossil Fuel Solicitation to Fund Fuel Cell Projects*

The National Energy Technologies Laboratory Master Solicitation "Development of Technologies and Capabilities for Developing Coal, Oil and Gas Energy Resources" has been issued, featuring three areas of interest that include fuel cell topics. The "Vision 21 Technologies," "Coal Fuels and Hydrogen," and "Fuel Cells" areas of interest include subtopics such as "SOFC Scale-up for Hybrid and Fuel Cell Systems – Conceptual Studies" and "Direct Utilization of Carbon in Fuel Cells." An estimated \$23.85 million will be awarded under this solicitation, subject to the availability of funds. The proposal deadline is February 27, 2003. [http://doe-iips.pr.doe.gov/iips/busopor.nsf/0ba000b968a07c9885256c3f0067b90d/4a24d2e0aefb005485256c1c00637faf?OpenDocument&Highlight=0,DE-PS26-02NT41613-00\\_MASTER\\_SOLICITATION](http://doe-iips.pr.doe.gov/iips/busopor.nsf/0ba000b968a07c9885256c3f0067b90d/4a24d2e0aefb005485256c1c00637faf?OpenDocument&Highlight=0,DE-PS26-02NT41613-00_MASTER_SOLICITATION)

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### *16. Long-Awaited Fuel Cell R&D Solicitation is Issued*

The long-awaited solicitation "Research and Development for Fuel Cells for Stationary and Automotive Applications" has been issued by DOE, which plans to allocate approximately \$7 million in FY2003 for the selected projects. It is estimated that up to 20 projects may be selected for cost-shared cooperative agreements. Subject to the availability of funds, total estimated Government funding for the solicitation is approximately \$70 million for the maximum five-year period. Topic areas include "Back-up/Peak-Shaving Fuel Cell System," "PEM Stack Durability," and "Platinum Recycling Technology Development." Deadline for proposals is March 27, 2003. <http://www.eps.gov/spg/DOE/PAM/HQ/DE-SC02-03CH11137/Attachments.html>

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### *17. CERL to Solicit Residential Fuel Cell Demonstrations*

The Construction Engineering Research Laboratory (CERL) of the Engineer Research and Development Center (ERDC) will issue a BAA on a PEM fuel cell demonstration of U.S.-produced residential PEM fuel cells in military facilities. Release is estimated by February 3, 2003. Proposals are expected to be due April 1, 2003. <http://www.eps.gov/spg/USA/COE/DACA38/CERL-BAA-FY03/listing.html>

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### *18. DOD STTR to Fund Fuel Cell Proposals*

Sub-topics for the DOD 2003 Small Business Technology Transfer solicitation include "Membraneless Microchannel Fuel Cells," "High Efficiency Fuel Cell Systems for Shipboard Applications," and "Plasma-Based Oxygen Generator for Undersea Vehicle Fuel Cells." Awards of up to \$100,000 will be made for Phase I projects under this solicitation. Subsequent Phase II awards – limited to \$500,000 – will be made to firms on the basis of results of their Phase I effort and the merit and potential of their Phase II proposal. Deadline for proposals is April 16, 2003.  
<http://www.acq.osd.mil/sadbu/sbir/solicitations/sttr03/index.htm>

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Legislation / Regulations
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*19. Senator Dorgan Proposes "Apollo-Like" Fuel Cell Effort*

U.S. Senator Byron Dorgan (D-ND) proposed a \$6.5 billion, 10-year public-private initiative – "in the spirit of the Apollo moon-landing project" – to help the nation's transportation sector move beyond its reliance on petroleum, and foreign sources of oil.

<http://dorgan.senate.gov/newsroom/record.cfm?id=189966>

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State Activities
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*20. New Jersey Natural Gas DG Pricing Plan Approved*

The New Jersey Board of Public Utilities (BPU) has approved New Jersey Natural Gas Company's special pricing plan for residential and commercial customers who use natural gas to fuel distributed generation technologies, including fuel cells.

<http://www.energyinfosource.com/dg/news.cfm?id=17742>

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Industry Headlines
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*21. Toyota Unveils FINE-S Fuel Cell Vehicle Concept*

Toyota unveiled its FINE-S fuel cell vehicle concept at the 2003 North American International Auto Show.

<http://media.prnewswire.com/en/jsp/latest.jsp?resourceid=2375431&access=EH&JServSessionIdroot=eyhdazy6a1.JS2>

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*22. Fuel Cell Generator Earns UL Listing*

The ColemanPowermate AirGen™ fuel cell generator has been determined to comply with UL 1778 "Standard for Uninterruptible Power Supply Equipment" and UL's Outline of Investigation for Portable Fuel Cell Power Plants, subject 2262.

<http://www.ul.com/media/newsrel/nr010903.html>

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*23. Eighth Grove Fuel Cell Symposium*

Eighth Grove Fuel Cell Symposium – "Building Fuel Cell Industries" – ExCeL, London, UK. 24<sup>th</sup>-26<sup>th</sup> September 2003 – [www.grovefuelcell.com](http://www.grovefuelcell.com). Conference: [sm.wilkinson@elsevier.com](mailto:sm.wilkinson@elsevier.com). Exhibition: [pamchattin@aol.com](mailto:pamchattin@aol.com).

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

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