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## **FUEL CELL CONNECTION – January 2005 Issue**

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

#### 1. Fuel Cell Power Density Milestone Met

Delphi Corporation announced it has exceeded the power density level required to meet the \$400 per kilowatt fuel cell cost goal of the Department of Energy's Solid-State Energy Conversion Alliance (SECA) program. The SECA program set the \$400 per kilowatt cost goal so that fuel cells would compete with traditional gas turbine and diesel electricity generators.

[http://www.fossil.energy.gov/news/techlines/2005/tl\\_seca\\_delphi.htm](http://www.fossil.energy.gov/news/techlines/2005/tl_seca_delphi.htm)

#### 2. Sandia National Lab Teams with General Motors on Hydrogen Storage Work

Sandia National Laboratory and General Motors have partnered to launch a 4-year, \$10 million program to develop and test tanks that store hydrogen in a sodium aluminum hydride, also known as sodium alanate.

<http://www.sandia.gov/news-center/news-releases/2005/tech-trans/gm-hydrogen-storage.html>

#### 3. Team Applications for DARPA Grand Challenge Due February 11

Teams have until February 11, 2005, to submit their applications to participate in the 2005 Grand Challenge sponsored by the Defense Advanced Research Projects Agency (DARPA). The DARPA Grand Challenge is a field test intended to accelerate research and development in autonomous ground vehicles. <http://www.darpa.mil/grandchallenge/overview.html>

#### 4. Army Testing Fuel Cell-Powered Off-Road Vehicle

The U.S. Army has worked with Quantum Technologies to develop a hydrogen fuel cell-powered off-road vehicle capable of producing power for surveillance, targeting and communications. The Aggressor Alternative Mobility Vehicle will be tested at several Army posts throughout the first half of 2005.

[http://www.nationaldefensemagazine.org/issues/2005/feb/TT-Army\\_Scrutinizing.htm](http://www.nationaldefensemagazine.org/issues/2005/feb/TT-Army_Scrutinizing.htm)

### RFP/Solicitation News

#### 5. Georgetown University Methanol-Fueled Bus Transit Program Presolicitation Issued

Georgetown University, under a grant from the Federal Transit Administration, has issued an RFP for a proposed next generation liquid methanol-fueled fuel cell transit bus program. Georgetown seeks in Phase I to design and develop two >50-kW methanol fuel cell power plants to produce at least 100 kW of power for the vehicle. Deadline for capability statements of two pages or less is January 31, 2005.

<http://www2.epa.gov/spg/DOT/FTA/FTAHQ/RX7502%2D810MEOHFuelCell/SynopsisP.html>

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*6. Krystal Energy Accepting Quote Requests for Fuel Cell Power Generators*

Krystal Energy issued a request for quotes for the production of fifty 5-kW fuel cells as a primary power source for placement in Midwestern and New England areas. The first delivery of two units is slated for April 2005. Krystal Energy is willing to provide 25% down payment, 25% upon shipment, 25% at installation, and 25% upon installation of 30 units. The deadline for quotes is February 10, 2005. Contact Troy Helming, troy@krystalenergy.com, for more information.

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*7. EPA Solicitation Issued for Diesel Emissions Reduction Technologies*

The EPA, through the Clean Air Act, is awarding grants ranging in size from \$50,000 to \$250,000 for the reduction of diesel emissions on the West Coast for an estimated 5 to 20 projects. The RFP seeks companies that provide idle reduction technologies, engine replacement, or fuel cell use. Proposals are to be postmarked no later than February 11, 2005.

<http://www.epa.gov/region09/funding/wcd-funding05.html>

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*8. Colorado Solicitation to Create State Fuel Cell Center*

The Colorado Governor's Office of Energy Management and Conservation (OEMC) announced a solicitation for the creation of the Colorado Fuel Cell Center. The OEMC will provide a single contract of a minimum of \$2,000,000 over two years from the Petroleum Violation Escrow fund. The selected proposal must provide \$1,000,000 in matching funds. The deadline for submission of Proposals is March 7, 2005.

<http://www.gssa.state.co.us/BdSols.nsf/645a7f1deaef9ffe87256928005cc641/6a0ec0d641bb466487256f88007e26d5?OpenDocument>

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*9. Grants Available for Graduate Automotive Technology Education*

The U.S. Department of Energy has issued a program solicitation through its FreedomCAR and Vehicle Technologies office, for state-sponsored institutions dedicated to research in the field of energy efficiency and renewable energy. Proposals are sought for Centers of Excellence to provide multidisciplinary engineering training for graduate students in specific areas of advanced automotive technology, including fuel cells. Applications are due March 10, 2005. <https://e-center.doe.gov/iips/faopor.nsf/3b3cff0a4a1f243485256ec100490e1a/b524b394d15c035785256f890073b93b?OpenDocument>

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*10. Connecticut Clean Energy Fund Issues RFP for "Project 100"*

The Connecticut Clean Energy Fund (CCEF) is accepting proposals from developers, manufacturers, and financiers for its "Project 100" program, which promises to produce 100 MW of clean power by July 1, 2007. The CCEF seeks proposals for long term power purchase contracts ranging from 10 to 20 years. Each company selected for recommendation will be awarded \$50,000. Proposals for purchase contracts are due March 17, 2005.

<http://www.ctcleanenergy.com/investment/Project100.html>

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*11. State Energy Program Special Projects Grants Notice*

DOE announced the availability of an estimated \$14.7 million for its State Energy Program Special Projects Opportunity during fiscal year 2005. The goals of the special projects activities are to directly involve states in activities to accelerate deployment of energy efficiency and renewable energy technologies, to facilitate commercialization of emerging and underutilized technologies, and to increase responsiveness of Federally-funded technology development efforts to the needs of the marketplace. Applications for SEP grants are due April 22, 2005.

<http://www.fedgrants.gov/Applicants/DOE/PAM/HQ/DE-PS26-04NT42068-00/Grant.html>

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12. *DOE Experimental Program to Stimulate Competitive Research Grants Available*

The DOE Office of Basic Energy Sciences (BES) and the Office of Science (SC) announced the availability of approximately three grants in support of the Experimental Program to Stimulate Competitive Research (EPSCoR), to enhance the capabilities of designated states to conduct nationally-competitive energy-related research, and to develop science and engineering human resources in energy-related areas. There is a maximum award level of \$750,000 per year for a period of three years. Deadline for receipt of formal applications is September 21, 2005.

<http://www.science.doe.gov/grants/FAPN05-03.html>

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**Contract / Funding Awards**  
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13. *DTI Awards £60 Million in Technology Funding*

The Department of Trade and Industry in the United Kingdom awarded £60 million to 56 projects in seven priority technology areas, including renewable technologies, advanced composite materials and structures, and bio processing. Four hydrogen/fuel cell related projects received a total of £3.15 million in funding through the program.

<http://www.gnn.gov.uk/environment/detail.asp?ReleaseID=141382&NewsAreaID=2&NavigatedFromDepartment=False>

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14. *Proton Energy Systems Receives Contract from UNLV for Hydrogen Filling Station*

Proton Energy Systems announced a \$1.2 million contract award with the University of Nevada, Las Vegas Research Foundation. This is a follow-on to the Phase I contract under which the team is developing a hydrogen filling station capable of operating on solar power.

[http://www.distributed-energy.com/press/corporate.html?news\\_id=16984&year=2005&month=01](http://www.distributed-energy.com/press/corporate.html?news_id=16984&year=2005&month=01)

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15. *NYPA Awards Master Implementation Contract for DG, Fuel Cell Installations*

The New York Power Authority has awarded a master implementation contract to Northern Power Systems to design, engineer and install distributed generation projects at NYPA customer sites over the next three years. The first two projects identified as part of the contract include a 400-kW fuel cell CHP system in Grand Central Station in New York City.

[http://www.distributed-energy.com/press/corporate.html?news\\_id=16983&year=2005&month=01](http://www.distributed-energy.com/press/corporate.html?news_id=16983&year=2005&month=01)

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16. *ATI Allegheny Ludlum Receives Subcontract for SOFC Materials*

The University of Pittsburgh, with support from the DOE, awarded a subcontract to ATI Allegheny Ludlum for development of specialty metallic materials for use in solid oxide fuel cells. The contract is aimed at creating critical interconnect materials for solid oxide fuel cells.

<http://www.investquest.com/iq/a/ati/ne/news/ati011305fuel.htm>

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**State Activities**  
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17. *New Jersey Commits \$745 Million to Clean Energy*

The New Jersey Board of Public Utilities approved \$745 million in funding to advance its clean energy goals and the development of a renewable energy market in the state. Funding for the Clean Energy Programs comes from electric and gas customers who contribute a "Societal

Benefits Charge”, which was mandated by the Electric Discount and Energy Competition Act of 1999. <http://www.state.nj.us/bpu/home/news.shtml?71-04>

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*18. CA Energy Commission Publishes Recommended Interconnection Rule Changes*

The California Energy Commission has published a report detailing its final recommended changes to the state’s interconnection rules. The Commission will discuss adoption of the report’s recommendations during a February 2, 2005, meeting.

<http://www.irecusa.org/connect/enewsletter.html>

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*19. DC Passes Renewable Energy Standard*

The District of Columbia has passed a ruling requiring utilities to obtain 11 percent of their electricity from renewable energy by 2022. The District’s Public Service Commission will establish a renewable energy credits trading program, which will allow trading between other states in the PJM transmission region (Pennsylvania, New Jersey, Maryland).

<http://www.renewableenergyaccess.com/rea/news/story?id=20215>

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*20. NM Hydrogen Demonstration Project Industry Day Seeks Vendors*

The New Mexico Hydrogen Technology Partnership (HyTeP) and the U.S. Army National Automotive Center will host an Industry Day to exchange information on a Hydrogen Demonstration Project proposed for Albuquerque, New Mexico. The event is scheduled for February 16 & 17, 2005, in Santa Fe, NM. Companies interested in participating in the demonstration project are invited to give a presentation during one of the “Vendor” time slots in the agenda. <http://www.sesincusa.com/nmindustryday/>

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**Industry Headlines**  
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*21. GM, Shell Announce FCV Fleet in NYC Metropolitan Area*

General Motors will provide 13 fuel cell-powered vehicles and Shell Hydrogen LLC intends to establish New York State’s first hydrogen service station in the New York City metropolitan area in 2006. The demonstration activity is being done under the U.S. Department of Energy’s Infrastructure Demonstration and Validation Project.

<http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/viewpressreldetail.do?domain=2&docid=11561>

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*22. Hyundai Unveils Fuel Cell Tucson SUV*

Hyundai unveiled its second-generation fuel cell vehicle, the Tucson FCEV, which features an 80-kW fuel cell from UTC Fuel Cells, and achieves a 186-mile (300-km) driving range and a maximum speed of 93 mph (150 km/h).

[http://worldwide.hyundai-motor.com/common/html/about/news\\_event/press\\_read\\_2005\\_02.html](http://worldwide.hyundai-motor.com/common/html/about/news_event/press_read_2005_02.html)

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*23. Honda to Lease FCV to “Real Person”*

Honda announced it will lease one FCX fuel cell vehicle to a “real person” in 2005. Anyone can apply, but Honda says it would like the person to live near a hydrogen fueling station. The winner would also need a large enough home to accommodate a home hydrogen refueling station.

<http://world.honda.com/news/2005/c050111.html>

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**University Activities**  
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**24. Argentine Scientists Achieve Breakthrough in Hydrogen Generation**

Argentine researchers at the University of Buenos Aires' Catalytic Processes Laboratory have created a technique in which ethyl alcohol – derived from vegetable sources – is converted into hydrogen.

<http://www.est.org.uk/aboutest/news/eenews/index.cfm?mode=view&articleid=7441164>

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**25. University Fuel Cell Roundup**

(summaries contributed by Kathy Haq, Dir. of Outreach and Communications, National Fuel Cell Research Center, UC Irvine, [khaq@nfcrc.uci.edu](mailto:khaq@nfcrc.uci.edu))

Philip J. Herbert, the managing director of Freedom Wind Energy, a Pennsylvania wind power project developer, says his firm hopes to collaborate with Penn State University's Hydrogen Energy Center, which is working on producing hydrogen from fossil fuels. Freedom Wind Energy was awarded development rights for the Rock Run Wind Park, a 6,300-acre abandoned coal strip mine, and has announced plans to develop a 400-megawatt wind farm that could provide clean electricity to nearly 135,000 homes. In addition to generating clean electricity for the local grid, Freedom Wind Energy states that it is also looking into using the expansive site as an energy incubator for clean energy from hydrogen. (2-Jan-2005, *The Tribune-Democrat*, Johnstown, Pennsylvania)

The University of South Carolina at Columbia, which uses electric vehicles and biodiesel buses on its campus, recently built a residence-hall complex that sports solar panels, a turf roof and a hydrogen fuel cell for energy production. The complex is designed to use 20 percent less water and 30 percent less energy than a typical residence hall, saving an estimated \$50,000 per year. The article cites energy-efficient new construction among recent example of cost-savings at institutions of higher education. (7-Jan-2005, *The Chronicle of Higher Education*)

In a related story, Harris Pastides, vice president of research at the University of South Carolina, said he expects many of the researchers who will be housed in one of two new university buildings to be involved with hydrogen fuel cell and nanotechnology research. The buildings are part of a planned 5-million-square-foot research campus in downtown Columbia. Construction on the two buildings will begin in the spring of 2005 and be completed by fall 2006. (16-Jan-2004, *The Herald*, Rock Hill, S.C.)

A research team led by Professor Koichi Komatsu of the Kyoto University Institute for Chemical Research has succeeded in trapping a single hydrogen molecule inside a soccer-ball shaped carbon fullerene measuring 0.7 nanometers in diameter. In a report originally published in the U.S. journal *Science*, the team achieved a yield of 8.8 percent, dramatically improving productivity compared with conventional methods that rely on physical techniques, such as high-pressure and high-temperature treatment with gasses, which are difficult to control. The technology may lead to the controlled production of "endohedral fullerenes," which are nano-sized closed-cage carbon molecules that have atoms or a molecule trapped inside them. Such small structures are expected to be useful for magnetic resonance imaging and nuclear magnetic resonance analysis, among others. One nanometer is a billionth of a meter. (14-Jan-2005, *Jiji Press Ticker Service*)

Infectech, Inc., a biotechnology company engaged in research, development and commercialization of technologies for the production of alternative sources of fuel, remediation of toxic materials, and bacteria and disease testing kits, has signed a feasibility study with the Department of Environmental Science and Engineering of Gannon University in Erie, Penn., to develop a bioreactor that utilizes patented bacterial culturing methods to produce hydrogen



inexpensively. Infected believes the most likely method for low-cost production of massive quantities of hydrogen as an alternate energy source is hydrogen combustion using Clostridia bacteria, which produces hydrogen as a by-product. (19-Jan-2005, *PR Newswire US*)

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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](mailto:bernie@usfcc.com).

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**About *Fuel Cell Connection***  
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**The Sponsors**

*US Fuel Cell Council* -- The US 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>