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## **FUEL CELL CONNECTION - March 2007 Issue**

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**News on U.S. Government Fuel Cell Programs**  
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*1. DOE Releases Spending Plan for Additional \$1.474 FY2007 Funding*

DOE has released its plan to spend the additional \$1.474 funding it received in the FY2007 Continuing Resolution signed by President Bush in February 2007. The plan increases hydrogen technology funding by more than \$40 million from \$153.4 million (FY2006 appropriation) to \$193.5 million. Fuel cell research in the Fossil Energy Office – the Solid-State Energy Conversion Alliance (SECA) Program – receives an increase of nearly \$4 million over the FY2006 appropriation to \$63.3 million. The plan decreases Nuclear Hydrogen Initiative funding by nearly \$5 million to \$19.2 million.

<http://www.energy.gov/media/FY2007OperatingPlanForDOE.pdf>

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*2. Argonne Researchers Discover New Directions for Fuel Cell Catalysts*

Researchers at Argonne National Laboratory have discovered unique catalytic properties of nanosegregated platinum-nickel alloy surfaces. The discovery opens up new directions for the development of active and stable cathode catalysts for fuel cells. The platinum-nickel alloy configuration used by the researchers inhibits oxide formation.

[http://www.anl.gov/Media\\_Center/News/2007/news070208.html](http://www.anl.gov/Media_Center/News/2007/news070208.html)

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*3. NFPA Report Used to Determine Siting Requirements for Hydrogen Storage*

A new report issued by the National Fire Protection Agency (NFPA) – Siting Requirements of Hydrogen Supplies Serving Fuel Cells in Non-combustible Enclosures – was developed with funding from the National Renewable Energy Laboratory, the US Fuel Cell Council and others. The information in the report will support the creation of new NFPA 55 requirements, which do not currently cover storage of less than 3500 ft<sup>3</sup> of hydrogen in metal storage cabinets.

<http://www.nfpa.org/assets/files//PDF/Research/Hydrogensitingreport.pdf>

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*4. DOE Issues Interconnection “Best Practices” for Use by States*

The Department of Energy’s Office of Energy Efficiency and Renewable Energy (EERE) and Office of Electricity Delivery and Energy Reliability (OE) have developed voluntary “best practices” that States may use to implement interconnection requirements for distributed energy technologies. The Energy Policy Act of 2005 requires each State to consider interconnection procedures and complete its determination by August 8, 2007. The DOE “best practices” is a tool States can use in their determinations.

[http://www1.eere.energy.gov/news/progress\\_alerts/progress\\_alert.asp?aid=221](http://www1.eere.energy.gov/news/progress_alerts/progress_alert.asp?aid=221)

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*5. TRB Reports Alternative Fuel Policy Options to Congress*

The Department of Transportation’s Transportation Research Board (TRB) released its report to Congress that explores options and incentives needed to increase use of alternative fuels, including hydrogen, in public transit vehicles. The report also reviews the current incentives and legislation that exist to support increased use of alternative fuels.

[http://www.trb.org/news/blurb\\_detail.asp?id=7280](http://www.trb.org/news/blurb_detail.asp?id=7280)

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*6. Annual Energy Outlook Reports Status of Fuel Cell Usage*

The Department of Energy's Annual Energy Outlook for 2006 anticipates that sales of alternative vehicle technologies, including fuel cells, will account for nearly 28 percent of projected light-duty vehicle sales in 2030, up from 8 percent in 2005.

[http://www.trb.org/news/blurb\\_detail.asp?id=7372](http://www.trb.org/news/blurb_detail.asp?id=7372)

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*7. BNL Researchers Report on Development of New Fuel Cell, Hydrogen Catalysts*

Researchers at Brookhaven National Laboratory presented reports on two projects to develop new catalysts for hydrogen production and fuel cells. One project studies ways that gold atoms can prevent the destruction of platinum in the chemical reactions that take place in fuel cells. The other project explores how the gold in hydrogen production catalysts can be replaced with copper, which would greatly reduce fuel cell cost.

[http://www.bnl.gov/bnlweb/pubaf/pr/PR\\_display.asp?prID=07-33](http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=07-33)

[http://www.bnl.gov/bnlweb/pubaf/pr/PR\\_display.asp?prID=07-32](http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=07-32)

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**RFP/Solicitation News**  
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*8. NSF SBIR/STTR Includes Hydrogen, Fuel Cell Sub-Topics*

The National Science Foundation has released its Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) solicitation, which includes topics such as Hydrogen Storage Materials, Robust and Efficient Fuel Cell and Battery Technologies, and High-Temperature Polymer Materials (including fuel cell separation membranes). Approximately 150 awards are expected (125 SBIR Phase I and 25 STTR Phase I). Approximately \$12.5 million is available for the SBIR projects and \$3.75 million for the STTR projects. Deadline for proposals is June 13, 2007. <http://www.nsf.gov/pubs/2007/nsf07551/nsf07551.pdf>

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**Contract / Funding Awards**  
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*9. Army Awards Contract to Quantum for Hydrogen Program Expansion*

The U.S. Army's Tank Automotive Research, Development and Engineering Center (TARDEC) has awarded Quantum Fuel Systems Technologies Worldwide a contract to expand and enhance its hydrogen vehicle and Mobile Hydrogen Infrastructure (MHI) programs. The objective of the MHI program is to demonstrate the capability of Quantum's HyHauler Plus® transportable refueling stations as hydrogen and fuel cell technologies are deployed through the military's 21<sup>st</sup> Century Base initiative.

[http://www.qtw.com/files/qtw\\_press/070226%20QT%20Awarded%20Contract%20to%20Expand%20H2%20Hybrid%20Vehicle%20and%20Refueling%20Infrastructure%20Programs%20with%20Army.pdf](http://www.qtw.com/files/qtw_press/070226%20QT%20Awarded%20Contract%20to%20Expand%20H2%20Hybrid%20Vehicle%20and%20Refueling%20Infrastructure%20Programs%20with%20Army.pdf)

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*10. Protonex Receives \$3.5 Million Contract from Army Research Office*

Protonex Technology Corporation received a \$3.5 million contract with the U.S. Army Research Office for the development of a 250-Watt size portable fuel cell power source for military applications such as field battery charging and auxiliary power. The fuel cells would include a methanol reformer, but the company will also use the funds to "lay the groundwork" for use of fuels such as propane, military diesel and biodiesel.

[http://www.protonex.com/02-28-07%20ARO%20\\$3.5M%20Award.pdf](http://www.protonex.com/02-28-07%20ARO%20$3.5M%20Award.pdf)

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*11. UltraCell to Receive Follow-on Funding from Office of the Secretary of Defense*

UltraCell has been named to receive follow-on funding from the Department of Defense Office of the Secretary of Defense, for the research of subsystems and redesign of the existing XX25™. Research and redesign will focus on increasing safety margins and durability, reducing acoustic signature, size and weight, and increasing the system's manufacturability.

<http://www.fbo.gov/spg/ODA/OSD/McCellanCA/H94003-07-R-0004/SynopsisP.html>

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**State Activities**  
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*12. Minnesota Enacts Law Requiring 25 Percent Renewable Energy by 2025*

Minnesota has enacted a law requiring the state's utilities to utilize renewable energy for 25 percent of their power needs by 2025. Eligible technologies include hydrogen generated from renewable energy sources. For most of the state's utilities, the requirement starts at 7 percent in 2010, increasing to 12 percent in 2012, with further increases occurring every four years through 2025. Utilities that own a nuclear power plant are required to use 15 percent renewable energy in 2010, increasing to 30 percent by 2020.

<http://www.governor.state.mn.us/mediacenter/pressreleases/PROD007984.html>

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*13. Arizona's First Hydrogen Fuel Cell Bus Tours State*

ECOTALITY introduced the state of Arizona to its first hydrogen fuel cell powered bus, the ECObus, which also serves as a mobile classroom. The bus will tour the United States, starting at a Clean Cities Coalition event.

[http://home.businesswire.com/portal/site/home/?epi\\_menuItemID=989a6827590d7dda9cdf6023a0908a0c&epi\\_menuID=c791260db682611740b28e347a808a0c&epi\\_baseMenuID=384979e8cc48c441ef0130f5c6908a0c&ndmViewId=news\\_view&newsLang=en&div=973078938&newsId=20070227005234](http://home.businesswire.com/portal/site/home/?epi_menuItemID=989a6827590d7dda9cdf6023a0908a0c&epi_menuID=c791260db682611740b28e347a808a0c&epi_baseMenuID=384979e8cc48c441ef0130f5c6908a0c&ndmViewId=news_view&newsLang=en&div=973078938&newsId=20070227005234)

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*14. New York State Parks Partners with Toro on Hydrogen Fuel Cell Project*

The State of New York is partnering with the Toro Company on a project to demonstrate hydrogen fuel cell-powered turf maintenance equipment for the state's Office of Parks, Recreation and Historic Preservation. Niagara Falls State Park will receive three hydrogen fuel cell utility vehicles based on the Toro® Workman® chassis by mid-2007.

[http://www.thetorocompany.com/companyinfo/pressrel/hydrogen\\_fuel\\_cell\\_project\\_02222007.html](http://www.thetorocompany.com/companyinfo/pressrel/hydrogen_fuel_cell_project_02222007.html)

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**Industry Headlines**  
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*15. Fuel Cell Concept Cars to be Unveiled at New York Auto Show*

Two fuel cell powered concept cars will be unveiled at the New York Auto Show in April: Ford's Airstream Concept and the Mazda Nagare. The Airstream Concept features a plug-in hydrogen hybrid fuel cell drivetrain. The Nagare features a hydrogen fuel cell drivetrain and a unique seating configuration that puts the driver alone up front and allows "lounge-seating" for three in the rear. <http://www.autoshowny.com>

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16. *GM Announces Plans for Fuel Cell Test Fleet in 2007*

General Motors announced it will introduce a test fleet of 100 Chevrolet Equinox fuel cell vehicles, using hydrogen fuel, in the U.S. later this year, as well as an additional demonstration fleet of up to ten fuel cell vehicles in Europe in 2008.

<http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/viewpressreldetail.do?domain=2&docid=33963>

17. *Ford Showcases Fuel Cell Hybrid Electric Vehicle with Plug-in Capability*

Ford Motor Company unveiled the Ford Edge, a drivable fuel cell hybrid electric plug-in vehicle, during a March visit by President George W. Bush. The vehicle, which features the new HySeries Drive™ powertrain, achieves more than 41 mpg gasoline equivalent, with zero emissions, top speeds of up to 85 mph, and a total range of 225 miles between fuelings.

[http://media.ford.com/article\\_display.cfm?article\\_id=25675](http://media.ford.com/article_display.cfm?article_id=25675)

18. *Fuel Cells 2000 Publishes Ninth Edition of Fuel Cell Directory*

Fuel Cells 2000, an activity of the Breakthrough Technologies Institute, has published the Ninth Edition of its Fuel Cell Directory, which features more than 1,000 listings of companies, government agencies, associations and non-profits involved in the fuel cell industry. Entries include addresses, phone numbers, emails, company URLs, stock symbols, and contact names, as well as a description of the company and its current research projects. Printed copies of the Directory cost \$125.00, while electronic versions cost \$500.00 for unlimited use.

<http://www.fuelcells.org/>

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**University Activities**  
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19. *Hydrogen Fueling Station Dedicated at University of California, Irvine*

A new hydrogen fueling station was dedicated at the University of California, Irvine, featuring both 700 and 350 bar pressure fueling capabilities. The station is the first deployed by Air Products as part of the California Hydrogen Infrastructure Project. Planning is also underway for the addition of a separate liquid dispensing unit for vehicles that carry liquid hydrogen on board as fuel.

<http://www.airproducts.com/PressRoom/CompanyNews/Archived/2007/27Feb07.htm>

20. *RPI to Organize Fuel Cell Stack Assembly Research Consortium*

Rensselaer Polytechnic Institute's Center for Automation Technologies and Systems invites companies to participate in a Fuel Cell Stack Assembly Research Consortium, which is currently being organized by the Center. The Consortium will address technical challenges of processes for manufacturing and assembling fuel cell stacks. A Fuel Cell Manufacturing Workshop was held in October 2006 as a prelude to the formation of the Consortium.

<http://www.cats.rpi.edu/Workshops.html>

<http://www.fmc.rpi.edu/news.html#stackassy>

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**Administration**  
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Press releases and story ideas may be forwarded to Bernadette Geyer, editor, for consideration at [fuelcellconnection @ yahoo.com](mailto:fuelcellconnection@yahoo.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/>)

*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/>)

*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>)