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**FUEL CELL CONNECTION -- November 2002 Issue**  
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News on U.S. Government Fuel Cell Programs

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### 1. DOE Unveils Hydrogen Roadmap, 21<sup>st</sup> Century Truck Partnership

DOE Secretary Abraham unveiled the National Hydrogen Energy Roadmap, outlining the research, development, demonstration, codes and standards, and education efforts necessary to achieve the "hydrogen economy." In the same address, Abraham also announced the New Vision for the 21<sup>st</sup> Century Truck Partnership, which focuses on improving the energy efficiency and safety of trucks and buses.

[http://www.energy.gov/HQPress/releases02/novpr/pr02\\_v.htm](http://www.energy.gov/HQPress/releases02/novpr/pr02_v.htm)

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### 2. DOE EERE Strategic Plan Announced

DOE's recently restructured Office of Energy Efficiency and Renewable Energy has made available online its Strategic Plan, presenting its mission, core values, and strategic goals for addressing the National Energy Policy.

<http://www.eren.doe.gov/eere/spmemo.html>

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### 3. Argonne National Lab Opens Advanced Powertrain Research Facility

Argonne National Laboratory has announced plans to open an Advanced Powertrain Research Facility, which will provide public testing for engines, fuel cells, electric drives and energy storage. Facilities will include a four-wheel-drive dynamometer system, a sophisticated emissions measurement system, data acquisition system, safety system, and state-of-the-art air handling system. <http://www.anl.gov/OPA/news02/news021115.htm>

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### 4. PNNL Forms Microproducts Breakthrough Institute with Oregon State University

Pacific Northwest National Laboratory and Oregon State University have agreed to form a research and educational center, the Microproducts Breakthrough Institute, to develop and help market advances in the field of microtechnology. The new institute within five years could include a 50-60 staff and an annual research budget of \$20 million.

<http://www.pnl.gov/news/2002/02-37.htm>

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### 5. LBL Researchers Develop Cheaper SOFC

Researchers at Lawrence Berkeley Laboratory have developed a solid oxide fuel cell in which ceramic electrodes are replaced with stainless-steel-supported electrodes that are stronger, easier to manufacture, and cheaper.

<http://enews.lbl.gov/Science-Articles/Archive/MSD-fuel-cells.html>

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### 6. NETL Develops Multi-Fuel Reformer for Fuel Cells

The Fuel Processing Team at the National Energy Technology Laboratory has developed a concept for a reciprocating compression reformer that could convert a variety of fuels into forms suitable for use in a fuel cell. The invention does not require external heat transfer and eliminates several unit operations required in conventional fuel processing technologies.

[http://www.ornl.gov/news/pulse/pulse\\_v119\\_02.htm](http://www.ornl.gov/news/pulse/pulse_v119_02.htm)

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### 7. 21<sup>st</sup> Century Truck Gets Fuel Cell APU

General Dynamics C4 Systems has delivered a fuel cell-based auxiliary power unit (APU) to SunLine Transit Agency for installation aboard a concept Class 8 tractor through the U.S. Army's 21<sup>st</sup> Century Truck initiative. The 5-kW solid oxide fuel cell will act as a battery charger to power the air conditioning and other driver utilities when the truck is parked.

[http://www.gd.com/news/press\\_releases/2002/News%20Release%20-Monday,%20November%2018,%202002.htm](http://www.gd.com/news/press_releases/2002/News%20Release%20-Monday,%20November%2018,%202002.htm)

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*8. NASA Conducts Study of Fuel Cell Feasibility for Aviation Propulsion*

A recent feasibility study by NASA of fuel cells for aviation propulsion found that a fuel cell-powered craft could fly a demonstration flight with current state-of-the-art components. A system model of an all-electric craft was shown capable of a 140-mile flight carrying 270 lbs.

[http://www.aero-space.nasa.gov/curevent/news/vol3\\_iss4/eengines.htm](http://www.aero-space.nasa.gov/curevent/news/vol3_iss4/eengines.htm)

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*9. Fuel Cell Bus Placed into Revenue Service*

Thor Industries' ThunderPower hybrid fuel cell 30-foot bus was placed into revenue service with Sunline Transit Agency in Thousand Palms, California. The bus achieves 7 to 11 miles per gallon. Funding for the demonstration project is provided by the U.S. Department of Transportation, Sacramento Municipal Utility District, South Coast Air Quality Management District and others.

<http://www.thorindustries.com/pdf/ThorPressRelease20021106.pdf>

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*10. Hydrogen Generated On-Site for Both Vehicles and Stationary Power*

A public-private partnership between DOE, the City of Las Vegas, Air Products and Chemicals and Plug Power will serve as a commercial demonstration of the co-production of hydrogen to both fuel vehicles and produce electricity.

[http://biz.yahoo.com/prnews/021115/phf019a\\_1.html](http://biz.yahoo.com/prnews/021115/phf019a_1.html)

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*11. Fuel Cell Locomotive Project Completion*

FuelCell Propulsion Institute's fuel cell mine locomotive passed its final test procedure in Reno, Nevada, and has successfully completed the Mine-Locomotive Project, which received funding from DOE. The locomotive will continue service under the Institute's Mine-Loader Project.

<http://www.fuelcellpropulsion.org>

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RFP/Solicitation News
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*12. World Bank/International Finance Corporation Announce Fuel Cell Financing*

The International Finance Corporation (IFC), the private sector affiliate of the World Bank Group, is taking the lead in introducing stationary fuel cells as a preferred technology for distributed power in a number of developing countries. IFC acts as an executing agency for the Global Environment Facility (GEF), and will use funds from the GEF to assist the development of the market for fuel cell technologies in privately-financed, distributed, stationary power applications in selected GEF-eligible countries. The GEF Secretariat in May 2002 agreed to consider providing up to \$54 million in two stages for this program. The first stage of the project is expected to include up to three fuel cell DG commercial demonstration projects in at least two countries. These projects will involve various stakeholders and are expected to result in a total installation of 5-7 MW of fuel cells by 2005. There will be a forthcoming announcement of a pre-submittal conference call for the purpose of addressing vendor questions regarding submittals. Those who wish to participate in the conference call are requested to notify IFC no later than the close of business December 7, 2002. Please direct all questions to Mr. Dana Younger, IFC's GEF Coordinator, [dyounger@ifc.org](mailto:dyounger@ifc.org), Ph. 202-473-4779, or to Mr. Byron Washom, interim program manager for IFC, [spencermgt@aol.com](mailto:spencermgt@aol.com), Ph. 925-743-9196.

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13. *Fuel Cells Included in DOE Support of Advanced Coal Research*

Membranes for Hydrogen Separation, Electrical Interconnects for Coal-Based SOFC Systems, and Direct Utilization of Carbon in Fuel Cells are a few of the topics included in DOE's solicitation "Support of Advanced Coal Research at U.S. Universities and Colleges." Projects funded will support DOE's Vision 21 Program. Maximum DOE funding for Phase I program applications is \$50,000. All applications must have an IIPS transmission time stamp of not later than 10:00 p.m. Eastern Time on December 5, 2002. <http://doe-iips.pr.doe.gov/iips/busopor.nsf/Solicitation+By+Number/C6F082D51758209D85256C5E000D3827?OpenDocument>

14. *AQMD Fuel Cell RFP Deadline Extended*

Due to comments received by South Coast Air Quality Management District regarding the due date of the "Demonstration of Natural Gas, Stationary Fuel Cells in the South Coast Air Basin" RFP, AQMD staff has agreed to extend the proposal due date to 5:00 p.m. Friday, December 20, 2002. <http://www.aqmd.gov/rfp/>

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Contract / Funding Awards
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15. *DOT Awards UTC Fuel Cells Contract on Heavy Duty Fuel Cell Bus*

The U.S. Department of Transportation awarded a contract to UTC Fuel Cells and the Northeast Advanced Vehicle Consortium to design a heavy-duty, zero emission, ambient-pressure fuel cell power plant for buses. <http://www.utcfuelcells.com/news/archive/111102.shtml>

16. *Florida Awards Funds for Alkaline Fuel Cell Production*

Florida's Technological Research and Development Authority awarded Investment Initiative for Energy Technologies program funding to Apollo Energy Systems for the development of methods of economically mass-producing alkaline fuel cells. <http://www.electricauto.com/whatN2.htm>

17. *Genesis Technologies Picked for Hydrogen Processor Development*

Genesis Technologies received a contract from Ball Aerospace & Technologies for development of a methanol-to-hydrogen fuel processor that would be used in portable fuel cell power systems designed for military field applications. The unit is expected to be delivered in January 2003. <http://www.eyeforfuelcells.com/ReportDisplay.asp?ReportID=1718>

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Legislation / Regulations
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18. *CARB to Hold Workshop on Changes to ZEV Rule*

On December 5 & 5, California Air Resources Board will hold a workshop to discuss possible modifications to the ZEV program. The modifications, to be proposed in February 2003, are designed to address issues raised by industry litigation and to take into account current conditions and trends in zero and near-zero emissions technology development. <http://www.arb.ca.gov/msprog/zevprog/2003rule/2003rule.htm>

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Industry Headlines
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*19. GE, ExxonMobil, Stanford to Invest \$225 Million in Alternative Energy Sources*  
General Electric, ExxonMobil and Stanford University are forming the Global Climate and Energy Project (G-CEP), to identify and develop alternative and next-generation energy technologies including fuel cells. The total investment for the project is up to \$225 million over the next 10 years. [http://biz.yahoo.com/bw/021120/202128\\_1.html](http://biz.yahoo.com/bw/021120/202128_1.html)

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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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*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 six active Working Groups focusing on: Codes & Standards; Transportation; Power Generation; Portable Power; Stack Materials and Components; and Education & Outreach. 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>