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## **BPA Fuel Cell Program Update**

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### **BPA Fuel Cell Program:**

The last steering committee conference call included discussions about fuel cells, photovoltaic systems, combined heat and power and other distributed generation technologies. These quarterly calls help clarify the direction of the BPA Fuel Cell Program. We are watching the development of California's Hydrogen Highway and a summary of their Draft Blueprint Plan will be in the next Update. If you're interested in the California Hydrogen Highway, see their web site: <http://www.hydrogenhighway.ca.gov/>

BPA will soon have 3 Relion units online in battery charging applications. The unit brought online last year at a BPA radio site has paved the way for two more field tests. BPA will analyze the cost effectiveness of fuel cells in battery charging applications in a final report.

### **Climate Change Fuel Cell Grants:**

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In April, the new DoD Climate Change Fuel Cell Rebate Program solicitation period will open. While last year there was \$6,000,000 for rebates, this year only \$1,000,000 is available; so only unique and outstanding applications will receive rebates. The rebates are \$1,000 per kW of installed capacity.

Application information will be available on BPA's web page, at [http://www.bpa.gov/Energy/N/projects/fuel\\_cell/dod\\_climate\\_change/](http://www.bpa.gov/Energy/N/projects/fuel_cell/dod_climate_change/) in April, and the solicitation period will close June 1st.

One of last year's awardees, the San Francisco Processing and Distribution Center and the Embarcadero Postal Center will have a hybrid solar/fuel cell power plant comprised of a 250-kilowatt fuel cell, a 100-kilowatt roof-mounted solar power system, and a 185-kilowatt solar power system mounted on a parking canopy that will track the sun. FuelCell Energy, Inc. will provide the fuel cell; for more information see: <http://www.fce.com/#> under "Recent News".

### **Fuel Cell Education:**

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BPA will host two DoD funded, fuel cell workshops for Oregon teachers on February 25<sup>th</sup> at Pacific University. In these hands-on workshops, teachers receive a fuel cell car and curriculum kit. The kit includes a photovoltaic module and a reversible PEM fuel cell to generate hydrogen; the curriculum includes eight hands-on experiments designed for 8<sup>th</sup> - 10<sup>th</sup> grade science classes. For

more information on the Oregon Fuel Cell Education Pilot Program, see:  
[http://www.bpa.gov/Energy/N/projects/fuel\\_cell/education/](http://www.bpa.gov/Energy/N/projects/fuel_cell/education/)

Over 2,000 teachers visited BPA's booth at the National Science Teacher Association meeting in Seattle, learning about the Fuel Cell Education Program, which was nominated for the Governor's Award for Excellence in Energy.

BPA is talking with DOE, the Northwest Energy Technology Collaborative and the Washington Office of Superintendent of Public Instruction about fuel cell workshops and exhibits at both the Oregon Museum of Science and Industry and the Pacific Science Center.

## CHP Consortium Update

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The Combined Heat and Power (CHP) Consortium, spearheaded by NW Natural, continues to work towards installing CHP in Oregon and Washington. Projects will become more cost effective once a NW Natural CHP tariff is approved by the PUC. Projects planned for this year, include the new OHSU Macadam project, 3 hospitals and a large university. CHP audits are available for potential projects, just call Chris Galati at 503.721.2472. Future CHP Consortium projects include analysis of emissions characteristics and green tag potential.

## NWHA

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The Northwest Hydrogen Alliance (NWA) will soon launch their web-site at <http://www.nwhydrogenalliance.org/> NWA has also applied for 501 (c) (3) status.

A recent article on the GM fuel cell "Sequel" said it can travel 300 miles before refueling and can accelerate from zero to 60 m.p.h. in less than 10 seconds; this performance is equal to many gasoline-powered cars, but at a cost of \$50,000. The article also quoted a GM study that found that the infrastructure to support 1 million fuel-cell vehicles in the 100 largest U.S. cities would cost \$12 billion. Compared to an Exxon-Mobil estimate of \$200 billion to develop the oil and gas supplies this country needs by 2025, the \$12 billion looks reasonable. For the whole story, see <http://www.chicagotribune.com/business/chi-0501100021jan10,1,7220120.story?coll=chi-business-hed&ctrack=2&cset=true>

## PNNL

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The Fuel Cell Summit, published by Pacific Northwest National Laboratory (PNNL) is available at <http://www.pnl.gov/fuelcells/newsletter/>. In the last Summit, it was noted that IEEE P1547 should be published spring of 2005, meetings have begun on P1547.4 Draft "Guide for Design, Operation and Integration of Distributed Resource Island Systems with Electric Power Systems", and NFPA 853 has been expanded to stationary fuel cells below 50 kW. PNNL has also compiled several fuel cell and hydrogen fueling station permitting guides, which are available at [http://www.pnl.gov/fuelcells/permit\\_guide.stm](http://www.pnl.gov/fuelcells/permit_guide.stm)

## Quantum Leap Technology

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BPA will soon have a lease in place with Quantum Leap Technology (QLT) to demonstrate their high efficiency PEM fuel cell. QLT is a development stage, fuel cell company, located in Beaverton, Oregon. Their 6 kW PEM prototype will be tested at the Fuel Cell Test and Evaluation Center prior to delivery to BPA. For more information on QLT, contact Bill Sproull, VP Business Development at (503) 641-6002 x425, or [bills@quantumleaptech.com](mailto:bills@quantumleaptech.com)

## ReliOn (formerly Avista Labs)

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ReliOn's highlights for the fourth quarter of 2004, include securing a second round of financing and selling more than 130 Independence-1000 fuel cells in 2004. Oak Investment Partners joined the current investors in providing an additional \$25 million in funding. ReliOn's other investors include Enterprise Partners Venture Capital, Wall Street Technology Partners, Chrysalix Energy Management, Buerk Dale Victor, and Avista Corp.

## USFCC

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BPA is a member of the US Fuel Cell Council (USFCC), which is an industry association dedicated to fostering the commercialization of fuel cells in the United States. They will be hosting a Congressional Fuel Cell EXPO on May 24th, 2005. The USFCC has various working groups including Materials & Components, Transportation, Government Affairs, Education & Marketing, Portable Power, Power Generation and Sustainability, as well as Hydrogen Quality, Single Cell Testing and University Task Forces.

## Fuel Cell ?'s Call the EERE Info Center

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Did you know if you have fuel cell questions and call DOE's EERE Information Center hotline you'll be talking with someone in Olympia, Washington? The WSU Extension Energy Program contracts with DOE to run the EERE Information Center, answering questions on EERE's products, services, and 11 technology programs, including hydrogen and fuel cells.

So if you have fuel cell question, call 1-877-337-3463 (toll-free), or you can ask your question online at <http://www.eere.energy.gov/informationcenter/>

If your question is technical, Dave Sjoding will probably have the answer. In December, Dave answered questions about off-road fuel cells vehicles, how to get certified to work on fuel cells, producing hydrogen with solar energy and residential hydrogen and fuel cell systems.

## 2004 Fuel Cell Seminar:

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Over 3,000 people from 16 countries attended the four-day Fuel Cell Seminar. BPA's attendance was funded through the Climate Change Fuel Cell Program. Multiple technical sessions and posters indicated both progress and challenges for fuel cells, including manufacturing techniques, sealing and minimizing costs

and impurities. Presenters from the US, Korea, Japan and Switzerland indicated significant progress towards the commercialization of fuel cells. MTI MicroFuel Cell announced delivery of their direct methanol micro fuel cell, which powers a hand-held, radio-frequency identification reader from Intermec Technologies Corporation. MTI's micro fuel units are also being developed to power PDAs and cell phones.