

# California Hydrogen Business Council November 2006 Report

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## **1. Save the Date: Jan 18 CHBC General Meeting at AQMD**

It's no trick. Just three great treats! Mark your calendars now for CHBC's upcoming General Meetings, Thursday, January 18, hosted by South Coast Air Quality Management District, Diamond Bar, CA; Friday, April 27, to be held in Sacramento; and October 2006, date and location to be announced soon. CHBC President and Program Chair Hank Wedaa is lining up some surprise guests and terrific presentations for the January 18 meeting. Please watch your email for full details, and check the web site often. Happy Halloween!  
[CHBC](http://www.californiahydrogen.org): <http://www.californiahydrogen.org>

## **2. US Dept of Energy Awards \$100 Million in Fuel Cell R&D**

In an effort to overcome cost and durability barriers associated with hydrogen fuel cell research, Energy Secretary Samuel Bodman on October 24 announced \$100 million to fund 25 hydrogen research and development projects. The Department of Energy (DOE) will negotiate these 25 cost shared projects for an approximate total of \$127 million - \$100 million DOE cost; \$27 million applicant cost over four years - fiscal years 2007 - 2010. The projects will focus on fuel cell membranes, water transport within the stack, advanced cathode catalysts and supports, cell hardware, innovative fuel cell concepts, and effects of impurities on fuel cell performance and durability.

[DOE Awards](http://www.ens-newswire.com/ens/oct2006/2006-10-24-09.asp): <http://www.ens-newswire.com/ens/oct2006/2006-10-24-09.asp>

### **3. FTA Announces \$49 Million Fuel Cell Bus Program**

In October, Federal Transit Administrator (FTA) James Simpson and Congresswoman Mary Bono announced \$49 million in federal grants for researchers around the country to explore new ways to make commercially viable hydrogen fuel cell buses a reality. Three nonprofit organizations from around the country were competitively selected by the FTA to receive a share of the \$49 million: the Center for Transportation and the Environment in Atlanta, the Northeast Advanced Vehicle Consortium in Boston and Weststart/CALSTART of Pasadena, CA. The multimillion dollar national grant announcement was made possible through the National Fuel Cell Bus Technology Development Program, which was part of the recently enacted Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). CHBC members Ballard Power Systems, GE Global Research, Hydrogenics, ISE Corp., Shell Hydrogen and Westport Innovations are participating in various projects.

[FC Buses:](http://www.fuelcellworks.com/Supppage6199.html) <http://www.fuelcellworks.com/Supppage6199.html>

### **4. CHBC - Fuel Cell Markets Establishes Trans-Atlantic Collaboration**

CHBC and FuelCellMarkets.com have established a trans-Atlantic collaboration to further promote the business of hydrogen and fuel cells. CHBC's monthly newsletter will be posted on FuelCellMarkets.com's site each month (click News), along with information on our meetings. CHBC in turn has added a link to FuelCellMarkets.com on our web site's Home Page. The marketplace at FuelCellMarkets.com is designed to mirror the global marketplace online, and is structured around four key directories: Information, Opportunities, Products, Industry. We appreciate the opportunity to broaden our members' reach and look forward to future joint efforts.

[FuelCellMarkets:](http://www.fuelcellmarkets.com) <http://www.fuelcellmarkets.com>

[CHBC:](http://www.californiahydrogen.org) <http://www.californiahydrogen.org>

### **5. EU and Canada Seek Fuel Cell Buses**

Six regions and cities in the European Union (EU) and Canada are set to purchase a number of hydrogen fuel cell-powered buses for local transport networks, the European Commission has announced. EU officials said that the international cooperation in making the purchases follows the successful completion of the Clean Urban Transport for Europe (Cute) fuel cell bus project, which tested fuel cells buses on various routes in nine European cities. The new initiative will see similar trials taking place in both Europe and Canada -- an initiative the EU appears anxious to support. Cities including Amsterdam, Berlin and the British Columbia province of Canada are expected to operate the buses, following their purchase.

[FC Buses:](#)

<http://www.fuelcelltoday.com/FuelCellToday/IndustryInformation/IndustryInformationExternal/NewsDisplayArticle/0,1602,8297,00.html>

### **6. Industry Outlines Steps for European H2 Infrastructure**

The energy companies Shell Hydrogen B.V. and Total France, along with the vehicle manufacturers BMW Group, DaimlerChrysler AG, Ford Motor Co., General Motors Europe AG, MAN Nutzfahrzeuge AG and Volkswagen AG have announced their joint approach to advance hydrogen as a fuel for road transport in Europe. While the public and private sectors already agreed that so-called Lighthouse Projects, integrating all aspects of hydrogen production, distribution and use, are the necessary next step, the group of energy companies and vehicle manufacturers believe that now is the time to move forward. In a common position paper, the companies have defined a near and mid term action plan to pave the way for the introduction of hydrogen-based mobility in Europe.

[European Infrastructure:](#)

<http://www.theautochannel.com/news/2006/09/29/023474.html>

## **7. Automakers' Suit Against California Emissions Rules Can Proceed**

GM, Ford, and other automakers won a court bid to challenge California rules limiting emissions linked to global warming. A federal judge in Fresno, CA turned down California's request to throw out the case, saying the issues raised by car companies in the 2004 lawsuit should be decided in a trial. U.S. District Judge Anthony Ishii didn't rule on the merits of the case. A trial is scheduled for January 16. The ruling came just six days after California sued the six largest U.S. carmakers seeking damages for environmental and other harms caused by carbon dioxide and other greenhouse gas emissions. The auto industry sued California in 2004 to block a requirement that they cut such emissions by up to 30 percent. The rule is part of the state's campaign against global warming.

[Autos' Suit:](#)

<http://www.bloomberg.com/apps/news?pid=newsarchive&sid=az5B39XqAZR8>

## **8. California, NY Agree to Cooperate on Emissions Trading**

In order to more efficiently reduce greenhouse gas emissions, Gov. Arnold Schwarzenegger and New York Gov. George E. Pataki recently agreed to explore ways to link California's future greenhouse gas emissions credit market and the Northeastern and Mid-Atlantic states' Regional Greenhouse Gas Initiative (RGGI) upcoming market. Gov. Schwarzenegger also announced an executive order directing California Secretary for Environmental Protection Linda Adams to coordinate state climate change policy. The executive order instructs the secretary to work with the California Air Resources Board to seek to develop a framework that allows California to work together with RGGI. The arrangement is intended to help build a large, robust carbon trading market that will dramatically reduce emissions.

[Emissions Trading:](#) <http://gov.ca.gov/index.php?/press-release/4449/>

## **9. SCAQMD Unveils Low-Emission, Energy Efficient Fuel Cell**

South Coast Air Quality Management officials recently unveiled a groundbreaking near-zero-emission fuel cell and low-emission microturbine project that is reducing emissions and energy costs at TST Inc.'s aluminum foundry in Fontana. This project is the first use of a fuel cell at a large industrial manufacturing facility in Southern California and illustrates there are practical, near-zero emission alternatives to burning fossil fuels for generating electricity on-site.

[Fuel Cell:](#) <http://www.aqmd.gov/news1/2006/TSTFuelCell.htm>

## **10. Linde Paves the Way for Hydrogen Future**

In the presence of the German Federal Minister of Transport, the Linde Group officially inaugurated the Linde Hydrogen Center in Lohhof near Munich. The usage concept of the center is unique, combining the functions of a hydrogen filling station with those of a technology test center, a training center and a presentation platform. A total of 3 million euro was invested in the state-of-the-art hydrogen center. The heart of the facility is a filling station, which supplies a test fleet of hydrogen fuelled cars and buses with both liquid hydrogen (LH2) and compressed gaseous hydrogen (CGH2).

[Linde:](#)

<http://www.linde.com/international/web/linde/like35lindecom.nsf/0/C173E28F1899718CC12572020033A1FC>

## **11. Air Products Brings Hydrogen Production On-Stream**

Air Products announced recently that its hydrogen production facility at ExxonMobil Oil Corp.'s Joliet Refinery in Illinois is on-stream. The Air Products facility, located adjacent to the refinery, is an integrated steam methane reformer and recovery system processing refinery off-gas. It supplies 18 million standard cubic feet per day (MMSCFD)

of hydrogen, as well as steam for the refinery. This project is the fifth North American hydrogen facility brought on-stream in the past year by Air Products and the third in the U.S., including others at Baytown, TX and Convent, LA. Air Products also placed on-stream the largest outsourced hydrogen production facilities in Canada near Edmonton, Alberta and in Sarnia, Ontario. Additionally, in 2006, Air Products will bring on-stream another U.S. facility in Port Arthur, TX. In 2006 Air Products will have increased hydrogen production capacity by over 450 MMSCFD.

[APCI:](#)

<http://www.airproducts.com/PressRoom/CompanyNews/Archived/2006/19Oct06.htm>

## **12. Ballard Announces Follow-On Supply Agreement with General Hydrogen Corp.**

Ballard Power Systems announced that it has signed an agreement valued at approximately US\$22 Million with General Hydrogen Corp. to supply 2,900 Mark 9 SSL(TM) fuel cells. These fuel cells are for integration into General Hydrogen's products that are being sold to customers converting from conventional lead-acid batteries in their materials handling fleets. Under the agreement, Ballard expects to ship fuel cells ranging in size from 4 to 20 kilowatts, with roughly one-quarter of these units to ship in 2007, and the balance to ship in 2008.

[Ballard:](#)

[http://www.ballard.com/be\\_informed/about\\_ballard/news/2006/10/10/General%20Hydrogen%20ESA#](http://www.ballard.com/be_informed/about_ballard/news/2006/10/10/General%20Hydrogen%20ESA#)

## **13. Westport Innovation Ranked #2 in N. America on Deloitte List**

Westport Innovations Inc. announced that it ranked Number 2 on Deloitte's 2006 Technology Fast 500, a ranking of the 500 fastest growing technology, media, telecommunications and life sciences companies in North America. Rankings are based on percentage revenue growth over five years, from 2001-2005. Westport's CEO, David Demers, credits the significant environmental advantages of natural gas as the source of the company's market success over the last five years. Westport Innovations Inc. is a leading global supplier of engine and alternative fuel power technologies that allow engines to operate on clean-burning fuels such as natural gas, hydrogen, and hydrogen-enriched natural gas (HCNG).

[Westport:](#) [http://www.westport.com/news/newsdetail.php?id=316&return\\_to=index.php](http://www.westport.com/news/newsdetail.php?id=316&return_to=index.php)

## **14. GE Global Research Wins Popular Mechanics Award**

GE Global Research has been awarded Popular Mechanics' 2006 Breakthrough Award for development of an advanced electrolyzer that has the potential to make hydrogen production by water electrolysis economically feasible. The awards program recognizes valuable work in science and technology that can play a critical role in improving lives, expanding knowledge and building a better future. The novel design makes extensive use of GE-developed materials and processes. A GE invented plastic, Noryl(TM), replaces complex and expensive metal parts. Metal coating techniques from GE's aircraft engine and power generation products are used to make high performance electrodes with very low processing costs.

[GE:](#) [http://www.ge.com/research/grc\\_7\\_1\\_14.html](http://www.ge.com/research/grc_7_1_14.html)

## **15. Praxair to Build Hydrogen Facility at Chevron's Richmond Refinery**

Praxair Inc. has announced it will build a hydrogen facility at Chevron Corp.'s Richmond, CA refinery, amid rising demand for low-sulfur fuels. The facility will supply hydrogen to Chevron over a 15-year period, Danbury, Conn.-based Praxair said. The company said it also would build a pipeline network to supply hydrogen to other refineries in Northern California. Sales of hydrogen, used by oil refiners to remove sulfur from fuels, will climb

to \$3 billion in 2014 from \$790 million last year, aided by a Northern California expansion, Praxair said this year.

[Praxair](http://www.latimes.com/business/la-fi-briefs12.6oct12,1,2824899.story?coll=la-headlines-business): <http://www.latimes.com/business/la-fi-briefs12.6oct12,1,2824899.story?coll=la-headlines-business>

#### **16. GM Developing Home Hydrogen Refueling Device**

General Motors is building a prototype for a home hydrogen refueling unit in hope of selling fuel-cell cars by 2011. According to USA Today, the unit, which would make hydrogen using either electricity or sunlight, would help sidestep one of the most vexing problems surrounding the creation of the pollution-free, alternative-power cars: "how to persuade oil companies to invest in expensive new hydrogen stations that would compete with their core product, gasoline."

[GM Refueler](http://www.usatoday.com/money/autos/2006-09-24-gm-hydrogen-usat_x.htm): [http://www.usatoday.com/money/autos/2006-09-24-gm-hydrogen-usat\\_x.htm](http://www.usatoday.com/money/autos/2006-09-24-gm-hydrogen-usat_x.htm)

#### **17. NY Announces \$21 Million H2 Demo**

Governor George Pataki announced plans for a \$21 million initiative to harness hydropower to produce hydrogen for non-polluting vehicles. The initiative, which will be undertaken in Western New York, is expected to spur development of a new industry for creating high-tech jobs in the region. The hydropower-to-hydrogen project corresponds with the New York State Hydrogen Roadmap. The project will consist of two hydrogen generation stations plus storage and fueling facilities.

[NY State](http://www.fuelcellsworks.com/Supppage6124.html): <http://www.fuelcellsworks.com/Supppage6124.html>

#### **18. \$5M NYSERDA Funding Available for Development of On-Road Vehicle Components**

The New York State Energy Research and Development Authority (NYSERDA) is seeking proposals to support the development and manufacturing of advanced on-road vehicle components in New York State. The program will provide funding for new product development and for the siting or expansion of manufacturing facilities to produce innovative on-road vehicle components or systems. Components may include (but are not limited to) lightweight vehicle components, advanced powertrains, APU systems and advanced energy storage systems. Program objectives are to provide energy, environmental and economic benefits in New York State. The deadline for proposals is February 21, 2007.

[NYSERDA](http://www.nyserda.org/Funding/funding.asp?i=2): <http://www.nyserda.org/Funding/funding.asp?i=2>

#### **19. Clean Energy Helps Expand Alternate Fuel Information Services**

The Alternative Fuel Vehicle Institute (AFVI) recently announced a partnership with Clean Energy to expand efforts to provide vital information to alternative fuel end users that will help them make vehicle purchasing decisions. AFVI provides services that bring fleets in need of information together with a national team of fuel and technology neutral experts who can fit them with the fuels and vehicles. The additional new education services include: one-day forums that provide connections with peers through regional and national networks; webcasts and newsletters that link fleet professionals with experienced industry leaders; linkages between fleets and experienced industry leaders through substantive interactions; an enhanced website that will provide a range of information resources from technical support to industry contacts.

[AFVI-CE](http://www.afvi.org/pdf/press_release_12oct06.pdf): [http://www.afvi.org/pdf/press\\_release\\_12oct06.pdf](http://www.afvi.org/pdf/press_release_12oct06.pdf)

#### **20. Slick Energy Saver to Power Plant**

Fast food may not be good for Americans, but by the end of October, the grease it produces is expected to replace fossil fuels as an environmental way to power Millbrae's wastewater treatment plant. Leftover cooking grease collected from Bay Area restaurants

will allow the plant to provide 80 percent of its own power, saving taxpayers a bundle of money and cutting down on emissions associated with utility demands. The \$5.5 million upgrade to the plant, which began last September, will create a receiving dock for trucks to unload 3,000 gallons of grease a day into the facility's existing solid-waste digester. Microorganisms in the digester will eat their way through the grease, significantly boosting the amount of methane the plant uses to power its generators. The treatment plant already generates 40 to 50 percent of its own power by trapping the methane and carbon dioxide gases that are byproducts of the waste breakdown process. The gases enter a combustion engine that in turn powers the generator, creating electricity.

[Millbrae](http://www.insidebayarea.com/search/ci_4480182): [http://www.insidebayarea.com/search/ci\\_4480182](http://www.insidebayarea.com/search/ci_4480182)

### **21. Renewable Energy in America: Phase II Market Forecasts and Policy Requirements - Nov 29-30**

The American Council on Renewable Energy (ACORE) announced its 5th annual national policy conference, taking place in the Cannon Caucus Room and the Capitol Hill Club in Washington, DC on November 29-30, 2006. Phase I of renewable energy in America was the period 1975-2000, and centered on Federally-funded research, development and demonstration (RD&D) programs that were successful. ACORE has designated "Phase II" to be the period from 2000 to 2025, when the focus will be on putting the new technologies into use.

[ACORE](http://www.acore.org/programs/06policy.php): <http://www.acore.org/programs/06policy.php>

### **22. Hydrogen Internal Combustion Engines Symposium**

On February 13, WestStart and the Federal Transit Administration will hold a one day event to explore hydrogen internal combustion engine (HICE) applications. The program will include private industry and government expert briefings and a panel workshop with a goal of laying out prudent near term opportunities for hydrogen and hydrogen-blend ICE technology. This special symposium will take place at the Hilton Los Angeles, Universal City, CA and run concurrently with opening day activities of CalStart's annual Clean Heavy Duty Vehicle Conference.

[HICE](http://www.weststart.org): <http://www.weststart.org>

### **23. Silver and Gold Member Benefits**

CHBC gives a big thanks to Gold Member Hydrogenics and to our growing list of Silver Members, all major contributors to our growth and success. Gold Membership includes two free registrants to all CHBC meetings for one year as well as five reduced-price registrations and other marketing benefits. To inquire about membership, contact Managing Director Catherine Rips, [info@californiahydrogen.org](mailto:info@californiahydrogen.org).

[Gold Members](http://www.californiahydrogen.org/page.cfm?content=61): <http://www.californiahydrogen.org/page.cfm?content=61>

[Silver Members](http://www.californiahydrogen.org/page.cfm?content=33): <http://www.californiahydrogen.org/page.cfm?content=33>

### **24. Board of Directors**

President - Henry Wedaa; Vice President - Paul Scott, ScD; Managing Director - Catherine Rips; Secretary - Josh Mauzey; Treasurer/Communications Chair: Jerald Cole; Membership Chairman - Mark Abramowitz; Fleets Chair - John Addison; Program Chairman - Henry Wedaa; Director at Large - Gary Dixon; Director at Large - John Williams, PE; Ex-Officio Government Liaison - Shannon Baxter-Clemmons, PhD. To contact the board, please email: [info@californiahydrogen.org](mailto:info@californiahydrogen.org).

### **25. Send Us Your News - It Goes a Long Way!**

We welcome important news from our members for inclusion on our website and in next month's report. In addition to being distributed to CHBC's list of over 2200 industry members, our newsletters are forwarded to thousands more through the Canadian Hydrogen Association and FuelCellMarkets.com. Please send to:

info@californiahydrogen.org. Thank you for helping build a great organization.  
[More Fleet News](http://www.cah2report.com/): <http://www.cah2report.com/>

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John Addison, Contributing Editor  
Catherine Rips, Editor/Publisher

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760-341-2924  
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