

California Hydrogen Business Council December 2006 Report

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1. Welcome New Members

CHBC would like to welcome new Silver member Fuel Cell Markets. Like CHBC, Fuel Cell Markets assists in the commercialization of hydrogen, fuel cell and sustainable technologies. CHBC has likewise become an industry partner of FCM, joining global hydrogen and fuel cell organizations and companies in the effort to move the industry forward.

[Fuel Cell Markets](http://www.fuelcellmarkets.com): <http://www.fuelcellmarkets.com>

[FCM Newsletter](#):

http://www.fuelcellmarkets.com/article_plain_view.fcm?articleid=13428&subsite=1

2. January 18 General Meeting Hosted by AQMD

For less than the cost of a holiday meal, CHBC is serving up the latest info on hydrogen programs and policies at the U.S. Department of Energy, Federal Transit Administration, National Renewable Energy Lab, AQMD, WestStart-CALSTART, Alteryg, American Honda Motor Co., ISE Research and more. Join us January 18 for presentations by Dr. Sig Gronich, Technology Validation Manager, U.S. Department of Energy; David M. Mazaika, President and CEO, ISE Corp.; Mickey Oros, Vice President, Government Relations, Alteryg Systems Corp.; Stephen Ellis, Manager, Alternative Fuel Vehicles, American Honda Motor Co.; Dr. Matt Miyasato, Technology Demonstration Manager, South Coast Air Quality Management District; Fred Silver, Vice President, CalStart; Keith Wipke, Senior Engineer, National Renewable Energy Laboratory and others. The full agenda is

posted at www.californiahydrogen.org.

[Register](http://www.californiahydrogen.org/page.cfm?content=48): <http://www.californiahydrogen.org/page.cfm?content=48>

3. Diesel Trucks Target of Port Plan

Commissions for the ports of Los Angeles and Long Beach unanimously approved a \$2-billion plan on November 20 aimed at reducing air pollution even as the amount of goods passing through the complexes skyrockets. Each port will contribute more than \$100 million to replace the fleet of 16,000 aging short-haul diesel trucks that move goods between freighters and railcars. The total cost for the trucks, however, is expected to be as much as \$1.8 billion. The remainder would have to come from other industry and public funds. The plan also requires international cargo ships to run on low-sulfur fuel within 20 nautical miles of the harbor, and many docks will be retrofitted to require ships to use electric power while at shore.

[Ports](http://www.latimes.com/news/local/la-me-air21nov21,1,6543131.story?coll=la-headlines-california): <http://www.latimes.com/news/local/la-me-air21nov21,1,6543131.story?coll=la-headlines-california>

4. Hydrogenics Next Gen HyPM(R) Fuel Cell Power Modules Tailor-made

Hydrogenics Corp. announced the release of its next generation HyPM(R) Fuel Cell Power Modules. These next generation modules, built on HyPM's proven common stack technology platform, are "powered for purpose" through tailored engineering for specific backup power and mobility power demands. Hydrogenics' 2007 release also introduces the new H2X 200 Series fuel cell stack, bringing Hydrogenics' robust low pressure fuel cell stack design to a lower power range.

[Hydrogenics](http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=218552): http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=218552

5. Road Testing BMW's Hydrogen 7

Wired News was recently invited to test-drive one of BMW's new Hydrogen 7 automobiles. It proved a serious step forward in using hydrogen as a potential energy source for cars. BMW said it will put 100 of the hydrogen models into circulation in the United States, Europe and Asia. The cars will be loaned to high-profile people, BMW says, such as celebrities and politicians. If the cars become sufficiently popular, BMW says it can go into full-scale production, without commenting how much the model will cost.

[Wired News](http://www.wired.com/news/technology/autotech/0,72100-0.html?tw=wn_politics_1): http://www.wired.com/news/technology/autotech/0,72100-0.html?tw=wn_politics_1

6. Honda FCX in the News

American Honda Motor Co's FCX Concept fuel cell car was recently touted by Auto Week and Popular Mechanics. Auto Week says, "Behind the wheel of the Honda FCX hydrogen-powered car is both monumental and a non-event." Popular Mechanics says, "This latest FCX by Honda is a major leap forward toward the viability of the hydrogen-powered family car. For one thing, the four-door FCX easily seats the typical family of four, can squeeze a fifth and carry some luggage as well." The FCX is a working hydrogen-powered prototype that will be on sale to consumers in 2008, launching a year earlier than anticipated.

[Auto Week](http://www.autoweek.com/apps/pbcs.dll/article?AID=/20061023/FREE/61013008&SearchID=73261645311067):

<http://www.autoweek.com/apps/pbcs.dll/article?AID=/20061023/FREE/61013008&SearchID=73261645311067>

[Popular Mechanics](http://www.popularmechanics.com/blogs/automotive_news/4198880.html):

http://www.popularmechanics.com/blogs/automotive_news/4198880.html

7. Volkswagen Produces New High-Temperature Fuel Cell

German researchers with Volkswagen AG recently unveiled what they described as a breakthrough in fuel-cell technology, a high-temperature fuel cell that they said could be used in passenger cars by 2020. Europe's biggest carmaker has been researching the

fuel cell for more than seven years and claims the high-temperature cell can run more efficiently, with less environmental impact, than the more common low-temperature gas cell. "We believe that the future belongs to the high-temperature gas cell. The low-temperature gas cell hardly can compare when it comes to mass production," said Juergen Lehold, head of Volkswagen's corporate research. He added that the new cell "will make the overall system in the car lighter, more compact, stable and cheaper." The high-temperature fuel cell, or HTFC, differs because it is lighter, smaller and could be used in vehicles ranging from a subcompact car to a truck. (Look for release date 11/6.)
[Volkswagen](http://www.cleandedge.com/): <http://www.cleandedge.com/>

8. Quantum to Supply Hydrogen Storage Systems for GM Equinox Fuel-Cell Fleet

Quantum Fuel Systems Technologies Worldwide, Inc. has received a multi-million dollar purchase order from GM for hydrogen fuel storage systems to be used in GM's recently announced Chevrolet Equinox Fuel-Cell vehicle program. GM will begin building and deploying a 100-vehicle fleet of Equinox fuel-cell vehicles in 2007. The 10,000 psi (70 MPa, 700 bar) hydrogen storage systems for these Equinox Fuel Cell vehicles are based on Quantum's Type IV polymer-lined, all-composite, ultra-lightweight tank technology, incorporating advances in materials, material utilization, and optimized design, yielding benefits proprietary to GM.

[Quantum](http://www.greencarcongress.com/2006/11/quantum_to_supp.html#more): http://www.greencarcongress.com/2006/11/quantum_to_supp.html#more

9. First Brazilian FC Bus Delivered

The first Brazilian hydrogen cell powered bus was delivered November 14 by the Ministry of Mines and Energy and the Metropolitan Company of Urban Transport of Sao Paulo (EMTU). The ceremony included the minister of Mines and Energy, the governor of the state of Sao Paulo, the Metropolitan Transport secretary, and the president of the EMTU. Also participating were representatives of partner companies and organizations responsible for the financing of the project, among them the United Nations Development Program (UNDP), the Global Environment Facility (GEF) and the Studies and Projects Funding Body (Finep). Hydrogenics will supply a HySTAT-60 hydrogen electrolyzer to the project, as well as compression, storage and dispenser modules. The fueling station is planned to begin operation in the latter half of 2007.

[Brazil](http://www.anba.com.br/ingles/noticia.php?id=12865): <http://www.anba.com.br/ingles/noticia.php?id=12865>

[Hydrogenics](http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=218731): http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=218731

10. HyRadix Reformer Installed

HyRadix, a leading provider of on-site hydrogen generation systems and supply solutions, recently installed a large-scale hydrogen facility in Thousand Palms, CA using commercialized technology. The unit, located at SunLine Transit Agency, will provide fuel for SunLine's fuel cell bus, one of four procured by AC Transit and SunLine as part of the California Fuel Cell Partnership bus program. The HyRadix unit will provide sufficient hydrogen to allow sales to third party customers.

[HyRadix](http://www.hyradix.com/common/documents/110306HyRadix_Release.pdf): http://www.hyradix.com/common/documents/110306HyRadix_Release.pdf

11. British Columbia Commits to Fuel Cell Buses

British Columbia authorities are to commit CAN\$10 million to the development of a fleet of hydrogen-powered buses, it has been announced. The buses will be developed in support of the Hydrogen Highway project currently underway in the Canadian province. In making the announcement, transportation minister Kevin Falcon said that the government wanted to establish British Columbia as a leader in hydrogen and fuel cell technology development. He added that the ultimate goal of the project was to demonstrate the integration of hydrogen fuel cell buses into the regular operational service of a transit system. BC Transit, the provincial crown corporation responsible for

public transport in British Columbia, is to issue a request for proposals, calling for the development of prototype hydrogen-powered buses that can eventually be brought into commercial use.

[BC Buses:](#)

<http://www.fuelcelltoday.com/FuelCellToday/IndustryInformation/IndustryInformationExternal/NewsDisplayArticle/0,1602,8490,00.html>

12. Flash ATR of Liquid Bio-Feedstocks to Produce Hydrogen

University of Minnesota researchers have developed a process that flash evaporates nonvolatile liquid bio-feedstocks such as soy oil or glucose-water solutions by catalytic partial oxidation to produce hydrogen in high yields with a total reactor time of less than 50 milliseconds. The new process works 10 to 100 times faster than current technology, with no input of fossil fuels (except for the use of methane at reactor startup and shutdown) and in reactors at least 10 times smaller than current models. The work, published in the November 3 issue of Science, could significantly improve the efficiency of fuel production from renewable energy sources.

[UM Research:](#) http://www.greencarcongress.com/2006/11/flash_autotherm.html#more

13. Discovery Puts Lightweight Hydrogen Fuel Cell Step Closer

Canadian scientists have discovered a new way to capture and release hydrogen which might help overcome vexing problems with the storage of the gas, seen by many as the clean energy source of the future. The new process, which has prompted the University of Windsor, Ontario chemists to file for patents in Canada and the U.S., might also reduce metal contamination in foods and medicines. The new process takes up hydrogen, hangs on to it and releases it on demand, much like what happens in a rechargeable battery. This might prove useful in development of lightweight fuel cells to power vehicles.

[Canadian Breakthrough:](#)

<http://www.canada.com/topics/news/national/story.html?id=4bcb5007-32b8-47df-a0f4-d277a93bcfee&k=68406>

14. Hydrogen Engine Center Signs MOU with ITM

In an effort to provide essential technology to convert low-value, intermittent, renewable energy (wind, solar) into a reliable, non-fossil energy supply, Hydrogen Engine Center, Inc. (HEC) announced that it has signed a Memorandum of Understanding with ITM Power Plc (ITM), an innovator of alternative energy sources in the UK. HEC designs, manufactures and distributes alternative-fuel internal combustion engines for the industrial and power generation markets. Founded by Theodore G. Hollinger, formerly director of engineering at Ford Motor Co. and vice president of the Power Conversion Group at Ballard Power Systems, HEC produces engines that achieve the same fuel consumption costs as traditional gasoline engines. For ITM, tapping HEC will provide an early route to the provision of a complete system package using HEC's engine technology and ITM's low-cost electrolyzer technology.

[HEC:](#) <http://www.tmcnet.com/altpowermag/articles/3560-hydrogen-engine-center-signs-mou-with-itm-power.htm>

15. MU Students Developing a Hydrogen Car

The Mizzou Hydrogen Car Team -- which developed Missouri University's solar car, Suntiger VI -- has been working on a street-legal hydrogen car. MU is only the second institution in the nation to do so, said team president Kenneth Keane. The other is the University of North Dakota. Keane said the team made the switch from solar power because of hydrogen's potential as a viable alternative energy source. "We know the way technology is going these days and, unless there is a big breakthrough with solar

technology, it's pretty impractical to continue building solar-powered cars," he said.
[MU Car](http://digmo.com/news/story.php?ID=22957): <http://digmo.com/news/story.php?ID=22957>

16. CalStart Open House Dec 7

Industry members are invited to an Open House Reception, Thursday, December 7, from 5:30 - 7:30 p.m. at WestStart-CalStart's new Pasadena, CA headquarters, 48 S. Chester Avenue. Please RSVP no later than December 4 by calling (626) 744-5600. CalStart is a Silver member of CHBC. If you haven't yet learned what they're doing to help clean and efficient transportation technology companies grow, stop by the Open House and get the scoop.

[CalStart](http://www.calstart.org): <http://www.calstart.org>

17. Idaho Man Sentenced for Stealing Funds Invested in Bogus Fuel Cell Technology Venture

Attorney General Stuart Rabner and Division of Criminal Justice Director Gregory Paw announced that an Idaho man has been sentenced to prison for stealing funds from victims who invested in United Fuel Cell Technologies Inc., a phony corporation that the defendant claimed had developed a revolutionary technology to convert water to hydrogen fuel. According to Director Paw, Superior Court Judge Thomas Kelly of Mercer County sentenced Patrick Kelly, 51, of Kuna, Idaho to five years in state prison on a charge of second-degree theft by failure to make required disposition of property received. The defendant also was ordered to pay \$400,000 in restitution. Kelly pleaded guilty to the charge, admitting that he used more than \$200,000 in funds invested in United Fuel Cell Technologies to purchase eight cars in his own name.

[UFCT](http://www.nj.gov/oag/newsreleases06/pr20061109d.html): <http://www.nj.gov/oag/newsreleases06/pr20061109d.html>

18. US Fuel Cell Council Highlights Available Products

The US Fuel Cell Council (USFCC) announced that the organization has released its first-ever comprehensive list of fuel cell products available for purchase. The list of more than 40 fuel cell products for micro, portable, stationary and transportation applications features products from manufacturers headquartered in the U.S., Canada and Europe. While the list is seen as an important and impressive milestone, the USFCC cautions that availability doesn't translate into a fully commercial commodity. According to Robert Rose, executive director, "Some people have portrayed fuel cells as a far distant energy generation option. This simply is not the case. Fuel cells are available today and in some markets are competing directly against incumbent technologies."

[Fuel Cells](http://www.fuelcellsworks.com/Supppage6419.html): <http://www.fuelcellsworks.com/Supppage6419.html>

[USFCC](http://www.usfcc.com): <http://www.usfcc.com>

19. Save the Dates

Mark your calendars now for CHBC's 2007 General Meetings: Friday, April 27, CalEPA, Sacramento; Friday, July 27, location to be announced; and Thursday, October 25, location to be announced. More details will be released soon.

[CHBC Meetings](http://www.californiahydrogen.org/page.cfm?content=17): <http://www.californiahydrogen.org/page.cfm?content=17>

20. 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. CHBC is a support sponsor of the HICE

Symposium.

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

21. 2007 Clean Heavy Duty Vehicle Conference

WestStart CALSTART, the U.S. Army National Automotive Center and the Federal Transit Administration present the 2007 Clean Heavy Duty Vehicle Conference, February 13-15, 2007, at the Hilton Los Angeles/Universal City. Phase one of U.S. government regs on diesel engines takes effect in 2007. This conference will explore how 2007 will pave the way for 2010 and look at issues such as health impacts, global fuel supply and prices, global warming, emissions and more. For questions, please call (626) 744-5600. CHBC is a support sponsor of this nationally-recognized conference.

[Conference](http://www.cleanheavyduty.com): <http://www.cleanheavyduty.com>

22. 2nd Annual IHEC, Istanbul

The second biennial International Hydrogen Energy Conference will be held July 13-15, 2007 in Istanbul, Turkey. The deadline for abstract submissions is February 28, 2007. Topics include: New theories, research and hydrogen investments; Technical, physical, chemical, economical, ecological aspects of hydrogen energy; Hydrogen energy applications, hybrid usage requirements, developments on concrete projects; Important utilization aspects of hydrogen energy; Hydrogen economy, hydrogen application of electrochemistry, advantages of hydrogen as a renewable energy; Protection against air pollution by encouragement of hydrogen usage; Clean energy resources and hydrogen, space applications of hydrogen usage, renewable energies and hybrid applications. IHEC and its new Rumeli Fair & Exhibition Hall are the centerpiece of a complete Conference Valley. More than 6,000 guest rooms are within easy walking distance of IHEC, including 6 five-star hotels. Submit to: scientific@hydrogenforum.org

[IHEC](http://www.ihec2007.org/): <http://www.ihec2007.org/>

23. Silver and Gold Member Benefits

CHBC is most appreciative of the support of Gold Member Hydrogenics and our dedicated 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.

[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. To contact the board, please email: info@californiahydrogen.org. A special thanks to former Government Liaison Dr. Shannon Baxter-Clemmons, who recently stepped down from her post. We appreciate all your help and support!

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.

[CHA](http://www.h2.ca/): <http://www.h2.ca/>

[Fuel Cell Markets](http://www.FuelCellMarkets.com): <http://www.FuelCellMarkets.com>

[Click Here](#) to unsubscribe.

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