

California Hydrogen Business Council August 2006 Report

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1. NFCRC Hosts CHBC's September 15 Meeting

The National Fuel Cell Research Center (NFCRC) at UC-Irvine will host California Hydrogen Business Council's September 15 General Meeting. Award-winning investigative author Edwin Black is the keynote speaker. He will talk about his new book, "Internal Combustion," which is being launched at the CHBC meeting. Copies will be available for purchase and signing, if desired. Highlights of the day-long conference include a presentation by S. David Freeman, president, Los Angeles Harbor Commission, and a tour of NFCRC. A special debate will also be featured on the impact of the Clean Alternative Energy Initiative (Proposition 87). Rooms are being held until August 23 at a discounted rate at nearby Ayres Suites, Costa Mesa. Ask reservations (214-549-0300) for the California Hydrogen Business Council/UCI rate of \$105. Register for the meeting now and receive pre-registration pricing.

[Register](http://www.californiahydrogen.org/page.cfm?content=17&event_ID=44): http://www.californiahydrogen.org/page.cfm?content=17&event_ID=44

[Edwin Black](http://www.edwinblack.com): <http://www.edwinblack.com>

2. Governor Schwarzenegger's 06-07 Budget Provides \$28M for Alt Fuels

Highlights of Governor Arnold Schwarzenegger's recently signed budget provides \$30.4 million and 30.5 positions for a coordinated, multi-agency effort to reduce greenhouse gas emissions and promote alternative transportation fuels, including: \$28.2 million and 15.5 positions for the Air Resources Board to develop clean alternative fuels, promote zero and near zero emission vehicles, develop measures that require the use of biodiesel fuels, reduce hydrofluorocarbon emissions, and reduce emissions from heavy-duty vehicles. The budget also includes \$1 million and five positions for the Department of Justice to defend greenhouse gas emission regulations adopted by the Air Resources Board and other climate-related litigation.

[Budget](http://www.buildingabettercalifornia.com/): <http://www.buildingabettercalifornia.com/>

3. Sentators Push for Fuel Standards

On July 19, a bipartisan group of U.S. senators unveiled a bill that would increase fuel economy standards for the nation's passenger cars and light trucks by four percent each year -- about one mile per gallon annually -- starting after model year 2009. Looking to end the months-long impasse over increasing fuel economy standards and offer a more flexible approach, the eight senators, led by Sen. Barack Obama, D-Ill., introduced the Fuel Economy Reform Act of 2006. GM called the bill "unrealistic." Fuel economy standards have not been raised since 1985.

[Fuel Standards:](#)

<http://www.detnews.com/apps/pbcs.dll/article?AID=/20060720/AUTO01/607200377&Se archID=73251372884280>

4. BP and GE to Develop Hydrogen Power Plants and Technologies

BP and GE announced on July 18 their intention to jointly develop and deploy hydrogen power projects that dramatically reduce emissions of the greenhouse gas carbon dioxide from electricity generation. The world will continue to make extensive use of fossil fuels, such as natural gas and coal, for power generation for the foreseeable future, they noted, but technology now allows this to be done more cleanly by creating hydrogen from fossil fuels while capturing and sequestering the carbon as carbon dioxide in deep geological formations. To facilitate this advancement, BP and GE will collaborate on power, carbon capture and sequestration technologies. "The combination of our two companies' skills and resources in this area is formidable, and is the latest example of our intent to make a real difference in the face of the challenge of climate change," said BP's Vivienne Cox.

[Emissions Reduction:](#)

<http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7019791>

5. China to Spend US \$200 Billion on Renewable Energy in Next 15 Years

China is set to spend US\$200 billion on renewable energy over the next 15 years, and industry players are racing to grab a slice of the action. That kind of money would buy an oil firm the size of Chevron and leave change to fund the current renewable programs of Europe's top oil firms for 25 years. So from the arid plains of Xinjiang to the rolling hills of sub-tropical Guangdong, Chinese and foreign firms are erecting 40-story wind turbines, installing solar panels, and conducting tests on corn for biofuel. Beijing wants a tenth of its energy to come from environmentally friendly sources by 2010 -- a desire driven by soaring air pollution and chronic environmental degradation. Projects will need turbines, blades and other power components, which is why General Electric Co., Vestas Wind Systems and Gamesa, as well as homegrown firms China Solar Energy Holdings Ltd. and Suntech, are expanding capacity in the country.

[China:](#) <http://www.planetark.com/avantgo/dailynewsstory.cfm?newsid=37280>

6. Shell Hydrogen BV Announces Rotterdam Project

Shell Hydrogen B.V., in partnership with Connexxion Holding N.V. and MAN Truck & Bus Company N.V., recently announced plans to work towards creating the world's largest hydrogen-fuelled public transport operation in Rotterdam, The Netherlands. The project aims to have the largest hydrogen bus fleet operational in a single region before the end of the decade. Per a Memorandum of Understanding (MOU) signed in late June, Shell Hydrogen and partners will conduct an in-depth economic and technical study of the project and seek additional stakeholders before making a possible investment decision in 2007. The proposal includes more than 20 hydrogen internal combustion engine (HICE) buses manufactured by the bus builder MAN Nutzfahrzeuge and its subsidiary NEOMAN Bus.

[Shell Hydrogen:](#) http://www.shell.com/home/Framework?siteId=hydrogen-en&FC2=/hydrogen-en/html/iwgen/news_and_library/pressreleases/2006/zzz_lhn.html

7. Hydrogenics Receives Orders for HyPM(R) Fuel Cell Power Packs

Hydrogenics, General Motors of Canada, and NACCO Materials Handling Group, Inc. (NMGH) announced funding, subject to final negotiations, from Sustainable Development Technology Canada (SDTC) for a demonstration project that will advance hydrogen technologies for application in commercial lift trucks and other industrial vehicles. The project involves use of Hydrogenics' beta version HyPM(R) Fuel Cell Power Packs in up to 19 lift trucks and tuggers in operation over a two-year period at GM's Oshawa car plant. Hydrogenics also announced orders for four HyPM(R) Fuel Cell Power Packs for STILL International, a wholly-owned company of Linde AG. Two Fuel Cell Power Packs (FCPP) will be integrated into STILL Class 1 forklifts. The remaining modules will be integrated into two airport tow tractor vehicles to be deployed at the Hamburg Airport in Germany. In addition, Hydrogenics received an order for three 12kW Fuel Cell Power Modules by a leading mobile telecom company in Asia.

[Hydrogenics - GM](http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=203756): http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=203756

[Hydrogenics - Linde](http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=204164):

http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=204164

8. Ballard Power to Supply Fuel Cells to Shanghai Government

Ballard Power Systems announced it has signed an MOU and fuel cell supply agreement with Shanghai Fuel Cell Vehicle Powertrain Co., Ltd. (Powertrain) to cooperate on the development of fuel cell vehicles for demonstration and field trial programs planned in China in 2006 and 2007. Under the terms of the agreements, Ballard will supply fuel cells and related services and Powertrain will integrate those fuel cells into vehicles. As a first step Ballard will supply up to 20 Mark 902 automotive fuel cells and ship them to Powertrain for integration into vehicles later this year. Ballard will also provide related applications engineering and field service support. Upon successful integration of the fuel cells into vehicles, Powertrain will purchase up to an additional 18 Mark 902 fuel cells for the program in 2007. The Shanghai Municipal Government recently announced funding for a program to demonstrate 100 fuel cell vehicles by the end of 2007, with a goal of 1,000 on the road by 2009-10 and 10,000 by 2011-12.

[Ballard](http://www.ballard.com/media/news/2006/07/04/Shanghai%20Release#): <http://www.ballard.com/media/news/2006/07/04/Shanghai%20Release#>

9. Berlin Transit to Purchase 250 Hydrogen Buses by 2009

The state-owned mass-transit company in Berlin, BVG (Berliner Verkehrsbetriebe), will buy up to 250 hydrogen buses by 2009. According to a Berliner Zeitung story, manufacturers will be asked to provide offers for both diesel- and hydrogen-fueled buses in response to BVG's request for proposals in 2007. The rapidly rising cost of diesel fuel is reducing the cost gap with hydrogen. Four years ago, the BVG was paying approximately \$3.20 per gallon. Today, the cost is \$4.44 per gallon and it is expected to increase to \$5.68 per gallon by the end of the decade. At that price, hydrogen produced from butane becomes competitive. Berlin already has two hydrogen filling stations, opened to support its participation in the European hydrogen project HyFLEET:CUTE. Berlin is running a fleet of 14 hydrogen buses as part of that project. The BVG also tested two MAN hydrogen buses during the FIFA Soccer World Cup, using them to transport fans from the Tegel International Airport to the Olympic Stadium.

[Berlin](http://www.greencarcongress.com/2006/07/berlin_transit_.html): http://www.greencarcongress.com/2006/07/berlin_transit_.html

10. California Lays Down the Welcome Mat for Renewable Energy Projects

A number of recent actions by California regulators, transmission system operators, and utilities are effectively rolling out the red carpet for renewable energy projects. In June, the California Public Utilities Commission (CPUC) assured utilities that they can recover their investments in new transmission lines to access known renewable energy resources. The CPUC noted that the Tehapachi area in Southern California could produce

more than 4,000 megawatts of wind power, but new transmission lines to access that resource could cost as much as \$1 billion. The CPUC decision gives utilities confidence in pursuing such projects, since they can recover their costs in customer rates.

[Renewable Energy](#):

http://www.igreenbuild.com/_coreModules/content/contentDisplay.aspx?contentID=2441

11. Honda Celebrates Anniversary of First FCX Customer

One year ago, American Honda Motor Co. leased the world's first hydrogen fuel cell-powered vehicle to an individual retail customer. This anniversary marks the halfway point of a successful leasing partnership between American Honda and the Los Angeles-based Spallino family. The FCX is currently being used for everyday activities, having logged several thousand miles, largely on trips to the supermarket, soccer practices and long work commutes. It is meeting the driving needs of the family while providing valuable, real-world feedback to Honda on the expectations and requirements needed for the technology to move forward. Acting as impromptu fuel cell vehicle educators, the family is no stranger to being stopped by the public asking about their experiences or to ask for a ride in the car of the future.

[Honda](#): <http://www.hondanews.com/CatID2045?mid=2006062962095&mime=asc>

12. Outer Continental Shelf Renewable Energy and Alternate Use EIS

The U.S. Department of Interior Minerals Management Service (MMS) is developing a Programmatic Environmental Impact Statement (EIS) for renewable energy development on Federal Waters of the Outer Continental Shelf (OCS). MMS received authority for the OCS Renewable Energy and Alternate Use Program under Section 388 of the Energy Policy Act of 2005. Under this authority, MMS will regulate renewable energy projects and alternate use of existing oil and gas platforms on the Outer Continental Shelf. Renewable energy includes wind, wave, solar, current and generation of hydrogen.

[EIS](#): <http://ocsenergy.anl.gov>

13. Nine NHA Members Selected for DOE's Hydrogen and Fuel Cell TAC

Secretary of Energy Samuel W. Bodman recently named nine members of the National Hydrogen Association to the Department of Energy's new Hydrogen and Fuel Cell Technical Advisory Committee (HTAC) from a field of 100 nominees. The Committee was created in accordance with the Energy Policy Act of 2005 to advise the Secretary on issues related to the development of hydrogen and fuel cell technologies. Under the Advanced Energy Initiative, President Bush has requested \$215 million for hydrogen research and development in the 2007 budget. NHA members are: Larry Bawden, president & CEO Jadoo Power Systems; Mark Chernoby, V.P., Advanced Vehicle Engineering, DaimlerChrysler; John Hofmeister, president & U.S. Country Chair, Shell Oil Co.; Art Katsaros, Group V.P., Development & Technology, Air Products and Chemicals; Dan Keuter, V.P., Entergy Nuclear; Byron McCormick, executive director of Fuel Cell Activities, General Motors; Roger Saillant, president & CEO, Plug Power; Jan van Dokkum, president, UTC Power; and Gregory Vesey, president, Chevron Technology Ventures.

[HTAC](#): <http://www.doe.gov/news/3758.htm>

14. Experts Tell Congress Hydrogen Commercialization Still Years Away

Researchers have made several major advancements in developing hydrogen and fuel cell technology, but significant challenges remain before hydrogen-powered vehicles become technologically feasible and commercially viable, a panel of experts told the Senate Energy and Natural Resource Committee July 17. Witnesses at a committee hearing said the technologies have the potential to revolutionize the domestic vehicle fleet, but cautioned that such a breakthrough may not happen without continued strong

support from the federal government. Energy Department Undersecretary David Garman told the committee that in recent years, researchers had made several key technological advancements and outlined several key areas in which the industry needs to make progress before the vehicles are ready for mass production, chief among them developing the technology to store hydrogen on board a vehicle without dramatic changes to a vehicle's cost. Sen. Craig Thomas (R-Wyo.) urged Garman and others to move faster. "We can't let our laboratory people go on doing tests forever," he said.

[H2 Commercialization](#):

<http://www.californiahydrogen.org/page.cfm?content=20&display=60>

15. High Efficiency FuelCell Energy System to Generate Hydrogen and Electricity

FuelCell Energy recently announced development of a cost-efficient system to separate pure hydrogen from a gas mixture that then can be sold as fuel for hydrogen vehicles or industrial uses. The U.S. Department of Defense (DoD) has awarded the firm \$1.36 Million to advance this Electrochemical Hydrogen Separator (EHS) project for use with the company's Direct FuelCell(R) (DFC(R)) power plants. Unlike other means of separating hydrogen, which rely on compression, FuelCell Energy's proprietary EHS technology has no moving parts. As a result, it is anticipated to be significantly more reliable and efficient than conventional methods. EHS is expected to save up to one-half of the energy required when compared to conventional compression based-methods of hydrogen separation.

[FuelCell Energy](http://www.fuelcellenergy.com/#): <http://www.fuelcellenergy.com/#>

16. NHA Renewable Energy Forum, October 4-5, Albuquerque

This forum, the first sponsored by the National Hydrogen Association and its newly-established Renewable Hydrogen Working Group (RHWG), is intended to objectively promote the renewable production of hydrogen by identifying and addressing the issues, challenges, and opportunities associated with related technologies, infrastructures, and economics of each of the renewable resources.

[Renewables Forum](http://www.hydrogenassociation.org/renewablesForum/index.asp): <http://www.hydrogenassociation.org/renewablesForum/index.asp>

17. CHA Workshop in Montreal in October 19-20, 2006

Following the successful workshops in Calgary and Toronto, the Canadian Hydrogen Association is coordinating a final event this year in Montreal with a particular focus on the strategic directions of hydrogen related research and development that will better define and serve the future of hydrogen energy developments across Canada. The workshop will serve as an effective forum to strengthen the research, development and innovation linkages among government, industry and academe to Build Canadian Strength in Hydrogen Systems.

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

18. CHBC Support Sponsor of CalStart HICE Symposium and Conference

California Hydrogen Business Council is once again a support sponsor of CalStart's Clean Heavy Duty Vehicle Conference and Hydrogen Internal Combustion Engine (HICE) Symposium, February 13-15, 2007 at Hilton Universal City, CA. If you have agenda topics or speaker suggestions, email your ideas to Debby DuBose at ddubose@weststart.org by August 31.

[CalStart](http://www.CleanHeavyDuty.com): <http://www.CleanHeavyDuty.com>

19. 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.

[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>

20. 2006 CHBC 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 & Newsletter - 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

21. Send Us Your News

We welcome important news from our members for inclusion on our website and in next month's report. Please send it to: info@californiahydrogen.org. Please also feel free to forward the newsletter to your associates. And thanks to the Canadian Hydrogen Association for its distribution of our information. We appreciate it!

*John Addison, Contributing Editor / Newsletter Chair
Catherine Rips, Publisher / Editor*