

California Hydrogen Business Council

October 2006 Report

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1. Welcome New Members

CHBC welcomes new Individual Members Mike Binder, Mike Binder and Associates and Steve Azevedo, Eco Hydrogen. We appreciate your interest and your support!

2. Clinton Raises Billions for World Issues

A conference hosted by Bill Clinton on world problems ended September 22 with the former president announcing a total of \$7.3 billion in pledges to help reduce global warming and fight Third World poverty, disease and ethnic strife. The three-day Clinton Global Initiative, which attracted world leaders, corporate titans and celebrities, produced at least 215 commitments of financial support to a range of projects supported by the Clinton Foundation. Last year's gathering produced 300 commitments worth \$2.5 billion. A day after British business mogul Richard Branson pledged \$3 billion to battle global warming, Clinton on Friday announced the launch of a \$1 billion investment fund for renewable energy. Clinton said the new Green Fund would focus on reducing pollution and dependence on fossil fuels and creating jobs. Former World Bank President James D. Wolfensohn will serve as the fund's managing director; Clinton will serve as a senior adviser.

[Clinton:](#)

http://hosted.ap.org/dynamic/stories/C/CLINTON_GLOBAL_INITIATIVE?SITE=OHCIN&SECTION=HOME&TEMPLATE=DEFAULT

3. Chevrolet To Launch World's Largest Fuel Cell Vehicle Fleet

On September 17, General Motors committed to building the world's largest fuel cell vehicle fleet. GM says it will build more than 100 Chevrolet Equinox Fuel Cell vehicles and begin placing them with customers in fall 2007. A variety of drivers in differing driving environments will operate the vehicles in California, the New York metropolitan area and Washington D.C. Enabled by GM's fourth-generation fuel cell propulsion system, the Equinox Fuel Cell is a fully-functional crossover vehicle, engineered for 50,000 miles of life. It is expected to meet all applicable 2007 U.S. Federal Motor Vehicle Safety Standards.

[Chevrolet:](#)

<http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/viewmonthlyreleasedetail.do?domain=74&docid=28560>

4. DOE Proposes Revised Petroleum Replacement Goal

In September, the US Department of Energy (DOE) released a proposed rule that modifies the current replacement fuel goal initially established in the Energy Policy Act (EPA) of 1992. That goal currently calls for replacing 30% of on-road motor fuel use with alternative and replacement fuels by 2010. DOE's notice states the current goal is not achievable and must be modified. According to DOE, replacement fuels will make up only about 3% percent of motor fuel in 2010. The proposed goal pushes back the achievement of the 30% goal until 2030. To achieve the new levels, DOE is relying heavily on significant improvements in fuel efficiency and increased use of ethanol and biodiesel, and coal-to-liquid fuels. Very little contribution is projected for other alternative fuels, including hydrogen. A public hearing has been scheduled for October 3. Written comments are accepted via email at regulatory_info@afdc.nrel.gov before November 3.

[DOE:](http://www.eere.energy.gov/vehiclesandfuels/epact/plg_docket.html) http://www.eere.energy.gov/vehiclesandfuels/epact/plg_docket.html

5. Cal Sues Over Vehicle Emissions

The state of California sued the country's largest automobile manufacturers on September 20, seeking billions of dollars for environmental damage caused by tailpipe emissions. It was the state's latest effort to combat the effects of greenhouse gases, which trap heat in the atmosphere and cause global warming. The lawsuit, filed in U.S. District Court in Oakland, names General Motors Corp., Toyota Motor North America Inc., Ford Motor Co., Honda North America Inc. Chrysler Group and Nissan North America Inc. as defendants. In filing a nuisance lawsuit, the state is taking a somewhat new approach. It is not contending the automakers have broken any environmental laws, only that their conduct has resulted in severe damage for which they should pay.

[Cal Sues:](http://www.latimes.com/business/la-figlobal21sep21,1,2164943.story?ctrack=1&cset=true) <http://www.latimes.com/business/la-figlobal21sep21,1,2164943.story?ctrack=1&cset=true>

6. BMW to Roll Out Hydrogen-powered 7 Series

BMW announced it will roll out the world's first hydrogen-fueled car in serial production early next year. The car hits the market next April and will be shown at the Los Angeles car show in November. The BMW 7 Series Hydrogen 7 Saloon is powered by a 260 hp 12-cylinder engine and accelerates from 0-100 km/h (62 mph) in 9.5 seconds. BMW plans to build and lease a few hundred such cars initially. Drivers will be able to switch between gasoline and hydrogen so drivers will not be left stranded while the infrastructure to deliver hydrogen is built up.

[BMW:](http://news.yahoo.com/s/nm/20060912/bs_nm/autos_bmw_hydrogen_dc_1) http://news.yahoo.com/s/nm/20060912/bs_nm/autos_bmw_hydrogen_dc_1

7. Honda Holds Demo of Next Gen FCX

Honda Motor Co., Ltd. held a recent demonstration drive of the next-generation FCX Concept fuel cell vehicle. The FCX Concept features a newly developed compact, high-

efficiency Honda FC Stack as well as a low-floor, low-riding, short-nose body. It offers a comfortably large cabin and futuristic styling along with significant improvements in power output and environmental performance. Limited marketing of a totally new fuel cell vehicle based on this concept model is to begin in 2008 in Japan and the U.S.

[Honda](http://world.honda.com/news/2006/4060925FCXConcept/): <http://world.honda.com/news/2006/4060925FCXConcept/>

8. Alteryg and Eaton Collaborate on Global Fuel Cell Power Solutions

Fuel cell manufacturer Alteryg Systems announced recently it has signed two agreements with diversified industrial manufacturer Eaton Corp., creating a global collaboration to provide fuel cell power solutions for telecommunications and other premium power and mission-critical applications. Through this collaboration, Alteryg's advanced, low cost fuel cell engines will be integrated with Eaton Electrical's electrical control and power distribution products, to create complete stationary fuel cell systems. Additionally, Eaton will install, commission, start up, monitor and service Alteryg fuel cell products and systems at customer sites worldwide through Eaton's network of over 1,000 service professionals.

[Alteryg](http://www.altergysystems.com/announcements/eaton.asp): <http://www.altergysystems.com/announcements/eaton.asp>

9. ECD Receives DOE Award for Conversion of Small Engines to Hydrogen

Energy Conversion Devices, Inc. was recently awarded \$1.2 million from the U.S. Department of Energy to develop a low-cost method to convert small gasoline internal combustion engines (under 25 hp) to run on hydrogen fuel, while maintaining the performance and durability of the unmodified engines. The huge potential worldwide market for reliable, low-cost engines with near zero emissions in stationary and mobile applications includes two- and three-wheeled vehicles, lawn and garden care equipment, and small back-up generator sets. The project was one of six that received nearly \$18 million in funding.

[ECD](http://www.netl.doe.gov/publications/press/2006/06051-Hydrogen_Production_Projects.html): http://www.netl.doe.gov/publications/press/2006/06051-Hydrogen_Production_Projects.html

10. Clean Energy Files For IPO

Clean Energy Fuels Corp., which provides natural gas fuels for vehicle fleets in the U.S. and Canada, announced it filed a registration statement on Form S-1 with the U.S. Securities and Exchange Commission relating to a proposed initial public offering of its common stock. The offered shares will be sold by Clean Energy and certain stockholders of the company. W.R. Hambrecht + Co., LLC will act as the sole book-running manager for the offering and Simmons & Co. International will act as co-lead manager. When available, prospectuses may be obtained from by calling 877-828-5200 or by emailing info@wrhambrecht.com.

[CE IPO](http://www.cleanenergyfuels.com): <http://www.cleanenergyfuels.com>

11. Ballard Introduces Next Generation Air-Cooled Fuel Cell Stack

Ballard Power Systems has announced successful completion of alpha trials and plans for accelerated beta trials and managed commercial rollout of its air-cooled fuel cell, the Mark 1020 ACS. The Mark 1020 ACS, a product primarily focused on the backup power market, provides a range of power outputs from one to five kilowatts, and leverages Ballard's air-cooled fuel cell technology expertise to deliver several significant improvements over earlier product prototypes. Key elements of this next generation design include: simplified, lower cost design, self-humidification, and ambient operating regime.

[Ballard](http://www.ballard.com/be_an_investor/news/2006/09/06/15_Mark%201020%20ACS.pdf):

http://www.ballard.com/be_an_investor/news/2006/09/06/15_Mark%201020%20ACS.pdf

12. Hydrogen Fork Lifts

Six companies including WalMart and Bridgestone are currently conducting trials with fork lifts that run on hydrogen rather than lead acid batteries, John Sheridan, CEO of Ballard Power Systems, said at the ThinkEquity Partners Growth Conference in San Francisco in September. Cellex Power and General Hydrogen produced the vehicles, which run on fuel cells from Ballard. Ballard shipped 76 Mark 9 SSL vehicular hydrogen fuel cells to its customers in the first half of the year.

[Fork Lifts](http://news.com.com/2061-11128_3-6114690.html): http://news.com.com/2061-11128_3-6114690.html

13. Post Office Unveils Hydrogen Fuel Cell Mail Delivery Minivan

Officials of the US Postal Service (USPS) and General Motors participated in the September 27 unveiling of a hydrogen fuel-cell mail delivery minivan at the Irvine Post Office. According to a post office statement, the agency drove almost 1.2 billion miles last year, so fuel represents a significant cost of doing business. With 30,000 vehicles fueled by natural gas, propane, ethanol, or electricity, the USPS boasts the largest and most diverse fleet of alternative fuel vehicles in the United States. A spokesman noted with vehicles powered by hydrogen fuel cells, "We have the potential to solve several major challenges facing America today: dependence on petroleum imports, poor air quality, and greenhouse gas emissions."

[Post Office](http://www.usps.com/communications/community/hfcv_event.htm): http://www.usps.com/communications/community/hfcv_event.htm

14. Brazil to Debut Hydrogen Buses

Five buses with hydrogen fuel cells will be put to the test in 2007 in Sao Paulo, Brazil and neighboring cities. The four-year experiment calls for total travel of one million kilometres. If the hydrogen buses pass the test, the fleet will be expanded to 100 or 200 vehicles. A similar project will get underway next year in Rio de Janeiro. The hydrogen bus project in Sao Paulo, which has the backing of the United Nations Development Programme (UNDP), opted for production of hydrogen from electrolysis.

[Buses](http://www.ipsnews.net/news.asp?idnews=34478): <http://www.ipsnews.net/news.asp?idnews=34478>

15. Researchers Use Fuel Cells to Power Unmanned Aerial Vehicle

Georgia Institute of Technology researchers have conducted successful test flights of a hydrogen-powered unmanned aircraft believed to be the largest to fly on a proton exchange membrane (PEM) fuel cell using compressed hydrogen. In November, the researchers, led by David Parekh, founder of Georgia Tech's Center for Innovative Fuel Cell and Battery Technologies, will present details of the project at the Society of Automotive Engineers' Power System Conference in New Orleans. Apart from spacecraft, notes Parekh, little has been done to leverage fuel cell technology for aerospace applications. Though fuel cells don't produce enough power for the propulsion systems of commercial passenger aircraft, they could power smaller, slower vehicles like unmanned aerial vehicles (UAVs) and provide a low cost alternative to satellites. Such UAVs could also track hurricanes, patrol borders and conduct general reconnaissance.

[UAV](http://www.sciencedaily.com/releases/2006/08/060828211801.htm): <http://www.sciencedaily.com/releases/2006/08/060828211801.htm>

16. Boeing Hydrogen Plane Set to Lift Off

Boeing is developing a light aircraft powered by fuel cells and electric motors, making it potentially the greenest plane ever to fly. It would emit no carbon dioxide, the main gas blamed for global warming, or other pollutants, leaving just a trail of water. It would also be almost completely silent. The hitch? It would fly at only 70 mph. The decision to develop the plane comes amid growing concern over high carbon dioxide emissions from passenger jets. Boeing is working with Intelligent Energy, a British fuel cell designer. It hopes the two-seater aircraft will make its maiden flight in the next 12 months.

[Boeing](http://technology.timesonline.co.uk/article/0,,19509-2330386.html): <http://technology.timesonline.co.uk/article/0,,19509-2330386.html>

17. Chevron to Fund Major UC Davis Biofuel Research Projects

Chevron Corp. will fund up to \$25 million in research at UC Davis in the next five years to develop affordable, renewable transportation fuels from farm and forest residues, urban wastes and crops grown specifically for energy. The researchers will address the vast range of variables -- from genetics to thermochemical reactions to economics -- that will be involved if many vehicles are to be powered in the future by something other than gasoline and diesel fuel. Chevron's interest in next-generation biofuels is a very good fit with UC Davis' expertise in alternative fuels and transportation systems. UC Davis already has top research and teaching programs on hydrogen and biofuels, electric and gasoline-electric hybrid vehicles, power generation from biomass and strong programs in converting food-processing wastes and agricultural residues to energy.

[Biofuel](http://www.news.ucdavis.edu/search/news_detail.lasso?id=7873): http://www.news.ucdavis.edu/search/news_detail.lasso?id=7873

18. Renewables Becoming Cost-Competitive with Fossil Fuels in the U.S.

On September 18, Worldwatch Institute and Center for American Progress released a report entitled "American Energy: The Renewable Path to Energy Security," which shows that new technologies which harness renewable energy have either become -- or are steadily becoming -- economically competitive with fossil fuels. Since 2000, global wind energy generation has more than tripled; solar cell production has risen six-fold; production of fuel ethanol from crops have more than doubled; and biodiesel production has expanded nearly four-fold. Annual global investment in "new" renewable energy has risen almost six-fold since 1995, with cumulative investment over this period nearly \$180 billion. The report adds that while the business growth and consumer demand are both skyrocketing, government policy continues to lag behind that of other world leaders, and calls for "world-class energy policies based on a sustained and consistent policy framework at the local, state, and national levels."

[Renewables](http://www.worldchanging.com/archives/004945.html): <http://www.worldchanging.com/archives/004945.html>

19. Save These Dates in 2007

In response to requests from industry members who travel from the East, CHBC is scheduling its first 07 meeting on a Thursday instead of a Friday. Details will be announced at a later time, but for now, please save these dates: Thursday January 18, Friday April 27, Friday July 27. A meeting date in October 2007 will also be announced at a later date.

20. Calif Fuel Cell Partnership Road Rally Oct 5-8

California Fuel Cell Partnership's 5th annual Road Rally 2006 will be held October 5-8, 2006 with stops in Anaheim, Torrance and San Diego. The public will have the chance to test drive hydrogen fuel cell vehicles made by eight auto manufacturers, learn about fueling with hydrogen, and more.

[Road Rally](http://www.roadrally2006.org): <http://www.roadrally2006.org>

21. So Cal Clean Vehicle Technology Expo Oct 10-11

October 10-11, join Southern California's fleet operators, alternative and clean fuel vehicle manufacturers, infrastructure technology providers, funding agencies, and other industry experts at the Ontario Convention Center as they exchange information on clean vehicle funding, policies and regulations. Hear from the manufacturers directly about their light-, medium- and heavy-duty product offerings for 2007 and beyond. The conference is hosted by the South Coast Air Quality Management District. Please email info@cleanvehicleexpo.com or call 310-314-1934 x 8 for more information.

[Agenda](http://www.cleanvehicleexpo.com): <http://www.cleanvehicleexpo.com>

22. The Energy Industry and Technology Entrepreneurship Nov 11

The Caltech/MIT Enterprise Forum presents a program on November 11, 2006 with John

Preston, president and CEO, Atomic Ordered Materials LLC and senior lecturer at the Massachusetts Institute of Technology as keynote speaker, along with a panel representing energy industry technology experts, entrepreneurs and venture capital firms. For questions, contact Lawrence Wnuk at lswnuk@hydrogen.la.

[Register](http://www.entforum.caltech.edu/upcoming-Next.html): <http://www.entforum.caltech.edu/upcoming-Next.html>

23. 6th Hybrid Truck Users Forum Nov 14-16

The 6th Hybrid Truck Users Forum (HTUF) National Meeting, November 14 - 16, 2006 in San Diego, CA, is presented by WestStart and the US Army National Automotive Center (NAC) and hosted by ISE Corp. in partnership with Maxwell and Siemens. The informative two and a half day meeting focuses on truck user needs, hands-on knowledge and joint action. For questions or comments, contact: Bill Van Amburg, bvanamburg@weststart.org, or Richard Parish, rparish@weststart.org

[HTUF](http://www.calstart.org/programs/htuf/index.php?p=programs): <http://www.calstart.org/programs/htuf/index.php?p=programs>

24. 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>

25. 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 - 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.

26. Send Us Your News

We welcome important news from our members for inclusion on our website and in next month's report. Please send to: info@californiahydrogen.org. Thank you for helping build a great organization.

[More H2 Fleet News](http://www.cah2report.com/): <http://www.cah2report.com/>

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John Addison, Contributing Editor
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