

California Hydrogen Business Council July 2006 Report

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1. Edwin Black Keynotes Sept 15 CHBC Meeting

California Hydrogen Business Council is thrilled to present Edwin Black as keynote speaker at our September 15 General Meeting. An award-winning investigative author of 50 bestselling editions in 13 languages in 60 countries, Black will speak the day his newest work debuts: "Internal Combustion: How Corporations and Government Addicted the World to Oil and Derailed the Alternatives." Other speakers of note include David Freeman, chairman, Los Angeles Harbor Commission, and Bob Sawyer, chairman of the California Air Resources Board. A special debate will also be featured on the impact of the Clean Alternative Energy Initiative. Don't miss it! Southern California location to be announced very soon. In addition, please save the date for our first annual holiday party and dinner meeting, Thursday December 7.

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

2. Justices Take Up Climate Debate

Over the objection of the Bush Administration, the Supreme Court entered the debate over global warming on June 26, agreeing at the urging of environmentalists to rule on whether emissions from new cars, trucks and power plants must be further regulated to slow climate change. The court's action gave a surprising, if tentative, boost to 12 states, including California, and a coalition of environmentalists who say the federal government must restrict the exhaust fumes that contribute to global warming. Their appeal accused the Environmental Protection Agency of having "squandered nearly a decade" by failing to act. The case, to be heard in the fall, could be one of the most important environmental disputes to come before the court. Environmental advocates said automakers could be forced to produce a fleet of vehicles that pollute less.

[Climate Debate](http://www.californiahydrogen.org/page.cfm?content=20&display=53): <http://www.californiahydrogen.org/page.cfm?content=20&display=53>

3. Chevron, Georgia Tech Collaborate on Biofuels, Hydrogen

Chevron Technology Ventures (CTV), a subsidiary of Chevron Corp. and the Georgia Institute of Technology have formed a strategic research alliance to pursue advanced technology aimed at making cellulosic biofuels and hydrogen viable transportation fuels. CTV plans to collaborate with Georgia Tech's Strategic Energy Institute and contribute up to \$12 million over five years for research into and development of these emerging energy technologies. The focus of the joint research is to develop commercially viable processes for the production of transportation fuels from renewable resources such as forest and agricultural waste. This is viewed as an important advancement over first-generation biofuels such as ethanol and biodiesel, which are made from agricultural crops like corn, sugarcane and soybeans. Don Paul, vice president and chief technology officer, Chevron Corp., said, "Beyond this project, Chevron in 2006 expects to spend approximately \$400 million in the development of alternative and renewable energy technologies and in delivering energy efficiency solutions."

[Chevron](http://www.chevron.com/news/press/2006/2006-06-15.asp): <http://www.chevron.com/news/press/2006/2006-06-15.asp>

4. Santa Monica Celebrates Hydrogen Fueling Station Opening

The City of Santa Monica, Calif., Air Products and the South Coast Air Quality Management District (AQMD) recently celebrated the official opening of a hydrogen fueling station located at the Santa Monica City Yard. Hydrogen is generated on-site from a production model HOGEN(R) 6M Electrolyzer manufactured by Proton Energy Systems, which supplies Air Products' Series 200(TM) integrated vehicle fueling system. The hydrogen is used to fuel five Quantum hydrogen-electric hybrid Priuses, a recent addition to Santa Monica's fleet of 40 gas-electric hybrid Priuses. All stations in the AQMD five cities program are now open. Air Products' technology was also selected by Chevron for inclusion at Chevron's hydrogen stations in Florida and Michigan. The two locations will use Air Products Series 300 hydrogen compression, storage and dispensing technology.

[Santa Monica Hydrogen Station](http://www.chevron.com/news/press/2006/2006-06-15.asp): <http://www.chevron.com/news/press/2006/2006-06-15.asp>

[Florida and Michigan Stations](http://www.airproducts.com/PressRoom/CompanyNews/Current/AreaOfInterest/Markets/HydrogenEnergy/22Jun06.htm):

<http://www.airproducts.com/PressRoom/CompanyNews/Current/AreaOfInterest/Markets/HydrogenEnergy/22Jun06.htm>

5. State of California Awards Contracts for Hydrogen Vehicles

Contracts have been awarded by the State of California for RFP 05-610, "Demonstration of a Diverse Fleet of Hydrogen Powered Vehicles" - part of California's hydrogen highway network program. General Motors will provide one PEM FCV, Quantum Technologies will supply for four hydrogen-electric hybrid Priuses, and Ford will deliver two E450 hydrogen internal combustion engine (HICE) shuttle buses. Awards for three new hydrogen stations will be announced soon.

[RFP 05-610 Awarded](http://www.hydrogenhighway.ca.gov/sb76/vehicleaward.pdf): <http://www.hydrogenhighway.ca.gov/sb76/vehicleaward.pdf>

6. CARB ZEB Program Would Add 1,000 Hydrogen Buses

Leaders from public transportation, the California Air Resources Board (CARB), bus and fuel cell manufacturers met on June 21 at the South Coast Air Quality Management District (AQMD) to discuss plans to have 1,000 hydrogen fuel cell buses in service in California. Currently there are eight. One thousand buses would carry 400,000 daily riders and create a demand for over 40,000 kg/day of hydrogen.

[1000 ZEBs](http://www.arb.ca.gov/msprog/bus/zeb/meetings/meetings.htm): <http://www.arb.ca.gov/msprog/bus/zeb/meetings/meetings.htm>

[ZEB Presentations](http://www.arb.ca.gov/msprog/bus/zeb/meetings/meetings.htm)

7. Hydrogenics to Provide Hydrogen Generation Plant for BOC

Hydrogenics Corp. has announced receipt of an order from BOC for a HySTAT hydrogen

generation plant for use at a BOC facility in Waiuku, North Island, New Zealand. The order, expected to be delivered in late 2006, is valued at approximately \$1.1 million. This is the initial order received under a global supply agreement recently entered into with BOC. A portion of the hydrogen produced by this plant will be used to supply a nearby steel mill with hydrogen required during the annealing, or strengthening process. The remaining hydrogen will be compressed and delivered by tube trailer to other BOC customers in the area.

[Hydrogenics Order](http://www.arb.ca.gov/msprog/bus/zeb/meetings/meetings.htm): <http://www.arb.ca.gov/msprog/bus/zeb/meetings/meetings.htm>

[BOC](http://www.boc.com): <http://www.boc.com>

8. Legislators Announce H-Prize While Visiting Intelligent Energy

Intelligent Energy's Albuquerque office played host recently to a visit from two leading U.S. politicians: New Mexico Congresswoman Heather Wilson and U.S. Assistant Secretary for the Department of Energy Karen Harbert. Both viewed recent advances by Intelligent Energy in the conversion of fuels such as propane, bio-diesel, bio-ethanol and ammonia into pure hydrogen gas, which can then be used to create electricity and heat via Intelligent Energy's advanced PEM fuel cell technology. The visit was part of a two-day visit to Albuquerque by Asst Secretary of Energy Karen Harbert. During the visit, Congresswoman Wilson announced legislation to establish the "H-Prize": a bill that establishes a prize competition to develop hydrogen energy as a practical alternative to fossil fuel. The bill passed in the U.S. House and is now on its way to the Senate for further action.

[Congressional Visit](http://www.intelligent-energy.com/index_article.asp?SecID=15&secondlevel=798&artid=3780): http://www.intelligent-energy.com/index_article.asp?SecID=15&secondlevel=798&artid=3780

9. HyRadix Awarded Reformer Contract

On June 30, HyRadix, Inc. announced it had been awarded a contract to supply a hydrogen fuel generation system to SunLine Transit Agency, Thousand Palms, CA. The Adeo on-site reformer, which utilizes HyRadix's proprietary autothermal reforming technology, will enable SunLine to meet its plans to increase the size of its hydrogen bus fleet in the coming years. The unit will be delivered and fully operational in July 2006.

[HyRadix](http://www.intelligent-energy.com/index_article.asp?SecID=15&secondlevel=798&artid=3780): http://www.intelligent-energy.com/index_article.asp?SecID=15&secondlevel=798&artid=3780

10. Ford to Begin Production of Hydrogen ICE Shuttles

Ford Motor announced it would begin production of its commercial hydrogen-powered internal combustion engine (HICE) shuttle buses. Eight of the E-450 shuttle buses will go to tourist destinations in Florida; three to California (see #5 above). The 12-passenger shuttle, first introduced at the 2005 North American International Auto Show, is equipped with a 30-gallon equivalent, 5,000 pounds-per-square-inch hydrogen fuel tank supplied by Dynetek. The E-450 is propelled by a re-engineered version of Ford's 6.8-liter V-10 engine.

[Ford HICE Bus](http://www.greencarcongress.com/2006/06/ford_to_begin_p.html): http://www.greencarcongress.com/2006/06/ford_to_begin_p.html

11. Cat Lift Trucks Purchases General Hydrogen Fuel Cell Pack

General Hydrogen Corp., a provider of hydrogen fuel cell power packs as battery replacement technology for electric forklifts and other industrial vehicles, has sold its first commercial Hydricity Pack to Cat Lift Trucks of Houston, TX, to be delivered in July 2006. Cat Lift Trucks will be using the pack in a Class 1 battery-electric forklift. The unit utilizes a Ballard fuel cell, which has been shown to triple the runtime of battery-electric forklifts out to 18 hours compared to conventional lead-acid batteries.

[General Hydrogen](http://www.generalhydrogen.com/news_company.shtml): http://www.generalhydrogen.com/news_company.shtml

12. Michelin Challenge Bibendum 2006 a Major Success

The five-day 2006 Challenge Bibendum (MCB), held in Paris in June, focused entirely on sustainable road mobility. It featured presentations, roundtables, tests, discussions, demonstrations and other initiatives; and involved some 2,500 participants representing 100 manufacturers, NGOs and institutions who learned about the challenges of road mobility, its impact on the environment and technological advances to improve safety. The 06 Bibendum was dedicated to the memory of Edouard Michelin, who actively promoted the event from its creation in 1998 and whose death in a late May boating accident was a tragic loss. (Editor's Note: Edouard Michelin was mightily impressed with the Ballard ZEBus, which won a special award at the 2001 MCB for making the trek from Palm Springs to Las Vegas. He was a true friend to the alternate fuels industry and it is with sadness that we note his passing.)

[Michelin Bibendum:](#)

<http://www.challengebibendum.com/challenge/front/affich.jsp?codeRubrique=43&lang=EN&newsID=17927>

13. Volvo Previews Five-Fuel Vehicle, Including Hythane

At the Michelin Challenge Bibendum 2006 in Paris this past June, Volvo previewed a prototype five-fuel Multi-Fuel vehicle. The new prototype was optimized for running on five fuels: bioethanol E85; methane in the form of either natural gas or bio-methane; gasoline; and a blend of 10% hydrogen, 90% natural gas.

[Five-Fuel Vehicle:](#) http://www.greencarcongress.com/2006/06/volvo_to_previe.html

14. Virent Energy Systems Raises \$7.5 million to Produce H2 from Biomass

Virent Energy Systems, Inc. announced it has raised \$7.5 million in private venture financing led by Cargill Ventures for product development and commercialization of its Aqueous Phase Reforming process (APR). The process offers a cost-effective and thermally efficient method for producing hydrogen, fuel gas, some liquid fuels and high value chemicals using renewable biomass. The company has already demonstrated and sold a system that produces SuperNatural Gas, a mixture of hydrogen and alkanes to fuel internal combustion engines. Investors include Honda Strategic Ventures, Venture Investors and Advantage Capital Partners.

[Virent APR Process:](#) <http://virent.com/>

15. Presentations from the CEC Workshop are Available

Ten presentations from a recent California Energy Commission workshop on the current technical status and commercialization prospects for fuel cells in California may be downloaded from the website. The presentations and panel sessions covered proton exchange membrane, solid oxide, molten carbonate, and phosphoric acid fuel cells.

[Presentations:](#) http://www.energy.ca.gov/pier/conferences+seminars/2006-05-31_fuel_cell_workshop/index.html

16. Hydrogen Incidents Database

The U.S. Department of Energy has sponsored the development of a Hydrogen Incidents Database, intended to facilitate the sharing of lessons learned and other relevant information gained from actual experiences using and working with hydrogen. The database contains over 50 records of events involving either hydrogen or hydrogen-related technologies.

[H2 Incidents:](#) <http://www.h2incidents.org/>

17. EIA Anticipates World Oil Demand to Rise 37% by 2030

World oil demand is predicted to increase 37% from the existing level of 86 million barrels per day (bpd) to 118 bpd in 2030 according to the U.S. Energy Information Administration (EIA). Higher demand is expected to come from Asia, especially India and

China. OPEC's supply share will fall from 39.7% to 38.4% as West Africa and the Caspian increase production. At the same time, oil production in Europe's largest producer, Norway, is expected to decline. Much of the world incremental oil demand is projected for use in the transportation sector. The US will still be the single largest consumer, with the EIA predicting it will consume 27.6 million barrels per day (bpd) up from this year's 20.8 million. Though worldwide oil demand is forecast to increase, the higher price is expected to temper demand and boost the appeal of other sources of energy. Oil represented nearly 38% of the world's total energy consumption in 2003, but is expected to fall to 33% by 2030.

[Oil Demand](http://www.eia.doe.gov/oiaf/ieo/index.html): <http://www.eia.doe.gov/oiaf/ieo/index.html>

18. Mountain Home, Idaho Wind-Power Plant to make Hydrogen

The nation's first commercial plant using wind power to produce hydrogen was unveiled in June in Idaho. Synthetic Energy plans to use a combination of wind power and electricity to produce hydrogen for use in chemical manufacturing and oil and gas refining.

[Wind to H2](#):

<http://www.idahostatesman.com/apps/pbcs.dll/article?AID=/20060610/NEWS02/606100304/1029>

19. Blue Sky Award Nominations Due by September 12, 2006

The Blue Sky Award is an international designation presented each year to companies, organizations or individuals selected for making outstanding contributions to clean air, energy efficiency and to the advanced transportation industry. The advanced transportation technologies consortium, WestStart, and its California operating division, CALSTART, present the Blue Sky Award to formally recognize - and reward - outstanding contributions not only to develop clean vehicles and technologies, but also to actively bring them to the marketplace. The Blue Sky Award is specifically designed to recognize not just leadership and innovation in technology for clean, sustainable transportation, but a significant commitment to its use.

[Blue Sky Nominations](#): <http://www.calstart.org/info/bluesky/index.php?p=news%20>

20. 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>

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

21. 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.

22. 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>

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