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1. Welcome New Members

CHBC extends a warm welcome to our latest new Silver Member: Gas Equipment Systems, Inc., Rancho Cucamonga, CA. We appreciate your support!

[Gas Equipment](http://www.cngfuelsystems.com) <http://www.cngfuelsystems.com>

2. CHBC Oct 25 General Meeting Features Dozen Speakers

John Addison, author of "The Great Fuel Race," joins a dozen other speakers on hydrogen programs and projects at this day-long meeting. Presenters include George Sverdrup, NREL; Dr. Jack Brouwer, National Fuel Cell Research Center; Mickey Oros, Alteryg Systems; Paul Scott, ISE Corp.; Dr. Woodrow Clark, UCLA/UCR; and Andreas Klugescheid, BMW. The full agenda will be posted soon. Thanks to South Coast Air Quality Management District for hosting our meeting!

[Oct 25 Meeting](http://www.californiahydrogen.org/page.cfm?content=45&event_ID=69) http://www.californiahydrogen.org/page.cfm?content=45&event_ID=69

3. ARB Workshop on Hydrogen Production Sept 18-19

Staff from the California Air Resources Board, Sustainable Transportation Technology Branch will hold a public workshop on California Senate Bill 1505 (Statutes of 2006). The workshop will discuss environmental standards for hydrogen production and use in transportation. The workshop will be held in two locations: in Sacramento on September 18 and in El Monte September 19.

[ARB Workshop](http://www.arb.ca.gov/msprog/hydprod/hydprod.htm) <http://www.arb.ca.gov/msprog/hydprod/hydprod.htm>

4. Free Hydrogen-Powered Cars for Good Homes

You still can't walk into a dealership and buy a hydrogen-powered car, but if you live in Orange County, CA, Westchester County, NY, or Washington, D.C., you may be able to borrow one for a couple years. GM's Project Driveway program is now seeking good homes for 100 fuel-cell versions of its Equinox SUV. As with other fuel-cell vehicles, the Chevy Equinox Fuel Cell combines hydrogen and oxygen to generate electricity, with water vapor as the sole by-product -- no smog-forming emissions, no greenhouse gases. Each Equinox stores nine pounds of hydrogen at 10,000 psi; 2.2 pounds contain roughly the energy equivalent of a gallon of gasoline. At 50 mpg, the Equinox will travel about 200 miles on a tank. The car is designed to meet all highway safety standards. GM has yet to decide who will test the vehicles, which cost up to \$1 million to build, but says drivers will pay next to nothing, in exchange for feedback.

[Project Driveway](http://www.popsci.com/popsci/automotivetech/7c338852b7464110vgnvcm1000004eecbccdrcrd.html)

<http://www.popsci.com/popsci/automotivetech/7c338852b7464110vgnvcm1000004eecbccdrcrd.html>

[Interested?](http://www.chevrolet.com/fuelcell) <http://www.chevrolet.com/fuelcell>

5. First Americans Drive BMW Hydrogen 7 on US Roadways

After completing an eight-week test on the BMW Hydrogen 7 with NASA personnel, BMW handed over the keys of a BMW Hydrogen 7 -- the first hydrogen-powered luxury sedan -- to Hollywood actor Will Ferrell. BMW simultaneously announced the launch of the Hydrogen 7 Pioneer Program, through which BMW will give industry leaders and prominent figures in entertainment, politics, business and more a BMW Hydrogen 7 for their daily use. BMW underscores the fact that the BMW Hydrogen 7 is not a concept car, but a production model vehicle that has successfully completed the entire Product Development Process, meeting all the standards necessary for driving on U.S. roadways. During the program, 25 of the 100 cars that are produced will be used in evaluation programs in the US.

[BMW](http://www.earthtimes.org/articles/show/news_press_release,161299.shtml) http://www.earthtimes.org/articles/show/news_press_release,161299.shtml

[BMW - NASA](http://www.freep.com/apps/pbcs.dll/article?AID=/20070812/BUSINESS01/708120594/1014)

<http://www.freep.com/apps/pbcs.dll/article?AID=/20070812/BUSINESS01/708120594/1014>

6. Ford and Ballard Run First 200+ MPH Fuel Cell Sedan

Ford's latest better idea is the world's fastest fuel-cell-powered car based on a production model. The Ford Fusion Hydrogen 999, with fuel cells developed by Ballard Power Systems Inc., was clocked at 207.297 miles per hour at the Bonneville Salt Flats recently. As the world's first production-vehicle-based fuel-cell race car, it is based on Ford's mid-sized sedan, elaborated on by Ford engineers and assembled by performance-car developer Roush Industries. Its electric motor draws on 400 kilowatts worth of Ballard fuel cells. Rick Byrnes, a veteran Bonneville racer, drove the Fusion Hydrogen 999 on its record run. "We established this project to advance fuel-cell-powered vehicles and to do what has never been done before, and we did it," said Gerhard Schmidt, Ford's vice-president of research and advanced engineering.

[Ford](http://www.canadaeast.com/business/article/51128) <http://www.canadaeast.com/business/article/51128>

7. Honda FCX at 11th Hour Premiere

At the much anticipated premiere of Leonardo DiCaprio's "The 11th Hour," many of Los Angeles' best known greenies showed up. Among them was 'Ecorazzi' favorite Q'Orianka Kilcher, who took time out of her Amazon-saving activities to support DiCaprio. She arrived in her Honda FCX hydrogen vehicle.

[Honda](http://www.ecorazzi.com/?p=3566) <http://www.ecorazzi.com/?p=3566>

[11th Hour](http://wip.warnerbros.com/11thhour/) <http://wip.warnerbros.com/11thhour/>

8. GM Prepares FC Technology for Future Production

General Motors Corp. is moving more than 500 fuel cell experts from advanced development laboratories to core engineering functions to prepare this technology for future production. More than 400 fuel cell engineers will report to GM's Powertrain Group to begin production engineering of fuel cell systems. Another 100 will transfer to GM's Global Product Development organization to start integrating fuel cells into future company vehicles. Finally, more than 150 fuel cell scientists and program support will remain as part of GM's Research and Development center to continue advanced research in hydrogen storage, fuel cells and program commercialization. The transition is aimed at expediting the company's efforts to produce vehicles that displace petroleum through energy diversity.

[GM](#)

<http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/viewmonthlyreleasedetail.do?domain=74&docid=37088>

9. Burbank Zero Emission Bus Project

Thanks to the unique collaborative efforts of several agencies and businesses, Burbank will soon be the home of California's first Hydrogen Fuel Cell Plug-In Hybrid Electric Bus Demonstration Project. Project partners include the California Air Resources Board (ARB), the California Energy Commission, the City of Burbank, Federal Transit Administration, Hydrogenics, Martin Marietta Composites, Mobile Energy Solutions (MES) and the Burbank Transportation Management Organization. Over the next 12 months, MES will be assembling the 35 foot long, 37 passenger bus. The light weight composite body bus will house two Hydrogenics 16kW fuel cell modules and lithium titanate batteries. The on-board storage tanks provide hydrogen to the fuel cells which produce electricity. This electricity energizes the batteries that power the bus.

[MES - Hydrogenics](http://www.mesbus.com/newsReleases.html) <http://www.mesbus.com/newsReleases.html>

10. White Plains: Hydrogen Fuel Vehicles

By mid-September, three cars and two pickup trucks powered by hydrogen will be added to the White Plains, NY fleet. The vehicles will hit the road after Shell Hydrogen completes a hydrogen fuel plant at a city-owned garage. The hydrogen fuel depot will extract hydrogen from water, producing what would be the equivalent of up to about 40 gallons of gas a day. The vehicles are funded by grants from Shell and two state authorities that promote alternative fuels, and cost a total of \$705,000. The cars and one of the pickups will run completely on hydrogen, and the second pickup will run on a blend of hydrogen and natural gas that also will be produced at the city garage.

[Shell H2](http://www.forbes.com/feeds/ap/2007/08/20/ap4036385.html) <http://www.forbes.com/feeds/ap/2007/08/20/ap4036385.html>

11. Hydrogen Engine Center Receives Order for UNIDO Program

Hydrogen Engine Center, Inc., a designer, manufacturer and distributor of alternative-fueled internal combustion engines and distributed power generation equipment, recently announced it has received an order for two hydrogen-fueled, V-8 Oxx Power(TM) engines in support of the International Centre for Hydrogen Energy Technology/UNIDO (United Nations Industrial Development Organization) hydrogen development program in Istanbul, Turkey. "Our engines are expected to be integrated into the water taxi fleet in Istanbul, bringing emission-free fuel for taxis operating in that busy port," stated Joe Lewis, Vice President of Engine Sales at HEC. The engines to be delivered under this purchase order will be specially outfitted for marine use.

[UNIDO](#)

http://home.businesswire.com/portal/site/google/index.jsp?ndmViewId=news_view&newsId=20070822005279&newsLang=en

12. Revolution in Solar Hydrogen on the Horizon

The prospect for the widespread use of hydrogen as a portable energy carrier is dependent on finding a clean, renewable method of production. At Penn State University, a research group headed by professor of electrical engineering Craig Grimes in the Materials Research Institute is "only a couple of problems away" from developing an inexpensive and easily scalable technique for water photoelectrolysis -- the splitting of water into hydrogen and oxygen using light energy -- that could help power the proposed hydrogen economy. Most current methods of hydrogen production reform hydrogen from natural gas in a process that produces climate changing greenhouse gas while consuming a nonrenewable resource. A more environmentally friendly approach would produce hydrogen from water using the renewable energy of sunlight.

[Solar H2](http://www.newswise.com/articles/view/532486/) <http://www.newswise.com/articles/view/532486/>

13. Air Products Awarded \$5.6 Million U.S. Navy R&D Contract for H2 Fork Lifts

Air Products & Chemicals, Inc., Allentown, PA, is being awarded a \$5,608,817 cost share contract for a research and development effort for hydrogen-fueled material handling equipment. Work will be performed in Susquehanna, PA and is expected to be completed by September 2010. The Naval Surface Warfare Center, Crane Division, Crane, IN, is the contracting activity.

[APCI](http://www.fuelcellsworks.com/Suppage7690.html) <http://www.fuelcellsworks.com/Suppage7690.html>

14. Fujitsu Becomes First Silicon Valley Firm to Install H2 Fuel Cell Power

In August, Fujitsu America, Inc. dedicated a hydrogen fuel cell on its Sunnyvale campus. The fuel cell provides clean, efficient power for the campus data center and other operations, significantly reducing carbon dioxide (CO2) emissions. The hydrogen fuel cell will provide 50 percent of the power needed to cool the Fujitsu Sunnyvale campus data center and labs. According to the EPA, data centers across the U.S. consumed about 61 billion kilowatt-hours (kWh) in 2006, roughly 1.5 percent of the total U.S. electricity consumption, and based on current trends, consumption is expected to double by 2011. The fossil fuel-burning power plants used to generate this electricity release more than 40 percent of the total U.S. CO2 emissions, a prime contributor to global warming.

[Fujitsu](http://www.fujitsu.com/us/news/pr/20070817-01.html) <http://www.fujitsu.com/us/news/pr/20070817-01.html>

15. Millennium Cell and Horizon Fuel Cell Enter into Strategic Relationship

Millennium Cell Inc. announced it has executed a joint development and licensing agreement with Horizon Fuel Cell Technologies focused on the commercialization of fuel cell based power products that provide over 20 watts of power. Horizon, a Singapore-based company with operations in China, is a developer of commercial-grade, cost-competitive hydrogen fuel cell solutions targeting a number of high volume markets. As part of this new relationship, Horizon licensed Millennium Cell's Hydrogen on Demand(R) technology for the purpose of co-developing compatible hydrogen fuel cartridges for the next wave of Horizon fuel cell products set to hit the market in 2008. The first of a series of new Horizon fuel cell products is a 50W emergency power unit designed to support disaster relief professionals, enable communication during black-outs, and provide recreational power in remote environments. Horizon brought fuel cell technology to the general public with the launch of a miniature hydrogen fuel cell car in 2006, the world's first consumer fuel cell product that was selected by Time Magazine as a "Best Invention of 2006."

[Millennium Cell - Horizon](#)

<http://www.millenniumcell.com/fw/main/default.asp?DocID=92&reqid=1040161>

16. HPI Announces Letter of Intent With Hamilton Sundstrand

Hydrogen Power Inc. (HPI) , a development stage hydrogen generation company, announced it has signed a Letter of Intent with Hamilton Sundstrand, a subsidiary of United Technologies Corp., to further develop and market HPI's technology for U.S. government, foreign government and commercial customer applications. Under the direction of Hamilton Sundstrand, the two firms will evaluate the use of HPI's unique aluminum fuel technology to meet the power requirements of certain high priority applications, including unmanned underwater vehicles (UUVs), torpedoes, and man-portable systems.

[HPI-Hamilton Sundstrand](#)

<http://money.cnn.com/news/newsfeeds/articles/prnewswire/AQW01215082007-1.htm>

17. American Hydrogen Gains Rights to University Fuel Research

An Ohio University researcher has figured out how to produce hydrogen fuel inexpensively. Now she and the university have signed an agreement to license her technology to a corporation that will take it to the marketplace. The company, American Hydrogen Corp., also has set up offices in Athens at the Ohio University Innovation Center. The license agreement grants American Hydrogen, a wholly owned subsidiary of Houston, Texas-based American Security Resources Corp., exclusive worldwide rights to commercialize the technology. Gerardine Botte, associate professor of chemical and biomolecular engineering in the Russ College of Engineering and Technology, has developed the patent-pending ammonia catalytic electrolyzer technology, which efficiently converts ammonia into hydrogen to produce inexpensive fuel.

[American Hydrogen](#) <http://www.energydigital.net/NewsArticle.aspx?articleid=1899>

18. Pellets of Power Designed to Deliver Hydrogen

Hydrogen may prove to be the fuel of the future in powering the efficient, eco-friendly fuel cell vehicles of tomorrow. Developing a method to safely store, dispense and easily refuel the vehicle's storage material with hydrogen has baffled researchers for years. However, a new and attractive storage medium being developed by Pacific Northwest National Laboratory scientists may provide the power of pellets to fuel future transportation needs. The Department of Energy's Chemical Hydrogen Storage Center of Excellence is investigating a hydrogen storage medium that holds promise in meeting long-term targets for transportation use. As part of the center, PNNL scientists are using solid ammonia borane, or AB, compressed into small pellets to serve as a hydrogen storage material. Each milliliter of AB weighs about three-quarters of a gram and harbors up to 1.8 liters of hydrogen. Researchers expect that a fuel system using small AB pellets will occupy less space and be lighter in weight than systems using pressurized hydrogen gas, thus enabling fuel cell vehicles to have room, range and performance comparable to today's automobiles.

[Pellets](#) http://www.eurekalert.org/pub_releases/2007-08/dnnl-pop081307.php

19. EU Study: Importing Hydrogen From Abroad

Is it economically viable and sustainable to produce hydrogen outside the EU and import it over very long distances to consumers in the Union? The answer is yes, according to ENCOURGAE, an EU-funded project. The project analyzed the production potential of hydrogen centers outside EU that focus on clean sources or renewable energy. The study found that together, the production centers could meet Europe's total hydrogen need. But these production sources can lead to high transportation costs, compression costs at filling stations and further carbon emissions for fossil fuel based paths, which need to be assessed globally. To lower costs, the study recommends considering only large-scale solutions. Geothermal power from Iceland offers the cheapest hydrogen and the lowest barriers with

respect to competing alternative use of it, followed by hydrogen from hydropower in Norway and Romania.

[EU Study](#)

http://cordis.europa.eu/fetch?CALLER=EN_NEWS&ACTION=D&SESSION=&RCN=28135

20. NASA Issues Constellation Ares Enviro-Impact Estimate

NASA's plans for the system which will replace the Space Shuttle continue to move forward. Recently, the space agency inked a deal for solid-fuelled test rockets. Now it has issued an assessment of the environmental impact which will result from the entire "Constellation" program. The Ares rockets are to use a lot of liquid hydrogen-oxygen engines, including modernised J-2X versions of the old J-2s from the Apollo programme's iconic Saturn Vs of the 1960s and 70s. Hydrogen-oxygen rocket exhaust is mostly water vapour - clouds. It has a small molecular hydrogen component which can cause relatively minor ozone-layer damage, but overall hydrogen-oxygen rockets are some of the most environmentally friendly transport in existence.

[NASA](#) http://www.theregister.co.uk/2007/08/16/nasa_constellation_pollution/

21. Cal-Start Blue Sky Winners Honored Sept 6

Navistar International Corp. won the overall Blue Sky Award for its market launch of hybrid trucks. The Blue Sky Leadership Award posthumously honors the late Edouard Michelin for his creation of the annual Challenge Bibendum vehicle efficiency competitions. The Blue Sky Innovation Award highlights major climate change and port policies of the two San Pedro Ports and their leaders, James Hankla of the Port of Long Beach and David Freeman of the Port of Los Angeles, for their unprecedented work together and with their organizations to create and implement the San Pedro Bay Ports Clean Air Action Plan. The Innovation Award also went to the Governor of California, Arnold Schwarzenegger, and California Assembly Speaker, Fabian Nunez, for their passage of landmark legislation AB32: The California Global Warming Solutions Act. Merit Awards went to gas, electric and biofuel leaders Cummins Westport, GEM, and Khosla Ventures. Award winners will formally receive their 2007 Blue Sky Awards(TM) at a gala luncheon to be held September 6, 2007 at the elegant Athenaeum Club on the campus of Caltech in Pasadena, CA.

[Blue Sky](#) http://www.calstart.org/dailynewsnotes/daily_nns_detail.php?id=9140

22. Hydrogen Uses in the Military, Oct 2-4

The National Hydrogen Association's Fall 2007 Topical Forum, "Hydrogen Uses in the Military," will be held October 2-4 in Columbia, SC, and will feature participants from the U.S. Department of Defense and the hydrogen industry. The forum seeks to address the gap between Technical Readiness Levels and Manufacturing Readiness Levels. This forum provides a unique opportunity to help shape manufacturing readiness protocols for hydrogen and fuel cell technologies. CHBC member-sponsors include Air Products, Hydrogenics and Shell Hydrogen.

[NHA Forum](#) <http://www.hydrogenforums.org/07Military/registration.asp>

23. Send Us Your News!

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.

[FuelCell Markets](#) <http://www.fuelcellmarkets.com>

[Clean Fleet Report](#) <http://www.cleanfleetreport.com>

24. Membership Benefits

Platinum membership, \$5,000 per year, includes your logo on each page of the CHBC website for one year, your firm credited as sponsor of two General Meetings, and two free registrations at each CHBC meeting for 12 months. Gold membership, \$2,500, includes your firm credited as a sponsor of one General Meeting during the year and one free registration to each CHBC General meeting for one year. Thanks to Gold Members Boeing Corp and Hydrogenics for their support! Silver membership is the buy of the century at \$1,000; Individual membership is \$200. Please see <http://www.californiahydrogen.org/page.cfm?content=12> for full details. 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. Board of Directors

President - Henry Wedaa; Vice President - Paul Scott, ScD; Managing Director - Catherine Rips; Secretary - Josh Mauzey; Treasurer - Jerald Cole; Membership Chairman - Mark Abramowitz; Fleets Chair - John Addison; Program Chairman - Henry Wedaa; Director at Large - Larry Watkins; Director at Large - John Williams, PE; Director at Large - Allan Bedwell; Director at Large - Fred Silver; Ex-officio Government Liaison - Analisa Bevan. To contact the board, please email: info@californiahydrogen.org.

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