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1. Welcome New Members!

CHBC extends a warm welcome to four new members: John Cornish, EPC; Wally Dubno, Quantum Technologies; Seth Jacobson, Palmer Capital; and Jordan McRobie, California Fuel Cell Partnership. We appreciate your support!

2. 2009 Officers and Board

CHBC members have approved the new slate of officers for 2009. We welcome three new members to the board: JJ Weston, executive director, Burbank TMO; Richard Cromwell III, clean fuels consultant; and Debbie Smith, VP, National Hydrogen Association. The new board and officers are as follows: President, Paul Scott, ScD; Vice President, Mark Abramowitz; Treasurer, Josh Mauzey; Secretary: JJ Weston; Past President, Hank Wedaa; Managing Director, Catherine

Rips; Membership Chair, Richard Cromwell III; Program Chair, Fred Silver; Directors at Large, Larry Watkins, Debbie Smith.

3. ARB Says Yes to Climate Action Plan

The California Air Resources Board approved the state's plan to reduce its greenhouse gas emissions to 1990 levels by 2020. Development of the Scoping Plan is a central requirement of AB32, the Global Warming Solutions Act of 2006 (Nunez, Pavley). The plan is built on the principle that a balanced mix of strategies is the best way to cut emissions by approximately 30 percent, and grow the economy in a clean and sustainable direction. An important component of the plan is a cap-and-trade program covering 85 percent of the state's emissions. This program will be developed in conjunction with the Western Climate Initiative, comprised of seven states and four Canadian provinces that have committed to cap their emissions and create a regional carbon market.

[ARB](http://www.arb.ca.gov/newsrel/nr121108.htm): <http://www.arb.ca.gov/newsrel/nr121108.htm>

4. Fuel Cell Industry Asks for Stimulus Package

The U.S. Fuel Cell Council is calling on the Obama Administration to plough \$1.2 billion into a stimulus package for fuel cells. Congress can dramatically accelerate deployment of a clean, homegrown, U.S. manufactured green energy technology, create an estimated 24,000 jobs and fight global climate change, simply by taking advantage of federal laws already on the books. Fully funding EPACK programs at levels Congress has already approved for FY2010 and use of other authorized funds will invest \$1.2 billion in fuel cells, hydrogen and infrastructure. This investment will put hundreds of fuel cell vehicles and up to 100MW of fuel cell power into customers' hands, reap efficiency, environmental and security benefits and create green jobs and high-tech manufacturing capacity for the American economy.

[Stimulus](http://www.energyefficiencynews.com/i/1721/): <http://www.energyefficiencynews.com/i/1721/>

[USFCC](http://www.usfcc.com/Fuel_Cell%20Stimulus_12.18.08.pdf): http://www.usfcc.com/Fuel_Cell%20Stimulus_12.18.08.pdf

5. Proposals for Hydrogen Highway Funds Due Jan 30

The California Air Resources Board (ARB) has announced that Grant Solicitation 08-606, California Hydrogen Highway Network, Modular Fueling Stations has been posted on the California Hydrogen Highway website. Please note in the Key Action Dates on page 6 that the timeline has been compressed significantly. ARB is seeking qualified teams to design, secure permits, build, maintain and operate hydrogen refueling stations to serve as part of California's Hydrogen Highway Network. Available funding is approximately \$7 million.

[Funding](http://hydrogenhighway.ca.gov/policy_funding/policy_funding.htm): http://hydrogenhighway.ca.gov/policy_funding/policy_funding.htm

6. Jan 20 Deadline for ARB Research Concepts

The California Air Resources Board (ARB) is soliciting research concepts for the Board's 2009-2010 Annual Research Plan. General areas of research include: Agriculture; Health and Exposure; Emissions, Transport, and Transformation; Technology Advancement and Pollution Prevention; and Global Climate Change. Click the link below to see the program announcement and/or submit a research concept. The deadline for submitting research concepts is January 20, 2009. Additional information on the Board's Research Program can be found at the second link

below.

[Announcement](http://www.arb.ca.gov/research/apr/plan/concepts/concepts09-10.htm): <http://www.arb.ca.gov/research/apr/plan/concepts/concepts09-10.htm>

[Program](http://www.arb.ca.gov/research/apr/apr.htm): <http://www.arb.ca.gov/research/apr/apr.htm>

7. BMW Official Limousine for UN Climate Change Conference

A total of 21 BMW Hydrogen 7 hydrogen-powered cars provided the official shuttle service at the recently held UN climate change conference COP 14 in Poznan, Poland. In addition, the BMW Group presented a pair of electrically-driven MINI E cars at the event. The BMW Group used the two innovative models to showcase sustainable mobility of the future. The delegates in Poznan enjoyed familiar reliability and comfort in the fleet of 21 BMW Hydrogen 7 official shuttle vehicles at the summit, with an extra dose of environment-friendliness. The BMW Hydrogen 7 has already furnished evidence of its everyday practicality in countries around the world. One hundred units of the car have racked up more than 3.5 million kilometres worldwide since the launch of the hydrogen fleet in late 2006.

[BMW](#):

http://news.infibeam.com/blog/news/2008/12/13/bmw_as_official_limousine_for_un_climate_change_conference.html

8. Honda FCX Clarity First Pace Car in Rose Bowl Parade

Honda is going big to welcome in the new year at the Rose Bowl Parade. Earlier this month, the Japanese automaker unveiled a float featuring a 49-foot replica of Honda's ASIMO (Advanced Step in Innovative Mobility) humanoid robot for the New Year's Day parade in Pasadena, CA. In front of millions of viewers on January 1, Honda's float will evolve from an opening ceremony stage into an animated replica of ASIMO, standing about 12 times the height of the actual humanoid robot. The float kicks off Honda's celebration of its 50th anniversary of U.S. operations. The company's FCX Clarity will also become the first-ever hydrogen-powered fuel cell pace car to lead the parade. Honda is one of the parade's longest-running corporate sponsors and its entries have captured major awards 13 of the past 14 years.

[Honda](#): <http://www.wsbtv.com/nationalnews/18352502/detail.html>

9. Mercedes Production FCV Arrives in '09; Concept Debuts in Detroit

Mercedes-Benz will have a fuel-cell powered vehicle in small scale production in 2009 and will follow with battery-electric drive in 2010, according to Dr. Thomas Weber, a member of the Daimler AG board responsible for corporate research and development at Mercedes-Benz Cars. "The modified sandwich-floor platform provides the perfect basis for a wide model range with electric drive systems," says Weber. The basis for the new models will be shown at the North American International Auto Show in Detroit in January in three concept vehicles, the BlueZERO E-CELL (all-electric), the BlueZERO F-CELL (fuel cell) and BlueZERO E-CELL PLUS (electric with gasoline-engine "range extender").

[Mercedes](#): <http://www.examiner.com/x-572-Auto-Review-Examiner~y2008m12d15-Mercedes-production-fuelcell-arrives-in-09-MB-BlueZERO-concept-debuts-in-Detroit>

10. Chevrolet Equinox Fuel Cells Reach Big Milestones

Chevrolet's Project Driveway program - the largest endeavor to put fuel cell vehicles on real

roads - has reached several important milestones. According to Chevrolet Vice President and General Manager Ed Peper, GM now has more than 100 vehicles out on the road and logged 500,000 miles of fuel cell driving as of December 25. The Project Driveway program began in October 2007 and will run through the end of 2010. More than 3,400 individuals have driven the fuel cell Equinox either in short drives at media programs or special events, or as part of a longer loan. Drivers generally have the vehicles for two months, although some placements, such as those with business partners Disney and Virgin Atlantic, run for the entire program. Jay Leno has been driving a fuel cell Equinox since April.

[Project Driveway:](#)

<http://www.streetinsider.com/Press+Releases/Chevrolet+Equinox+Fuel+Cells+Reach+Big+Miles+tones/4260308.html>

11. Burbank To Test Plug-In Hybrid Hydrogen Bus

BurbankBus will be one of the first U.S. transit agencies to test the new Proterra HFC35 hydrogen fuel-cell powered bus. Developed in Colorado, the 37-passenger, 35-foot transit bus integrates a pair of 16kW Hydrogenic fuel cell stacks designed to recharge the vehicle's TerraVolt(TM) battery pack, the primary energy source for the bus. Similar in concept to the Chevy Volt, the HFC35 runs initially on grid-generated electricity that is stored in the pack during overnight charging. Once the energy in the pack is depleted, the fuel cells will recharge it. Proterra calculates that because the bus is twice as energy efficient as a diesel version, operators could realize fuel savings of \$350,000 annually, depending on the price of diesel fuel and hydrogen. Burbank's bus will be inaugurated into operational service Spring of 2009.

[BurbankBus:](#) <http://evworld.com/news.cfm?newsid=19983>

[Hydrogenics:](#) <http://www.hydrogenics.com>

12. Program Advancing for Olympic Fuel Cell Bus

Ballard Power Systems has announced that the pre-production fuel cell bus, manufactured by the New Flyer Industries Canada ULC, ISE Corp. and Ballard consortium, successfully completed its field trial and Notice to Proceed has now been authorized for manufacture of 20 fuel cell buses for BC Transit's hydrogen fuel cell demonstration fleet. Ballard will begin delivery of its HD6 fuel cell bus modules in December 2008 with the remaining modules delivered through mid-2009. During the evaluation period, the pre-production bus operated up to 16 hours per day in Victoria and Whistler, and accumulated over 575 hours of on-road testing. The fuel cell buses have a driving range of approximately 450 kilometers along with an electrical efficiency of 57% at rated power, more than double the efficiency of an internal combustion engine.

[Ballard:](#) <http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=irol-newsArticle&ID=1237962&highlight=>

13. NREL Publishes Report on Fuel Cell Buses in US

The National Renewable Energy Laboratory (NREL) has recently published a report on fuel cell buses in the United States. This report, which is an update to one published last year, reviews fuel cell bus technology development and demonstration, specifically focusing on experiences and progress in the United States. This review encompasses results from the U.S. Dept. of Energy/NREL fuel cell bus evaluations as well as plans for the U.S. Federal Transit

Administration's National Fuel Cell Bus Program. The primary focus is on descriptive comparisons of fuel cell transit bus operation in the United States and on industry's need to continue successful implementations of these advanced technologies. The report summarizes the most recent year of data at AC Transit, CTTransit and SunLine Transit Agency.

[Report:](http://www.nrel.gov/hydrogen/pdfs/tp44133.pdf) <http://www.nrel.gov/hydrogen/pdfs/tp44133.pdf>

14. IOC to Start India's First Hydrogen Fuel Pump

Indian Oil Corp. (IOC), will start the country's first hydrogen fuel-dispensing station in New Delhi next month. The new-age pump will be installed in Dwarka. Other fossil fuels like petrol, diesel and CNG are derived from raw materials such as crude oil or gas, and generally imported; the hydrogen fuel to be dispensed at this pump will use atmospheric air to synthesize pure hydrogen, which will be used to fuel vehicles. The company said that the fuel pump will be installed at a cost of Rs 5 billion, with the ministry of new and renewable energy and the ministry of petroleum and natural gas funding the project in equal measure.

[India:](#)

<http://www.myiris.com/newsCentre/newsPopup.php?fileR=20081223080959203&dir=2008/12/23&secID=livenews>

15. Hydrogen 'Balls': A Safe Fuel of the Future?

The car of the future could be powered by small "ping-pong balls" filled with hydrogen gas. This is what Swedish astronautics professor and inventor Lars Stenmark of the Materials Science Dept., Angstrom Laboratory, Uppsala University, envisions for a green future. By storing hydrogen gas in small balls, Stenmark hopes to overcome the risk of fires and explosions. "By storing the gas in round, spherical form, it can withstand twice the pressure that a cylindrical form can. If the car crashes and the tank breaks, the hydrogen-filled balls would just spread out and roll away, and the gas from any broken balls would simply seep out and disappear into the atmosphere without causing harm," he says. This is one of many cutting edge energy research projects undertaken by faculty at Uppsala.

[Hydrogen Balls:](#)

http://timesofindia.indiatimes.com/HealthSci/Hydrogen_balls_Safe_fuel_of_future/articleshow/3830491.cms

16. Air Products to Supply Hydrogen and Infrastructure at Illinois Center

Environmentally cleaner, more energy efficient, and providing enhanced operational performance on the job 24/7 is how users of hydrogen powered forklifts and materials handling equipment describe the new warehouse workhorse. Air Products will install indoor hydrogen fueling infrastructure to fill a fleet of over 200 fuel cell powered lift trucks that will operate at Central Grocers' new distribution center in Joliet, IL. The new distribution center is expected to be operational by the end of the first quarter of 2009. Air Products' indoor hydrogen fueling dispenser and related infrastructure will fuel the fleet of new lift trucks supplied by Yale Equipment Services and fitted with Plug Power's GenDrive(TM) hydrogen fuel cell power packs.

[Forklifts:](#)

<http://www.airproducts.com/PressRoom/CompanyNews/Archived/2008/11Dec2008.htm>

17. UCSD Adds Power Storage to Fuel Cell Project

The University of California, San Diego (UCSD) plans to store power produced at night from a planned 2.8 megawatt "green" fuel cell and use the energy during peak-demand hours the following day when electricity rates are highest. Implementation of the advanced energy storage system at UCSD was made possible by the November 21 approval by the California Public Utility Commission (CPUC) of a measure designed to lower peak demands on the state's electrical power grid. Under the CPUC order, the UCSD power-storage system would be eligible for \$3.4 million in financial incentives. A formula of incentives encourages non-utility operators of fuel cells and small wind turbines of 5 megawatts or less to couple those systems to energy storage technologies.

[UCSD](http://www.delmartimes.net/news/251562-ucsd-adds-power-storage-to-fuel-cell-project): <http://www.delmartimes.net/news/251562-ucsd-adds-power-storage-to-fuel-cell-project>

18. Battery Charger Gets Going on Dash of H2O

For troops in isolated areas with no access to traditional sources of power regeneration, ongoing research by Ultralife Corp in conjunction with Lynntech Inc. and the Army's Communications-Electronic Research, Development and Engineering Center is providing an answer. They have just completed a 12-month milestone and scheduled delivery of a fuel cell charger that is energized by water. Designed as a complement to other renewable energy systems, such as solar and wind power, the MRC-201 fuel-cell charger runs on cartridges that contain sodium borohydride that mixed with water, generate hydrogen, which when consumed by the fuel cell, generates electricity. Further testing at a CERDEC facility at Aberdeen Proving Ground, Md., is under way.

[Battery Charger](#):

<http://www.nationaldefensemagazine.org/archive/2009/January/Pages/BatteryChargerGetsGoingonDashofH2O.aspx>

19. ISE Corp Named Clean Technology Winner at AeA High Tech Awards

ISE Corp. was selected as winner of the Clean Technology award at the American Electronics Association's (AeA) 15th Annual High Tech Awards by the San Diego chapter of the AeA, the nation's largest high-tech industry association. On October 31st the AeA recognized local technology companies for their achievements in technological innovation, civic contributions and industry accomplishments. This year marked the 15th anniversary of the San Diego High Tech Awards. More than 500 technology executives, including AeA members and non-members, came together to recognize the successes of local technology companies from a diverse set of categories, which included many first time nominees, demonstrating the growth and strength of the technology cluster in San Diego.

[ISE Corp](#): http://www.isecorp.com/ise_news/ise_press_releases/dec-8-2008-AeA_Winner.php

20. International Hydrogen Energy Association Reaches Key Emerging Markets

The Partnership for Advancing the Transition to Hydrogen (PATH), an international coalition of national hydrogen associations, will now represent the emerging economies of China and Malaysia, adding to the gains the hydrogen industry has made globally throughout 2008. Officially joining PATH at the close of the Shanghai Hydrogen and Fuel Cell Expo, the China

Association for Hydrogen Energy (CAHE) and the University of Technology Malaysia bring PATH's membership to 16 countries. Jeffrey Serfass, President of PATH, said "our network in some of the world's largest emerging markets for zero-emissions energy technologies improves the work that we do: producing educational, research, and business resources that each member association can use to help their own member companies lead successful outreach and business development projects within their counties and across borders.

[IHEA](http://www.renewableenergyworld.com/rea/partner/story?id=54350): <http://www.renewableenergyworld.com/rea/partner/story?id=54350>

21. Target 2030: Energy and Climate Future Conference Jan 14-15, Sacramento

Organized by CALSTART, this timely symposium of policymakers and industry leaders will identify, outline and discuss innovative new solutions to address California's transportation-related energy, climate and air quality challenges. Target 2030 will present an unparalleled opportunity to meet with state leaders and explore new policies, technologies and partnerships that can address California's transportation energy and climate needs. Experts from automotive, transit, land-use planning, fuel providers, and environmental leaders will take part in outlining the issues and seeking new collaborative and long-term approaches to change. California Hydrogen Business Council is a Support Sponsor of this important event.

[CalStart 2030](http://www.calstart.org): <http://www.calstart.org>

22. International Colloquium on Environmentally Preferred Advanced Power Generation

Now in its ninth year, the International Colloquium on Environmentally Preferred Advanced Power Generation (ICEPAG) is a three-day colloquium that addresses advanced central power and advanced distributed generation technologies. The conference, titled "Advanced Power Generation: 1 Megawatt to 1,000 Megawatts," will be held February 10-12, 2009 in Laguna, CA. The event is organized by the National Fuel Cell Research Center and the Advanced Power and Energy Program at the University of California, Irvine in collaboration with the U.S. Dept. of Energy; the European Union; the United Nations; the Pacific Rim Consortium on Energy, Combustion, and the Environment; and the American Society of Mechanical Engineers. It is sponsored by the U.S. Dept. of Energy.

[ICEPAG](http://www.apec.uci.edu/icepag2009/): <http://www.apec.uci.edu/icepag2009/>

23. Clean Heavy Duty Vehicle Conference & Expo Mar 16-18

Join government policy makers and regulators, medium and heavy duty vehicle OEMs and suppliers, technology developers, fleet users and clean fuel providers at the 2009 Clean Heavy Duty Vehicle Conference & Expo in Long Beach. This timely national conference will provide a range of solutions for fuel efficiency and emission challenges. Highlights include special clean product briefings from the OEMs; the latest update on policies affecting the industry and fleet operations; sessions on clean technologies and fuels, vehicle efficiency improvements, energy storage advancements; and a value added fleet workshop on ways to lower carbon footprints. To exhibit, sponsor, participate in the ride and drive and register go to www.calstart.org or contact Betsey Brown, event coordinator, 626-744-5632.

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

24. Membership Has Its 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. Silver membership is the buy of the century at \$1,000 and offers excellent publicity opportunities, discounted registrations and more. 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>

Silver Members: <http://www.californiahydrogen.org/page.cfm?content=33>

25. 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.

[Click Here](#) to unsubscribe.

Catherine Rips, Editor/Publisher

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