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1. Welcome New Members

CHBC extends a warm welcome to new Silver member the California Energy Commission and new Individual members Doug Grandy, DG Technologies; Catherine Dunwoody, California Fuel Cell Partnership; and Bill Elrick, California Fuel Cell Partnership. We appreciate your support!

[CEC](http://www.energy.ca.gov): <http://www.energy.ca.gov>

2. CHBC Legislative Outreach Event

May 28, California Hydrogen Business Council, in conjunction with Energy Independence Now (EIN), hosted a day of legislative outreach/education highlighted by visits to 14 legislators' offices and a Ride N Drive presented by the California Fuel Cell Partnership (CaFCP). Among those to visit the Ride N Drive area was a delegation from the U.S. Department of Transportation. Many thanks go to the event's sponsors: Air Products, California Air Resources Board, CaFCP, Center for Energy Efficiency and Renewable Technologies, Coalition for Clean Air, California Hydrogen Highway, GM, Honda, EIN,

Hydrogenics, Intelligent Energy; to all those who participated and to EIN's Daniel Emmett and Wendy James for their help in coordinating the myriad details.

3. DOE Offers \$130 Million to Advance Fuel Cell Technology

DOE issued two Funding Opportunity Announcements (FOAs) on May 27 that offer up to \$130 million over 3 years for research and development (R&D) of fuel cells for automotive, stationary, and portable power applications. DOE is also seeking proposals to demonstrate fuel cells in distributed energy systems and to launch market transformation efforts that provide real-world operation data. The agency plans to select up to 50 projects through this competitive funding opportunity, which is open to industry, universities, and national laboratories. With a minimum 20% private-sector cost share for the R&D projects and a minimum 50% cost share for the demonstration projects, the total DOE and private sector investment in fuel cell technologies under the FOAs may exceed \$170 million, although the future DOE funding is subject to congressional appropriations. Applications are due by August 27, and separate FOAs were issued for national laboratories and other applicants.
[DOE Funding](http://www.eere.energy.gov/news/enn.cfm): <http://www.eere.energy.gov/news/enn.cfm>

4. Sept. 12-16: Sequential Meeting CHBC and CAPCOA's Future is Green Expo & Conference

Double Your Value! On Friday, September 12, California Hydrogen Business Council will present an all day General Conference in Diamond Bar hosted by South Coast Air Quality Management District (AQMD). Sunday through Tuesday, September 14-16, CHBC will be a support sponsor of The Future is Green Conference and Expo in Long Beach. Presented by the California Air Pollution Control Officers Assn., which represents 35 local air pollution control officers throughout California, conference topics will include clean fuel technologies, green fleet vehicles and equipment, green building design and energy efficiency, renewable power generation and more. CHBC members AQMD and Bay Area Air Quality District are co-hosts of this event. The two meetings are one-day and 38 miles apart -- easy to participate in both!

[CHBC Meeting](http://www.californiahydrogen.org): <http://www.californiahydrogen.org>

[Future is Green](http://www.capcoagreen.com): <http://www.capcoagreen.com>

5. Bill to Reverse EPA Denial of California Vehicles Waiver Passes Senate Environment Committee

U.S. Sen. Barbara Boxer (D-CA), Chairman of the Senate Committee on Environment and Public Works, announced that the Committee approved S. 2555, "The Reducing Global Warming Pollution from Vehicles Act of 2008," a bill that instructs the President to sign California's waiver so that California and other states can proceed with laws to improve air quality problems from cars. On December 19, 2007, EPA Administrator Stephen Johnson denied California's request for the waiver - the first time in history that EPA had ever denied the state's request for a waiver to do more to cut air pollution. Sen. Boxer said, "Today's action in the Environment Committee brings us one step closer to giving a green light to California and the other states so they can begin tackling global warming pollution from vehicles."

[California Waiver](http://www.californiahydrogen.org/page.cfm?content=20&display=87): <http://www.californiahydrogen.org/page.cfm?content=20&display=87>

6. MEPs Give Go-Ahead to \$1.5B Fuel Cells and Hydrogen JTI

On May 20, the European Parliament gave its support to the EU's fifth Joint Technology Initiative (JTI). 590 out of a total of 619 Members of the European Parliament (MEPs) voting in favor of setting up the Fuel Cells and Hydrogen (FCH) Initiative. The FCH JTI aims to facilitate and accelerate the development and deployment of cost-competitive European hydrogen and fuel cell based energy systems and component technologies for applications

in transport, stationary and portable power. The new JTI will build on the work of the industry-led European Hydrogen and Fuel Cell Technology Platform (HFP), with a special focus on its implementation plan. This plan foresees a series of actions relating to the development of hydrogen supply and fuel technologies. Between 2008 and 2017, the FCH JTI will have a budget of \$1.5 billion (940 million Euro).

[Hydrogen JTI:](#)

http://cordis.europa.eu/search/index.cfm?fuseaction=news.document&N_RCN=29469

7. Panasonic EV to Double Fuel Cell Output

Panasonic EV Energy Co. plans to double production of fuel cells for hybrid cars to 1 million units annually by 2011, The Yomiuri Shimbun, a leading Japanese newspaper, reported recently. The company, formed jointly by Toyota Motor Corp. and Matsushita Electric Industrial Co. to develop and produce hybrid car batteries, will ramp up output at its plant in Kosai, Shizuoka Prefecture. It also is considering building a new factory in the Tohoku region. The firm plans to build another factory in Kosai to begin mass production of lithium-ion batteries in 2010, in line with the expected market entry of plug-in hybrid cars that can be charged up at home. Lithium-ion batteries are smaller, lighter and have a larger charge capacity than nickel-metal hydride batteries--the currently predominant fuel cell.

[Panasonic EV:](http://www.yomiuri.co.jp/dy/business/20080524TDY08308.htm) <http://www.yomiuri.co.jp/dy/business/20080524TDY08308.htm>

8. Honda Announces FCX Clarity Business Plan and Commencement of Customer Selection Process

Honda plans to deliver about 200 FCX Clarity hydrogen-powered fuel cell vehicles to customers in the first three years of production, with leases beginning in July. The lease program marks the world's first large-scale retail initiative for fuel cell vehicle technology, and Honda has begun the process of identifying customers from a group of over 50,000 individuals who have expressed interest in the FCX Clarity. Honda will announce its first customers when the first FCX Clarity rolls off the production line at a ceremony on June 16, 2008 in Japan, where Honda will also showcase the world's first dedicated fuel cell vehicle production facility. Honda will also showcase the world's first dedicated fuel cell vehicle production facility and announce further plans for involvement by U.S. Honda dealerships.

[Honda:](http://www.hondanews.com/categories/1097/releases/4511) <http://www.hondanews.com/categories/1097/releases/4511>

9. Renault-Nissan Alliance to Start Fuel Cell Vehicle Demos in June

While the Renault-Nissan Alliance has already announced its plans to mass-market electric vehicles in Israel and Denmark in 2011 and Nissan recently announced plans to start selling electric vehicles in the U.S. and Japan by the end of 2010, the alliance has now announced plans to demonstrate FCV prototypes in Europe starting in June. Nissan's X-Trail fuel cell vehicle has been undergoing real world testing for more than two years, with examples leased to government authorities in Japan. The most recent development is a Renault prototype called Scenic ZEV H2. Based on a Renault Grand Scenic, Scenic ZEV H2 is a joint Alliance development. It features Nissan's in-house developed fuel cell stack, high pressure hydrogen storage tank and compact lithium-ion batteries. From June to September, Nissan will demonstrate the X-Trail FCV in six European countries while Renault will showcase the Scenic ZEV H2 at its Environmental Workshop in Barcelona during the second half of June.

[Renault-Nissan:](http://www.autoindustry.co.uk/news/30-05-08_6) http://www.autoindustry.co.uk/news/30-05-08_6

10. London: Black Cabs Go Green

Plans have been announced that will lead to zero emissions taxis serving London by 2012. A collaboration led by hydrogen fuel cell developer, Intelligent Energy, and including Lotus Engineering Ltd, LTI (London Taxis International) Ltd and TRW Conekt, will see a fleet of classic London cabs fitted out with zero emission hydrogen fuel cell power systems. The

program is part of the UK government's Technology Strategy Board's recent allocation of funding of 23 million pounds for 16 innovative low carbon vehicle development programs. The taxis will be powered by fuel cells and batteries configured into an electric hybrid, so the vehicles will be able to operate for a full day without refuelling. They will be capable of achieving speeds of up to 75 mph.

[Intelligent Energy](http://www.intelligent-energy.com/index_article.asp?SecID=8&secondlevel=25&artid=4005): http://www.intelligent-energy.com/index_article.asp?SecID=8&secondlevel=25&artid=4005

11. Ford Plans Environmentally Friendly Future

Ford has laid out its plan to ensure a sustainable transportation future and a cleaner environment. Greg Franette, chief engineer for Ford's fuel cell and hybrid vehicle programs, said the greening of the company's fleet would continue despite Ford's precarious financial position. The company has 30 Focus fuel cell vehicles in operation in North America. In all, these test mules have amassed more than 1.2 million kilometres without significant problems. In fact, Franette said the fuel cells have been very reliable, with only one being replaced to date. The latest expression of the fuel cell breed is Ford's HySeries Drive, which is making the rounds in a modified Edge. The system is a plug-in hybrid that uses a fuel cell in place of a conventional engine.

[Ford](http://www.canada.com/ottawacitizen/news/driving/story.html?id=ed0e9c5c-ea80-4fcd-98dc-acbd9abd4d03): <http://www.canada.com/ottawacitizen/news/driving/story.html?id=ed0e9c5c-ea80-4fcd-98dc-acbd9abd4d03>

12. AC Transit: Next Generation of Zero-Emission Buses is on the Way

The largest ever U.S. procurement of fuel cell power systems for public transport buses was announced recently at the American Public Transportation Association's (APTA) annual bus conference in Austin, Texas. AC Transit of Oakland, CA has agreed to purchase a minimum of eight 120 kW PureMotion(TM) Model 120 fuel cell systems from UTC Power of South Windsor, CT, with options for an additional 13 units, to power AC Transit's next-generation hybrid-electric, fuel cell buses, scheduled for delivery in 2009 and 2010. The new fuel cells come with a warranty period that can be enhanced to up to 10,000 hours of operation based on the fuel cells achieving certain defined performance milestones.

[AC Transit](http://www.actransit.org/news/articledetail.wu?articleid=22a3f338&PHPSESSID=6b0a80dbce405f95a):

<http://www.actransit.org/news/articledetail.wu?articleid=22a3f338&PHPSESSID=6b0a80dbce405f95a>

13. Fuel Cell Buses Clock Up 2 Millionth Kilometer

Daimler's fuel cell bus fleet has broken a new record: the 36 buses together have clocked more than 2 million kilometers transporting around 7 million passengers. Once again this zero-emission drive system has proved its high reliability and suitability for everyday use. Every kilometer clocked up also increases the extensive data, which is important for the further development of zero-emission drive systems providing valuable information for the next hybrid-based generation of fuel cell buses. Thirty buses from the fuel cell fleet were involved in public short-distance traffic in large European cities, a further 3 were in Perth and Beijing respectively. The fleet has clocked up round about 135,000 operating hours to date with the vehicles proving their worth in the cold wintery northern conditions of Stockholm and Reykjavik, in the summer heat of Spain and in mountainous and flat conditions.

[Fuel Cell Buses](http://www.fuelcellsworks.com/Supppage8846.html): <http://www.fuelcellsworks.com/Supppage8846.html>

14. The Outer Hebrides and Air Products Lead the Renewable Hydrogen Revolution

Comhairle nan Eilean Siar and Air Products have signed an agreement to help bring renewable hydrogen technology to Stornoway, on the Island of Lewis in the Outer Hebrides. Air Products will provide a dedicated hydrogen fuelling station and storage facilities for the

Islands' hydrogen-powered cars as part of the Comhairle's Hebridean Hydrogen Seed (H2seed) project. The vehicles will be used as pool vehicles for employees of the Comhairle, and for educational and public awareness campaigns. The H2seed project is phase 2 of the Comhairle's Hebridean Hydrogen Park plan. H2seed is establishing a renewably generated hydrogen supply chain in the Outer Hebrides, providing technology demonstration projects, and delivering appropriate safety training to users and emergency services.

[Air Products:](#)

<http://www.airproducts.com/PressRoom/CompanyNews/Archived/2008/21May2008uk.htm>

15. Hydrogenics to Supply Electrolyzer for Remote Community Wind-Hydrogen Energy System

Hydrogenics Corp. announced that it has been selected to provide the hydrogen electrolyzer for a community wind-hydrogen-diesel system in the community of Ramea, Newfoundland and Labrador, Canada. By adding zero-emission hydrogen generation and storage, Newfoundland and Labrador Hydro (Hydro), is anticipating an increase in the amount of electricity derived from wind which will lead to a decreased dependence on diesel fuel. Hydrogenics anticipates it will deliver its commercially proven HySTAT onsite generation electrolyzer to Hydro within one year. Ramea is isolated from the main electrical grid and dependent on diesel generation to meet its electricity needs. This project is a five year research and development pilot with potential for expansion to other remote communities.

[Hydrogenics:](#) http://www.hydrogenics.com/ir_newsdetail.asp?RELEASEID=312365

16. QuantumSphere Launches NiFe(TM) Coated Electrode

In February, QuantumSphere announced that it had achieved a breakthrough in clean hydrogen production through water electrolysis. The firm recently announced the product has been launched. Leveraging QSI-Nano NiFe(TM), a proprietary advanced catalyst formulation, QuantumSphere effectively increased the surface area of commercial electrodes by approximately 1000 times. This increase is due to unique physical characteristics of nanoparticles. To date, the QSI-Nano NiFe(TM) coated electrodes have surpassed 1000 hour durability testing under harsh conditions (33% KOH, 1 A/cm²). These nano-enabled electrodes demonstrate QuantumSphere's ability to produce larger amounts of clean hydrogen on demand at improved rates.

[QuantumSphere:](#) http://www.qsinano.com/news/releases/2008_25_02.php

17. Ballard and ACME Group Sign Agreement for Wireless Telecom Backup Power Solution in India

Ballard Power Systems announced a multi-year supply agreement with an affiliate of the ACME Group (ACME), a leading provider of telecommunications infrastructure solutions in India, to provide fuel cells for backup power in the wireless telecom market. The supply agreement imposes mutual exclusivity on both companies for the India wireless telecom backup power market through 2010, subject to certain conditions. In order to maintain its right to exclusivity, ACME must order at least 22.7 megawatts (MW) of fuel cell products through 2010, specifically 0.1 MW, 3.3 MW and 19.3 MW in 2008, 2009 and 2010, respectively. Ballard will supply the company's existing Mark1020(TM) ACS fuel cell product as well as a new liquid-cooled reformate-capable fuel cell product currently in development.

[Ballard:](#) <http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=irol-newsArticle&ID=1142479&highlight=>

18. Hydrogen Fuel Cell to Recharge Cell Phone Battery

Researchers at Paris, France-based STMicroelectronics announced they have developed a hydrogen fuel cell for mobile telephones, which could lessen dependence on electricity to recharge phone batteries. The invention, the size of a small cigarette lighter, was presented

recently by the Atomic Energy Commission. The researchers said they started development on the project in 2005. STMicroelectronics said the gadget was developed for the company Bic, manufacturer of ball pens, lighters and razors. With the invention, mobile phone users will be able to tap into the fuel cell whenever their mobile phone batteries run out of power. The hydrogen-powered batteries were expected to hit the shelves in 2010. However, the price of the battery is yet to be determined.

[Cell Phone](http://www.allheadlinenews.com/articles/7011025294): <http://www.allheadlinenews.com/articles/7011025294>

19. BASF Launches Fuel Cell Development Center in Japan

Major German chemical maker BASF recently announced it has established a development center for fuel cell parts in Yokkaichi, Mie Prefecture, central Japan. The new center will develop parts for fuel cells for electronic devices, such as notebook personal computers, and fuel cells to power home and hospitals. BASF will supply the parts to fuel cell makers in Japan, company officials said. BASF said it expects the global fuel cell market to expand to about one billion euro in 2010 and 20 billion euro in 2020. The company aims to boost global sales in its fuel cell business to 150-200 million euro by 2015, it said.

[BASF](http://www.japancorp.net/Article.Asp?Art_ID=18327): http://www.japancorp.net/Article.Asp?Art_ID=18327

20. Technip Awarded Contract for Hydrogen Plant in Romania

Technip has been awarded by Rominserv and Rompetrol Rafinare (both members of The Rompetrol Group), a contract worth approximately EUR 40 million for a hydrogen plant to be constructed at the Petromidia Refinery in Constanca, Romania. Based on Technip's proprietary technology, the plant will have a capacity of 40,000 normal m³/hour of 99.98% purity hydrogen, and will also deliver approximately 40 tons/hour high pressure steam. Technip's operating center in Zoetermeer, The Netherlands, will execute the contract, which covers licensing and basic design, detailed engineering, procurement and supply of main equipment and materials. Technip will also provide operator training and technical assistance during construction, commissioning and start-up.

[Technip](http://www.technip.com/english/press/articles/2008/2008-05-07.htm): <http://www.technip.com/english/press/articles/2008/2008-05-07.htm>

21. Fuel Cell Research Nets \$13.6 Million CAD

The National Research Council's Vancouver-based hydrogen fuel cell cluster got a CAD \$13.6 million boost from Ottawa recently. The announcement, part of the federal government's \$118 million investment in six NRC technology clusters across Canada, came with the official opening of the hydrogen and fuel cell gateway, a demonstration and exhibition centre for the fuel cell and hydrogen sector. Vancouver accounts for almost 75 per cent of some 2,000 Canadian jobs in the hydrogen and fuel cell industry.

[NRC](http://www.canada.com/vancouver/news/business/story.html?id=68bffb6-5d6b-4c4f-98d7-e5efed303896): <http://www.canada.com/vancouver/news/business/story.html?id=68bffb6-5d6b-4c4f-98d7-e5efed303896>

22. New Tug Design Promises Near-Zero Emissions

WorldWise Marine, a partner in the Offshore Ship Designers group, has launched a new harbor tug design it says will cut emissions to zero during most of its operating hours. The Hydrogen Hybrid Harbour Tug (HHHT), developed by WorldWise Marine working with Dutch tug operators Iskes and Smit, is a 50-ton bollard pull tug fitted with fuel cells and hydrogen tanks. The fuel cells, in combination with batteries, are able to provide sufficient power to operate the tug during standby and mobilization/demobilization periods, which according to WorldWise Marine is 85% of the time. The new tug design uses Proton Exchange Membrane (PEM) fuel cell technology developed by the Dutch firm NedStack. It was said to deliver 34% well-to-propulsion efficiency.

[HHHT](#):

<http://www.sustainableshipping.com/news/2008/05/71692?gsid=36d7bdbd0044b0e1847a8b61a6ed316c&asi=1>

23. Newest GREET Model Updates Environmental Impacts Of Specific Fuels And Automobiles

The newest version of the Greenhouse gases, Regulated Emissions and Energy use in Transportation (GREET) model from the U.S. Dept. of Energy's (DOE) Argonne National Lab will provide researchers with more tools to evaluate and compare the environmental impacts of new transportation fuels and advanced vehicle technologies. Argonne transportation researchers regularly update key parameters and assumptions in the GREET model on the basis of new research and development in fuel pathways and vehicle technologies. Simulations of many existing fuel pathways in GREET were updated. Compression energy efficiencies for natural and hydrogen gases are calculated with the first law of thermodynamics and a tube trailer delivery option for hydrogen gas to refueling stations has been added.

GREET: <http://www.sciencedaily.com/releases/2008/05/080508115822.htm>

24. 17th World Hydrogen Energy Conference in Brisbane, Australia June 15-18

Like previous gatherings in Yokohama (2004) and Lyon (2006), this year's conference will discuss hydrogen's feasibility as an energy carrier. Topics of discussion will include hydrogen-generating methods, identifying materials for hydrogen storage and developing the infrastructure to use hydrogen technologies such as fuel cell systems. The program includes sessions on safety and the development of international codes and standards as well as hydrogen and fuel cell technology education. The CUTE hydrogen fuel cell bus field trial based in Perth, Western Australia will also be discussed.

WHEC: <http://media.cleantech.com/2284/17th-world-hydrogen-energy-conference-in-brisbane>

Conference Site: <http://www.whec2008.com/>

25. Send Us Your News; Board of Directors

We welcome important news from our members for inclusion on our website and in next month's report. Thank you for helping build a great organization. Our board: President - Henry Wedaa; Vice President - Paul Scott, ScD; Secretary - Josh Mauzey; Treasurer - John Williams; Managing Director - Catherine Rips; Membership Chairman - Mark Abramowitz; Program Chairman - Henry Wedaa; Director at Large - Allan Bedwell; Director at Large - Fred Silver; Director at Large - Larry Watkins; Ex-officio Government Liaison - Analisa Bevan. To send news or contact the board, please email: info@californiahydrogen.org.

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Catherine Rips, Editor/Publisher

California Hydrogen Business Council

760-341-2924

www.CaliforniaHydrogen.org