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1. Welcome New Members

We extend a warm welcome to our newest Silver member, Earth Energy Fuels. And thanks to new Platinum member, South Coast Air Quality Management District, and new Gold member, Bay Area Air Quality Management District, for your continued support. We appreciate it!

[Earth Energy Fuels](http://earthenergyfuels.com/joomla/): <http://earthenergyfuels.com/joomla/>

2. Breakthrough Hydrogen Markets: CHBC's September 17 Meeting

At our June meeting, we focused on key stakeholder groups we need to engage as hydrogen advocates. Our September 17 conference will be devoted to the meat of the message. Presentations will highlight today's breakthrough hydrogen markets for mobile and stationary applications including back-up power, UPS, materials handling, refinery operations, renewable energy storage and more. Presenters from Asemblon, Ballard Power Systems, Hydrogenics, Hyundai-Kia, IdaTech, and Valero are confirmed. Please check back for full details. Thanks to Platinum member South Coast Air Quality Management District for hosting us once again.

[Sept 17 Meeting](http://www.californiahydrogen.org/page.cfm?content=48): <http://www.californiahydrogen.org/page.cfm?content=48>

3. Hydrogen Gets More Funding from U.S. Congress

The U.S. Senate Energy and Water Development Appropriations Bill (S. 1436), which includes the Dept. of Energy's (DOE) FY10 budget, passed on the floor of the Senate this week by a vote of 85-9. The bill contains hydrogen and fuel cell technologies provisions appropriating \$190 million for EERE's Hydrogen program at DOE, as well as \$10 million above the budget request for hydrogen from coal research and \$4 million above the budget request for fuel cells at DOE's Office of Fossil Energy. These two versions will now be sent to a Senate/House conference committee that will merge them into one bill. The House passed its Energy & Water appropriations bill on July 17, containing \$153 million for hydrogen and fuel cell technologies for DOE's EERE program in FY10, plus \$25.5 million above the Administration's request "for fuels" which can be used to fund hydrogen from coal research.

Funding: <http://www.renewableenergyworld.com/rea/news/article/2009/07/hydrogen-gets-more-funding-from-us-congress>

4. European Fuel Cells Call for Proposals

With the aim of putting fuel cell and hydrogen energy technologies on the market two-five years sooner than originally touted, the European Fuel Cells and Hydrogen Joint Technology Initiative (FCH JTI) has issued a second call for proposals for research. Around EUR 140 million has been allocated for this second call, with the FCH JTI holding a total budget of around EUR 1 billion to be invested in hydrogen and fuel cell research and development by 2014. It is hoped that research can foster the use of hydrogen fuel buses and fuel cell vehicles with the intention of helping to develop hydrogen storage and improve fuel cell durability.

Proposals: <http://www.thegreencarwebsite.co.uk/blog/index.php/2009/07/06/european-fuel-cells-call-for-proposals/>

5. Hydrogen-Powered Vehicles Go on 540-km Test Run in Japan

(Editor's Note: this story was published mid-month; we have not yet seen a follow-up.) A group of hydrogen-powered motor vehicles were to be taken on a rare 540-kilometer road test in western Japan without an accompanying refueling vehicle. The prototype green vehicles were to be refueled with hydrogen at roadside chemical plants in the test run starting in Sakai, Osaka Prefecture, on July 27. The vehicles were to be refueled at plants including those in Okayama, Hiroshima and Yamaguchi Prefectures before arriving in Kitakyushu, Fukuoka Prefecture, on July 30. The vehicles were also run on highways. The road tested vehicles included three minivans that can run only with hydrogen -- two Premacy Hydrogen RE Hybrid minivans produced by Mazda and an FCHV-adv fuel-cell hydrogen hybrid minivan by Toyota Motor Corp. The other was Mazda's hydrogen-gas hybrid car RX-8 Hydrogen RE.

Test Run: <http://fuelcellworks.com/news/2009/07/16/hydrogen-powered-vehicles-to-go-on-540-km-test-run-in-japan/>

6. Volvo's Fuel Cell Technology Investment to Create 100 New Jobs

In partnership with international corporations Midroc and OCAS, the Swedish Energy Agency and the Volvo Group are investing \$25.8 million in Volvo's development of fuel cells. The investment will create around 100 new positions in the Gothenburg, Sweden region within the next three years. The company Powercell Sweden AB is based on two patented components: a fuel converter (reformer) and a PEM fuel cell, the type of fuel cell most often used in transport applications. The fuel converter produces hydrogen gas from bio fuels such as ethanol, DME (Dimethyl ether), biogas, methanol and biodiesel, as well as from regular diesel or gasoline. The PEM fuel cell then converts the hydrogen gas into electricity.

[Volvo](http://www.bymnews.com/news/newsDetails.php?id=56922): <http://www.bymnews.com/news/newsDetails.php?id=56922>

7. Hyundai-Kia Plans \$3.28 Billion Investment in Green Growth

Hyundai-Kia Automotive Group recently announced plans to invest W9.3 trillion this year (\$3.28 billion USD), some W4.1 trillion of which will go to green growth projects. The carmaker said it will expand investment into R&D and facilities to establish a mass production system for green cars in 2012, with an aim to become one of the top-four green car companies in the world. It will spend W2.2 trillion to develop eco-friendly cars including hybrid and hydrogen fuel-cell vehicles and W1.4 trillion to develop fuel-efficient engines, transmissions, and light materials. Earlier, the firm stated it expected to enter small-scale production of FCEVs by 2012, when about 9000 vehicles will be sold in the United States, mostly to municipalities (by all manufacturers of FCEVs).

[Hyundai-Kia](http://english.chosun.com/site/data/html_dir/2009/07/23/2009072300221.html):

http://english.chosun.com/site/data/html_dir/2009/07/23/2009072300221.html

[FCEVs](http://blogs.automobilemag.com/6557673/green/kias-big-fuel-cell-plans/index.html): <http://blogs.automobilemag.com/6557673/green/kias-big-fuel-cell-plans/index.html>

8. Proterra Selected for U.S. Dept. of Defense Hydrogen Pilot Project

Proterra LLC has announced its role in a U.S. Dept. of Defense pilot project designed to test an end-to-end clean hydrogen energy cycle. Proterra's bus will be used to demonstrate the economic, operational and environmental benefits of fuel cell technology in a full sized transit bus. Led by the Center for Transportation and the Environment (CTE), the pilot project will include all elements of a clean hydrogen energy cycle, from local hydrogen generation to bulk hydrogen storage to hydrogen load in the form of fuel-cell powered forklifts and Proterra's fuel cell powered bus. Proterra's plug-in, battery-electric bus with hydrogen fuel cell range extension will be used to transport tens of thousands of staff between Ft. Lewis and McChord Air Force Base in Tacoma, Washington.

[Proterra](http://www.proterraonline.com/pressrelease.asp?id=6): <http://www.proterraonline.com/pressrelease.asp?id=6>

9. Volcanoes Park to Test Hydrogen-Powered Shuttle System

Park Superintendent Cindy Orlando has announced the Federal Transit Authority awarded Hawaii Volcanoes National Park a research and development grant of \$989,000 to test the feasibility and performance of a hybrid battery/hydrogen fueled shuttle system. Research garnered from this project will contribute to development of hydrogen technology and infrastructure in the state and support the transition of the island of Hawaii to an economy less dependent on imported fossil fuels. It will also help the park and its partners educate residents and visitors to the value of renewable energy and quiet, clean alternative transportation. The test program will run for two years. Total contributions by the National Park Service and its partners to the complete hydrogen-powered shuttle program will total \$2.4 million.

[Hawaii](http://www.hawaii247.org/2009/07/09/volcanoes-park-to-test-hydrogen-powered-shuttle-system/): <http://www.hawaii247.org/2009/07/09/volcanoes-park-to-test-hydrogen-powered-shuttle-system/>

10. Sao Paulo Hails Hydrogen-Powered Bus

Sao Paulo recently unveiled plans to introduce Latin America's first hydrogen-powered bus, which from August will plough the city's thronged streets, spewing water vapor instead of carbon dioxide. The first prototype is scheduled to enter service next month, with trials expected to end in 2011. As part of the trial, three more hydrogen buses will be built as well as a hydrogen production facility. The vehicles will be able to travel 186 miles on 45 kilograms of hydrogen stored in the bus's nine tanks, and 24 miles more using battery power.

[Sao Paulo](http://www.spacedaily.com/2006/090702020825.1vnhzcew.html): <http://www.spacedaily.com/2006/090702020825.1vnhzcew.html>

11. Shell Opens Second Hydrogen Station in Great NY Area

Royal Dutch Shell has opened its second hydrogen filling station at the JFK International Airport in the greater New York City area. The station is the result of a partnership between Shell, the Port Authority of New York and New Jersey, the U.S. Dept. of Energy and General Motors. A third station in the Bronx (slated to open as this newsletter was going to press), has been developed with the New York City Department of Sanitation. A station has been operating in White Plains, New York since April 2008. The company has said that the cluster of stations will provide New York drivers of hydrogen fuel-cell vehicles with greater flexibility and convenience. The three hydrogen stations in New York are within approximately 30 miles of each other.

[Shell](http://www.tradingmarkets.com/.site/news/Stock%20News/2422934/): <http://www.tradingmarkets.com/.site/news/Stock%20News/2422934/>

12. Ballard Fuel Cells To Power Telecom Backup Power Units For Motorola

Ballard Power Systems announced recently that its FCgen(TM)-1020ACS fuel cell product is the power source for a 1.6 kiloWatt backup power system deployed by Motorola, a major global telecommunications solution provider. Dantherm Power A/S, through its affiliate Dantherm Air Handling A/S, is utilizing Ballard's fuel cell product in a fully integrated cabinet solution for Motorola TETRA base stations throughout Denmark's SINE network. Motorola is responsible for establishment and operation of Denmark's nationwide SINE public safety network, which consists of approximately 500 sites. Ballard fuel cells will provide reliable backup power in 123 base stations across Denmark.

[Ballard](http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=iro-newsArticle&ID=1307073&highlight=): [http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=iro-](http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=iro-newsArticle&ID=1307073&highlight=)
[newsArticle&ID=1307073&highlight=](http://phx.corporate-ir.net/phoenix.zhtml?c=76046&p=iro-newsArticle&ID=1307073&highlight=)

13. Hydrogenics Awarded Two Renewable Energy Projects in Europe

Hydrogenics Corp. announced it has received orders for two fuel cell power module solutions - one in Greenland and the other in France - for renewable energy projects. At both locations, Hydrogenics will deliver HyPM Rack stationary systems to be utilized for primary and backup power. In Greenland, the power modules will be delivered to Nukissiorfiit, the national energy company, as part of project H2KT. This initiative is meant to analyze the potential of using hydrogen for energy storage and management in Greenland, such that the country can better leverage its natural hydro-generation resources. In France, the power modules will be used for energy generation to supplement photovoltaic and wind power at the new headquarters of the Abalone Group, a human resources consulting firm located in the city of Nantes.

[Hydrogenics](http://www.hydrogenics.com/invest/News_Details.asp?RELEASEID=399413): http://www.hydrogenics.com/invest/News_Details.asp?RELEASEID=399413

14. IdaTech Announces Follow On Order for 30 FC Systems

IdaTech announced it has received an order for 30 ElectraGen(TM) hydrogen fuel cell systems from its German OEM partner, b+w Electronic Systems GmbH (b+w), for delivery in 2009 and early 2010. This is in addition to a 30 systems order received from b+w at the end of 2008, 22 of which have been sold to b+w's customers. These systems will be deployed on the German Terrestrial Trunked Radionetwork, telecom sites, as well as in UPS applications. This order and the system deployments support the objective of both IdaTech and b+w to develop and certify fuel cell systems ahead of mass deployment in the German market. Earlier this month, b+w fuel cell development projects were approved as part of the German National Hydrogen and Fuel Cell Technology Innovation Program (NIP).

[IdaTech](http://www.idatech.com/about-us-news.asp): <http://www.idatech.com/about-us-news.asp>

15. Plug Power to Supply Fuel Cell Systems in India

Plug Power Inc. announced it has entered into an agreement with Wireless TT Info Services Ltd. of India for the purchase, installation and maintenance of 200 GenSys(R) prime power fuel cell systems to be installed at cell towers owned and operated by WTTIL in India. Plug Power will be establishing manufacturing and support operations in India and currently expects initial deliveries to begin in the fourth quarter of 2009. The company expects to have all units shipped by the end of March, 2010. GenSys(R), a continuous run power source, is presently targeted for cell tower sites with no or extremely unreliable electric grid service. Approximately 10 percent of WTTIL's towers currently operate completely off grid where the primary power is provided by diesel gensets.

[Plug Power:](#)

<http://www.plugpower.com/newsroom/pressreleases.aspx?action=details&newsid=288>

16. Coca-Cola Enterprises to Use Fuel Cell Technology from UTC Power

UTC Power announced recently it will supply two of its new PureCell(R) Model 400 fuel cell systems to provide on-site electricity and heat for Coca-Cola Enterprises' production facility in Elmsford, N.Y. The efficient energy and heat source will help further CCE's sustainability efforts, specifically around energy conservation and water stewardship. UTC Power will install two fuel cell systems on-site at the CCE facility. Together, the fuel cells will generate enough energy and heat for 30 percent of the facility's overall operational needs. They also will serve as a backup source of power in the case of a utility power outage. UTC Power will own, operate and maintain the fuel cells as part of a 10-year energy services agreement.

[UTC:](http://www.utcpower.com/fs/com/bin/fs_com_Page/0,11491,0315,00.html) http://www.utcpower.com/fs/com/bin/fs_com_Page/0,11491,0315,00.html

17. New Hydrogen-Powered Locomotive Unveiled

The Burlington Northern Santa Fe (BNSF) Railway Co. and Vehicle Projects Inc. recently rolled out the nation's first hydrogen-powered fuel cell locomotive at the railroad's shops in the Oakland, KS neighborhood. BNSF, Vehicle Projects, Sen. Sam Brownback, R-Kan., and the Dept. of the Army announced plans to develop the locomotive on Jan. 9, 2008. Funding came from BNSF and the Dept. of Defense (DoD), said Steven Forsberg, BNSF spokesman. In 2008, Brownback announced the DoD was providing a second year of funding for the experiment, \$2.4 million for fiscal year 2008 following \$2 million in the previous fiscal year. The locomotive will be sent to Colorado for additional testing this summer, said Chris Roberts, BNSF vice president of engineering, then to California to test the viability of the technology.

[Locomotive:](http://www.cjonline.com/news/2009-06-29/new_locomotive_unveiled) http://www.cjonline.com/news/2009-06-29/new_locomotive_unveiled

18. World's First-hydrogen Powered Yacht Will Study Mediterranean Pollution

Zero CO2 is the world's first-hydrogen powered yacht with a fully integrated laboratory to study pollution in the Mediterranean. The objective of the project is to sail around the Mediterranean using a clean carbon-free auxiliary motor. The yacht will be presented for the first time at the Paris Boat Show in December 2009. A 12m craft built by the RM shipyard of La Rochelle, the yacht will be equipped with an electric motor driven by a hydrogen fuel cell, developed by CEA Liten of Grenoble. A scientific platform installed on the yacht by the University Joseph Fourier (UJF) and its technology transfer subsidiary, Floralis, will be used to collect scientific data on man-made pollution throughout the length of the 10 month trip. The yacht will travel around the Mediterranean coast as far as Turkey on a journey that will commence in March, 2010.

[Zero CO2:](http://www.sciencedaily.com/releases/2009/06/090619125909.htm) <http://www.sciencedaily.com/releases/2009/06/090619125909.htm>

19. World's First Fuel Cell Aircraft Takes Off in Germany

The world's first piloted aircraft capable of taking to the air using only power from fuel cells took off in Germany recently, producing zero carbon dioxide emissions, its makers said.

"We have improved the performance capabilities and efficiency of the fuel cell to such an extent that a piloted aircraft is now able to take off using it," said Johann-Dietrich Woerner from the German Aerospace Center (DLR). Developed by the DLR, Lange Aviation, BASF Fuel Cells and Denmark's Serenergy, the Antares DLR-H2 motor glider has a range of 465 miles and can fly for five hours. The system uses hydrogen as its fuel. If the hydrogen fuel is produced using renewable energy sources, then the motor glider is genuinely CO2-free, the DLR said.

[Antares:](#)

<http://www.google.com/hostednews/afp/article/ALeqM5gjc1SnQCWH79Ai0MrCt6SKXV8gKQ>

[Video:](http://www.popsci.com/military-aviation-amp-space/article/2009-07/antares-dlr-h2-first-plane-run-exclusively-fuel-cell-power) <http://www.popsci.com/military-aviation-amp-space/article/2009-07/antares-dlr-h2-first-plane-run-exclusively-fuel-cell-power>

20. H2scan Corp Offers Product Sale Through August 31

To celebrate the three-year anniversary of its third generation products, H2scan will be offering sales incentives and promotions on its entire range of products. The same includes the HY-OPTIMA Process Hydrogen Analyzer series, available in both intrinsically safe (IS) and non-IS configurations, the HY-ALERTA Fixed Area Hydrogen Monitor line, also available in IS and non-IS models and the HY-ALERTA 500 Portable Hydrogen Leak Detector. Orders must be placed by August 31, 2009. Contact the H2scan sales department directly at (661)775-0912 or via email, sales@h2scan.com.

[H2Scan:](http://www.h2scan.com/) <http://www.h2scan.com/>

21. New Way to Produce High Capacity Hydrogen Storage Material

Researchers at the U.S. Dept. of Energy's Savannah River National Laboratory have created a reversible route to generate aluminum hydride, a high capacity hydrogen storage material. This achievement is expected to accelerate the development of a whole class of storage materials. "We believe our research has provided a feasible route to regenerate aluminum hydride," says Dr. Ragaiy Zidan of SRNL, lead researcher on the project. The SRNL team, supported by the DOE Office of Energy Efficiency and Renewable Energy, has developed a novel closed cycle for producing aluminum hydride (AlH₃), also known as alane, that potentially offers a cost-effective method of regenerating the hydrogen storing material in a way that allows it to repeatedly release and recharge its hydrogen.

[Storage:](http://www.azonano.com/news.asp?newsID=12409) <http://www.azonano.com/news.asp?newsID=12409>

22. Fuel Cell Market to Target Niche Portable Device Apps

The key to the adoption of fuel cells is to align their capabilities with the growing need for reliable, long-lasting, affordable alternatives to conventional batteries and small generators for a variety of portable devices, says a new report from Pike Research. The fuel cell market is projected to grow from \$122 million in 2008 to approximately \$2.7 billion in ten years, with the majority of the market initially in North America, followed by Asia Pacific and Western Europe. "There is no one killer app for fuel cells. Instead, there are dozens of niche applications that have an increasing need for the clean, reliable power that fuel cells can provide," said Bill Matvichuk, Pike Research. "Over the next several years, fuel cell manufacturers must tailor their offerings to serve the specific requirements of a multitude of consumer and industrial products."

[Niche Markets:](http://www.environmentalleader.com/2009/07/08/fuel-cell-market-to-target-niche-portable-device-apps/) <http://www.environmentalleader.com/2009/07/08/fuel-cell-market-to-target-niche-portable-device-apps/>

23. Fueling the Hydrogen Economy, T&L 900

A new online course is now being offered to educators, professionals in the energy industry and graduate students through the University of North Dakota's Professional Development for Educators program. Developed in conjunction with the Energy & Environmental

Research Center's National Center for Hydrogen Technology, the course focuses on advances occurring in hydrogen technology, options for hydrogen storage and distribution, safety considerations for hydrogen as an energy carrier, the functioning of fuel cells and hydrogen's place in the U.S. energy mix. Students learn from and participate in self-checks, audio-visual and text based lectures, quizzes, animation and graphic elements. [Online Course](http://educators.und.edu/onlinecourse/?id=ONL.HYDROGEN): <http://educators.und.edu/onlinecourse/?id=ONL.HYDROGEN>

24. MSHBC 5th Annual Hydrogen Implementation Conference August 17-19

The 5th Annual Hydrogen Implementation Conference will be held August 17-19 at the Embassy Suites Hotel in Charleston, W.Va. Organized by Conference Executive Director David Haberman, President, Mountain States Hydrogen Business Council (MSHBC), highlights include the commissioning of the Yeager Hydrogen Facility, a seminar on Hydrogen Safety for First Responders, a Hydrogen Energy Seminar, a keynote by West Virginia Governor Joe Manchin, panels on Enabling Technology, Hydrogen Policy and Transportation, a presentation by Clean Cities, an expo and more. Hydrogen Award Honorees include CHBC President Paul S. Scott, ScD, who is also chairing a breakout session on State Hydrogen Initiatives.

[MSHBC](http://www.mountainstateshydrogen.com/2009%20Conference.htm): <http://www.mountainstateshydrogen.com/2009%20Conference.htm>

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. The board of directors of the California Hydrogen Business Council is as follows: President, Paul Scott, ScD; Vice President, Mark Abramowitz; Treasurer, Josh Mauzey; Secretary, JJ Weston; President Emeritus, Hank Wedaa; Managing Director, Catherine Rips; Membership Chair, Richard Cromwell III; Program Chair, Fred Silver; Directors at Large, Terry Tamminen, Debbi Smith and Larry Watkins. Ex-officio Government Liaisons - Analisa Bevan and Gerhard Atchelik. To send news or contact the board, please email: info@californiahydrogen.org.

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Catherine Rips, Editor/Publisher

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