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1. Welcome New Members; Next CHBC Meeting Sept. 17

CHBC extends a warm welcome to our newest Silver member, Clean Air Now, and to our newest individual member Gavin Embry. We appreciate your support! Also, please mark your calendars now for CHBC's next General Meeting, to be held on September 17, 2009 at South Coast Air Quality Management District. The theme of the meeting is Where Hydrogen Works.

Clean Air Now: <http://www.clean-air-now.org/home.html>

Sept 17: <http://www.californiahydrogen.org/page.cfm?content=48>

2. Support Hydrogen Funding and Legislator Education

Both the NHA and USFCC have made it very simple for industry members to contact their elected officials to advocate for the reinstatement of hydrogen funding. In addition, the site H2 and You, a project of the Hydrogen Education Foundation, has excellent information on hydrogen. If you aren't familiar with it -- check it out today!

Contact Congress: <http://www.h2andyou.org/representative.asp>

H2 and You: <http://www.h2andyou.org>

3. A New Measure of Global Warming from Carbon Emissions

Damon Matthews, a professor in Montreal's Concordia University Dept. of Geography, Planning and the Environment, has found a direct relationship between carbon dioxide emissions and global warming. Matthews, together with colleagues from Victoria and the U.K., used a combination of global climate models and historical climate data to show that there is a simple linear relationship between total cumulative emissions and global temperature change. These findings were published in the June 11, 2009 issue of Nature. Matthews and colleagues show that despite uncertainties, each emission of carbon dioxide

results in the same global temperature increase, regardless of when or over what period of time the emission occurs.

Global Warming:

http://mediarelations.concordia.ca/pressreleases/archives/2009/06/a_new_measure_of_global_warmin_1.php

4. Study Confirms Reduction of Air Pollution Extends Life

At its monthly hearing, the California Air Resources Board heard the results of a recently published study in the New England Journal of Medicine that shows reducing air pollution improves life expectancy. The study, investigating the association between fine particulate matter (PM) and life expectancy in 51 U.S. metropolitan areas, found that for every decrease of 10 micrograms per meter cubed of PM, life expectancy increased by seven months. Since the late 1970s, improvements in health care, lifestyle and diet have increased the average life expectancy in the United States by nearly three years. Air quality improvements alone accounted for nearly five months of that increase. "This is a stark reminder of why California is aggressively moving to reduce air pollution," said ARB Chairman Mary D. Nichols.

Study: <http://www.arb.ca.gov/newsrel/nr052809.htm>

5. Air Pollution from Freeway Extends Further than Previously Thought

Environmental health researchers from UCLA, the University of Southern California and the California Air Resources Board have found that during the hours before sunrise, freeway air pollution extends much further than previously thought. Air pollutants from Interstate 10 in Santa Monica extend more than 1.5 miles downwind, based on recent measurements from a research team headed by Dr. Arthur Winer, a professor of environmental health sciences at the UCLA School of Public Health. This distance is 10 times greater than previously measured daytime pollutant impacts from roadways and has significant exposure implications, since most people are in their homes during the hours before sunrise and outdoor pollutants penetrate into indoor environments.

Pollution: <http://newsroom.ucla.edu/portal/ucla/air-pollution-from-freeway-extends-93857.aspx>

6. World Automakers Reaffirm Fuel Cell Commercialization Time Tables

The 10-year U.S. fuel cell vehicle development program is more than halfway complete and has met or exceeded nearly all technical milestones. Based on the public record, the world's largest automakers clearly see fuel cell vehicles as an integral part of their technology response to global warming and energy security. Daimler announced it is beginning small series production this summer of its Mercedes-Benz B-Class F-Cell vehicle with plans to increase to tens of thousands of vehicles in the 2015-2017 timeframe. The Honda FCX Clarity was named the "World Green Car of the Year." Toyota has reaffirmed its commitment to commercialization of FCVs, and GM has 110 fuel cell vehicles on the road in the U.S. An industry consortium in Japan has also announced a commitment to commercialization in 2015.

Reaffirmation: <http://www.earthtoys.com/news.php?section=view&id=10311>

7. Automakers See No One Winner in Green Car Race

No single technology will triumph in the pursuit of a greener auto industry. Instead, the future will include a mix of cars powered by electricity, hydrogen fuel cells and biofuels, according to the world's biggest car makers. Gathered together at a hydrogen and fuel cells conference in Vancouver recently, car company executives said it is wrong to characterize their search for the low- or no-pollution vehicles of tomorrow as a battleground of technologies. "This is nonsense. This is not about picking some winner," said Andreas Truckenbrodt, chief executive of Automotive Fuel Cell Cooperation (AFCC). "All these technologies have their value," he said, painting a picture of an auto industry in which

combustion engines will share the road with plug-in electric vehicles and cars running on hydrogen.

Automakers: <http://www.guardian.co.uk/business/feedarticle/8537676>

8. Hydrogen Road Tour 2009 an International Success

A caravan of 13 fuel cell vehicles from seven automakers -- Daimler, GM, Honda, Hyundai, Kia, Nissan, Toyota and Volkswagen, made 28 stops over nine days between Chula Vista and the finish line in Vancouver, BC. They filled a total of 190 times using existing stations and mobile refuelers from Air Products and Powertech. Together, the vehicles drove nearly 23,000 miles, including miles for ride & drives and running errands in the evenings. A few of the highlights included a press conference with Gov. Schwarzenegger at the Shell Hydrogen station in Los Angeles, the California Fuel Cell Partnership's 10th anniversary party (see next story), ribbon cutting at the Linde hydrogen station at the San Francisco Airport and more. Visit the website to read daily blogs and see photos from every event.

Wrap Up: <http://www.cafcp.org/hydrogen-road-tour>

H2RT: <http://www.hydrogenroadtour.com>

9. California Fuel Cell Partnership Celebrates 10th Anniversary

The California Fuel Cell Partnership recently marked its 10th anniversary with a celebration at its West Sacramento headquarters. A caravan of vehicles on the Hydrogen Road Tour arrived during the celebration, demonstrating the progress of the collaboration's members during the decade. Key milestones have included moving from early concept vehicles to fleet demonstrations, including some automakers placing vehicles with customers in lease programs, and development of 25 hydrogen stations, with a plan to place 40 more stations in six target California communities within the next few years. In addition, the partnership has reached hundreds of thousands of people through its fact-based outreach program.

CaFCP: <http://www.cafcp.org/press/california-fuel-cell-partnership-celebrates-10th-anniversary>

10. Chinese Hydrogen Fuel Cell Cars Run on US Freeways

Sixteen hydrogen fuel cell Passat Lingyu cars, which were independently developed by China, were recently brought to the U.S. to carry out six months of road testing and demonstration runs. The cars have a top speed of 150 kilometers per hour, and will run for 300 kilometers once fully charged with hydrogen. They completed a 70-day pilot run during the 2008 Beijing Olympics and Paralympics, and have traveled a total of nearly 80,000 kilometers. The recent fuel cell operation demonstration project carried out in California was held by California Fuel Cell Partnership Program, and was jointly sponsored by automobile enterprises, energy companies, fuel cell technology companies and governmental organizations.

VW: <http://english.people.com.cn/90001/90776/90883/6681206.html>

11. Honda Commemorates 50 Years of Innovation in America

June 11 marked Honda's first 50 years in America, commemorating the establishment of American Honda Motor Co., Inc. in a small Los Angeles storefront on June 11, 1959. Honda associates observed the occasion with a brief ceremony at the company's Torrance, CA headquarters. Starting in 1959, with the fuel-efficient Honda 50 motorcycle, to the newly launched 2010 Honda Insight gas-electric hybrid vehicle, Honda has introduced new technologies and business strategies that have shaped the industry and the growth of Honda, including the first government-certified hydrogen fuel cell vehicle -- FCX (2002). Honda's FCX Clarity was recently named the "World Green Car of the Year."

Honda: <http://www.hondanews.com/categories/1097/releases/5032>

12. Jesse James Brings Hydrogen Land-Speed Record Back to America

Six years after he got the idea and bought the streamliner, Jesse James has set the world

record for hydrogen-powered speed. Late afternoon on June 16, James flew across the windswept dust of El Mirage dry lake bed in the California desert and tripped the lights at 199.712 mph. That was 14 mph faster than the previous record of 185 mph, set in Germany by BMW in its hydrogen-powered H2H. The whole deal was for the season-ending episode of James's TV show, *Jesse James is a Dead Man*. The episode is set to air at 10 p.m. Eastern on Aug. 9 on the Spike TV network. The land-speed car also shows that alternative-fuel cars can have a popular appeal, James said. "We don't have to be dorks to make things environmentally friendly."

Speed Record:

<http://www.autoweek.com/article/20090617/CARNEWS/906179969#ixzz0J0Q3nFeN&D>

13. Nissan Hosts the Launch of The UK Hydrogen Network Project

Nissan European R&D recently hosted a meeting at the Nissan Technical Centre Europe (NTCE) in Bedfordshire to launch the UK Hydrogen Network (UK-HyNet) project. UK-HyNet is an initiative that aims to position the country as one of the world's leading hydrogen economies by 2015, by creating a network of hydrogen infrastructure throughout the UK. While the UK already has clusters of world-leading knowledge and technological innovation in hydrogen, fuel cells and low-carbon energy systems, efforts have until now remained localized. Under UK-HyNet, all these activities will become part of a coordinated national program that can compete on the international stage.

UK-HyNet: <http://www.theautochannel.com/news/2009/06/23/466901.html>

14. An Open-Source Hydrogen Car with a Porsche Pedigree

Autocar reports that U.K.-based personal transport maker Riversimple unveiled its Smart car-sized hydrogen-powered vehicle in June. For the last three years, Sebastian Piech and other members of the Porsche family have been bankrolling the development of the Riversimple Urban Car in conjunction with Oxford University and Cranfield University. The Urban Car weighs just 772 pounds, can reach speeds of 50 miles per hour, and has a range of more than 200 miles. It runs off a tiny six kilowatt fuel cell. Four electric motors on each wheel also function as the breaks and electricity generators. The company plans to roll out 10 prototypes initially and then set up a pilot program with a city in the United Kingdom. The cars will be leased over 20 years, with fuel included in the cost.

Urban Car: <http://www.scientificamerican.com/blog/60-second-science/post.cfm?id=an-open-source-hydrogen-car-with-a-2009-06-12>

15. CTTRANSIT Fuel Cell Transit Bus: Second Evaluation Report

The National Renewable Energy Laboratory recently published a second report on its evaluation of a fuel cell bus in service at CTTRANSIT in Hartford, CT. This report is focused on performance results for CTTRANSIT's prototype fuel cell bus since the installation of a new fuel cell power system and incorporates lessons learned from the earlier phase. Data are included from three new diesel buses operating from the same bus depot as a baseline comparison. During this 14-month data collection period, CTTRANSIT operated the fuel cell bus over 24,000 miles in service with an overall fuel economy of 4.7 miles per kg (13.14 kg/100km), which equates to 5.3 miles per diesel equivalent gallon. For comparison, CTTRANSIT's diesel buses had an average fuel economy of 3.66 miles per gallon during that same timeframe.

Report: <http://www.nrel.gov/hydrogen/pdfs/45670-1.pdf>

Appendices: <http://www.nrel.gov/hydrogen/pdfs/45670-2.pdf>

16. OMV Opens Baden-Wuerttemberg's First Public Hydrogen Filling Station

On the site of the OMV service station at Stuttgart Airport, OMV in cooperation with Linde AG and Daimler AG has opened Baden-Wuerttemberg's first publicly accessible hydrogen filling station. This successful cooperation between the participating companies is subsidized by the State of Baden-Wuerttemberg. Hydrogen filling stations represent an important step

toward reducing dependence on fossil fuels in the long term and coming a step closer to emission-free sustainable mobility. The innovative hydrogen filling station will serve fuel cell vehicles of the latest generation, such as the Mercedes-Benz B-Class F-CELL, with 700-bar high-pressure technology. Small-series production of this vehicle is to commence later this year in Germany.

Linde: <http://www.benzinsider.com/2009/06/omv-opens-baden-wuerttemberg%E2%80%99s-first-public-hydrogen-filling-station/>

17. Fuel Cells to Power Anheuser Busch Forklifts

Forklifts at the Anheuser Busch (AB) brewery in Fort Collins will soon be powered by fuel cells as part of a \$41.9 million demonstration project by the U.S. Dept. of Energy to test the cells' performance in the real world. The project, funded by the American Recovery and Reinvestment Act stimulus package, is designed to accelerate the use of fuel cells in private industry. The Fort Collins AB brewery is one of 13 projects in 10 states that will receive funding to help get fuel cells into the workplace. The local brewery, the only Colorado project on the list, will receive \$1.1 million to convert its fleet of 23 forklifts, also known as lift trucks, from conventional batteries to fuel cells.

Fork Lifts: <http://www.ncbr.com/article.asp?id=100471>

18. Nuvera to Deliver FC Power Systems and Hydrogen Refueling Station to HEB

Nuvera Fuel Cells announced the sale of 14 PowerEdge(TM) fuel cell systems, along with a complete PowerTap(TM) Hydrogen Generator and Hydrogen Station, to H-E-B in San Antonio, TX. The fuel cell units will power Class II forklift trucks used for the company's distribution center operations. Delivery is scheduled for September 2009. Partial funding is being provided by the Dept. of Energy's Hydrogen and Fuel Cell Market Transformation initiative. The H-E-B partnership comprises a Total Power Solution for material handling installation which includes fuel cell hybrid PowerEdge systems for reach trucks and a PowerTap Hydrogen Generator and Hydrogen Station. The units will enable H-E-B to validate lifecycle cost projections, productivity gains, and environmental benefits of the Total Power Solution.

Nuvera: http://www.nuvera.com/news/press_release-45.php

19. Hydrogen Has Lofty Plans For Global Observer UAS

Aerovironment Inc. has received a major Advanced Concept/Joint Capability Technology Demonstration contract for a UAV that runs on hydrogen fuel cells and can cruise at 55,000-65,000 feet for as long as seven days at a time while carrying a 1,000 pound payload. Aerovironment's Global Observer promises formidable advantages in roles as diverse as communications relay, persistent ISR, maritime patrol, even storm tracking and weather applications. The goal for Global Observer is for payload capacity of up to 400 pounds for GO-1 and 1,000 pounds for the second GO-2 series aircraft. Propulsion uses liquid hydrogen fuel and fuel cells to drive eight small rotary engines set along the wings; as noted above, the goal is seven-day flights.

Aerovironment: <http://www.satnews.com/cgi-bin/story.cgi?number=2132391460>

20. World Commercial Fuel Cell Demand to Reach \$1.9 Billion in 2013

Fuel cell spending worldwide is projected to grow to \$9.4 billion in 2013, rising at an annual rate of 11.0 percent. The commercial market for fuel cells, including revenues associated with prototyping, demonstration and test marketing activities, and product sales, will more than triple to \$1.9 billion in 2013 and almost triple again to \$5.1 billion in 2018. Market gains will be stimulated by ongoing technological advances, helping drive costs down to competitive levels in a growing number of applications, and supported by improved economies of scale as fuel cell manufacturers ramp up production. These and other trends, including market share and product segmentation, are presented in World Fuel Cells, a new

study from The Freedonia Group, Inc., an industry research firm.

Fuel Cell Demand: <http://www.transworldnews.com/NewsStory.aspx?id=91715&cat=12>

21. California Awarded \$90.4M for State Energy Program

The U.S. Dept. of Energy announced more than \$154 million in Recovery Act funds to support energy efficiency and renewable energy projects in California, Missouri, New Hampshire and North Carolina. California will leverage its program funding to provide a statewide energy efficiency retrofit program and cost-effective clean energy systems. The revenue savings that result from these efficiency measures will provide an ongoing source of revenue to continue implementing additional cost-effective efficiency measures. Also as part of California's State Energy Program, the California Energy Commission is investing \$15 million through June 30, 2012, in building a workforce to meet alternative fuel and advanced vehicle technology needs through its Green Jobs Training Program.

SEP: http://apps1.eere.energy.gov/news/progress_alerts.cfm/pa_id=191

22. First-of-its-Kind Map Depicts California's Green Economy

Los Angeles County has more businesses than any other county in California that stand to benefit from the state's leadership on climate change, according to a first-of-its-kind map of green businesses in California. The map was released in conjunction with a report outlining how the Los Angeles area can leverage its environmental leadership to create economic opportunities. The California Green Economy map features more than 2,200 businesses statewide in four categories-energy generation, energy efficiency, green building and transportation-that are likely to grow as California transitions to a low-carbon economy.

Green Map: <http://www.reuters.com/article/mnGreenInvesting/idUS424703630520090608>

23. Green Tech Connect Forum Aug 3-4

At the Green Tech Connect Forum, presented on August 3-4 in Pasadena by the South Coast Air Quality Management District, emerging green technology developers will profile their companies, technologies and funding needs to prospective funding partners, instead of the investment community talking to an audience of technology developers. It will also include one-on-one opportunities to interface directly with the funding partners. The event features nearly 100 speakers, 11 sessions over two days, an Expo showcasing an anticipated 50-60 exhibits and a FREE pre-conference workshop for entrepreneurs interested in developing a green business plan and identifying funding opportunities. CHBC is a support sponsor of this event.

Green Tech Forum: <http://www.greentechconnectforum.com/>

24. HyFLEET:CUTE Project Final Conference November 2009

The achievements of the world's largest hydrogen powered bus fleet will be showcased at the final conference of the HyFLEET:CUTE Project, November 17-18, 2009, Hamburg, Germany. The Conference will include exhibits of the Daimler/EvoBus Fuel Cell and the MAN Internal Combustion Engine hydrogen buses. There will also be tours of the Hydrogen Refueling Infrastructure and opportunities to discuss details of the HyFLEET:CUTE Project with the Project Partners. Additionally, the first public demonstration of the next generation Daimler Citaro hybrid fuel cell bus will take place at the conference.

HyFLEET: <http://register.hyfleet-cute-final-conference.com/?id=805>

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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