

## California Hydrogen Business Council June 2005 Report

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### **1. Welcome New Members**

CHBC welcomes new Silver members [Allergy Systems](#), [Bakman Water Co.](#), and [Bay Area Air Quality Management District](#); and new Individual member Giorgio Zoia (BP). We appreciate your support!

### **2. Hydrogen Power Park Design Team Wins Award from CHBC and NHA**

Last month, we announced Evolution Energy Systems: aka the Humboldt State University Design Team, won the National Hydrogen Association 2005 H2U Student Design Competition. In May, the very bright and eager group had the opportunity to present their [Hydrogen Power Park](#) at Chevron in San Ramon, and at the California Hydrogen Business Council meeting in Sacramento, sponsored by Bay Area Air Quality Management District. At the CHBC meeting, the students were surprised with personalized plaques and \$100 each from CHBC. Needless to say, a good time was had by all! Their power park is designed to produce H<sub>2</sub> 415kg daily of 99.9999 pure hydrogen, 415kW of electricity, and 133kW of heat. Based on their projections, from a \$3.4 million investment, over \$1 million in annual revenue would result from sales of 99.9999 pure hydrogen to semiconductor and research firms, hydrogen motor fuel sales at \$2.50/kg at the pump, and sales of electricity.

### **3. Hydrogenics Provides Fuel Cell System for U.S. Army**

[Hydrogenics Corp.](#) signed a contract to manufacture a self-contained regenerative fuel cell power system that will be used to provide auxiliary power for a U.S. Army Stryker

Light Armored Vehicle (LAV). This is a collaborative government project whereby Radian Inc. has entered into a contract with the United States Army (TACOM/TARDEC), and Hydrogenics has signed a defense industrial research contract with Defence R&D Canada, an agency of the Canadian Department of National Defence. The regenerative power system, an integrated configuration of Hydrogenics' proprietary proton exchange membrane (PEM) fuel cell and electrolyzer technologies, is designed specifically to extend the silent watch capabilities of the Stryker LAV.

#### **4. Hydrogen Fueled Tow Tractor**

Ford Motor Company, the Florida Department of Environmental Protection (DEP), TUG Technologies Corporation, Delta Airlines and the Greater Orlando Aviation Authority (GOAA) showcased a [hydrogen fueled tow tractor](#) outside of City Hall in downtown Tallahassee, Fla. Two TUG M1 tow tractors will be placed into service with Delta Airlines as baggage carriers at the Orlando International Airport later this summer. They will be powered by a Ford 4.2-liter, V-6 industrial engine converted and calibrated to operate on gaseous hydrogen. The proof-of-concept hydrogen fueled engines will create approximately 80 horsepower at 3600 RPM - naturally aspirated.

#### **5. California Fuel Cell Partnership Welcomes ISE Corp. as New Member**

ISE Corp. has joined [CaFCP](#) as its 32nd member. CaFCP is a public-private collaborative formed to demonstrate and promote fuel cell vehicles and hydrogen fuel systems. ISE designs, develops and assembles fully integrated hybrid-electric drive systems and components for large buses, trucks and military vehicles. ISE produced its first fuel cell bus in 2001, and is now providing design and integration for four zero emission buses for two CaFCP members -- AC Transit in Oakland and SunLine Transit in Thousand Palms, Calif. The hydrogen-fueled buses are being constructed through a collaboration between Van Hool, UTC and ISE. By the end of 2005, several thousand people per day will ride on hydrogen buses in California.

#### **6. Air Products Selects Proton for Electrolysis in Hydrogen Station**

[Air Products](#) has selected Proton, a subsidiary of Distributed Energy Systems Corp., as the preferred supplier for its electrolysis-based hydrogen energy stations. California's South Coast Air Quality Management District (SCAQMD) recently selected Air Products for fueling stations to be placed in Burbank, Riverside and Santa Monica. Air Products and Proton are also collaborating on fueling stations to be located in Vermont and at a station soon to be dispensing hydrogen for bus transportation at the University of Nevada-Las Vegas.

#### **7. Ballard Announces US\$30 Million Transaction with EBARA**

[Ballard Power Systems](#) signed of a Memorandum of Understanding (MOU) with Japanese partner EBARA Corp. (EBARA) and their jointly-owned company, EBARA BALLARD Corp., related to a transaction that will provide funding for the next generation of cogeneration fuel cell stack and system technology. The transaction will provide Ballard approximately US\$30 million in cash through development funding and equity contributions

#### **8. CMR Fuel Cells Claims Methanol Fuel Cell Breakthrough**

Cambridge-based [CMR Fuel Cells](#) said it has made a breakthrough with a new design of fuel cell that is a tenth of the size of existing models and small enough to replace

conventional batteries in laptop computers. "It's also instantly rechargeable," says Michael Priestnall, CTO at CMR. The design, which initially will run on methanol, was based on a new type of fuel stack that mixed air and fuel. Up to now, fuel stacks have typically relied on a complete separation of the two. CMR is backed by venture capitalists including Conduit Ventures, a specialist fund backed by Shell Hydrogen, Johnson Matthey, Mitsubishi, Danfoss and Solvay.

#### **9. President Bush Demonstrates Hydrogen Progress**

On May 25, as a [DaimlerChrysler F-Cell](#) vehicle was being refueled in Washington, DC, President George W. Bush reinforced the need for hydrogen programs. The event marked another milestone in the progress of a variety of vehicles funded through the Department of Energy (DOE) Hydrogen Learning Demonstration Program. The F-Cell on display with the President was one of the 30 fuel cell vehicles DaimlerChrysler has committed under the DOE program. DaimlerChrysler has the largest fleet of fuel cell vehicles in the world including transportation buses, medium duty vans and passenger cars.

#### **10. World Environment Day Mayors Conference**

On June 1, mayors of the world converged in San Francisco to develop a new accord and commitment to clean energy. The California Fuel Cell Partnership had a major presence, displaying hydrogen fuel cell buses and other fuel cell vehicles. United Nations [World Environment Day](#) was created to bring together the world's mayors to share their environmental innovations and commit to taking action towards environmental sustainability. World Environment Day programs and workshops foster global collaboration and the adoption of Urban Environmental Accords -- commitments that are tailored to the unique characteristics of each city.

#### **11. NHA State and Regional Initiatives**

At the recent NHA convention, representatives of dozens of state and regional hydrogen programs/initiatives met together for the first time. The group concurred it would be helpful to have information on the various programs available in one convenient location. Thanks to NHA, that information can now be found at <http://www.hydrogenus.org/stateInits.asp>.

#### **12. CHBC 2005 Meeting Dates - Save These Dates**

September 16 - SCAQMD, November 18 - So Cal Location TBD

#### **13. CHBC Silver Members**

CHBC gives a big thanks to our growing list Silver Members who are major contributors to our growth and success. Click here to learn about our [Silver Members](#).

#### **14. 2005 CHBC Board of Directors**

President - Henry Wedaa  
 Vice President - Paul Scott, ScD  
 Secretary - Josh Mauzey  
 Treasurer - John Williams, PE  
 Managing Director - Catherine Rips  
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Director at Large - Jon Slangerup  
Ex-Officio Government Liaison - Shannon Baxter-Clemmons, PhD  
To contact the board, please click [info@californiahydrogen.org](mailto:info@californiahydrogen.org).

**15. Be a Member of the California Hydrogen Business Council**

Be involved with the leaders in making the hydrogen economy a reality. CHBC is a non-profit organization, which offers a common meeting ground for discussing the technologies, methodologies, and opportunities in the hydrogen economy. Silver Membership is \$1,000 per year and allows organizations to send five people to each meeting at reduced member rates, plus provides valuable marketing opportunities. Individual membership is \$200 per year. To join, visit our website or call (760) 341-2924 with your credit card.

We welcome important news from our members for inclusion on our website and in next month's report. Please send to: [info@californiahydrogen.org](mailto:info@californiahydrogen.org).

Thank you for helping build a great organization.

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