CTE Delivers Birmingham Fuel Cell Bus

Birmingham, Alabama - April 17, 2014 - The Center for Transportation and the Environment (CTE) is excited to announce delivery of a new zero emission transit bus to Birmingham-Jefferson County Transit Metro Area Express (MAX) for regular daily use. Yesterday, as part of his Invest in America tour, US Secretary of Transportation Foxx rode the fuel cell bus viewing several key Birmingham transit facilities.

MAX will operate the prototype bus alongside its fleet of CNG and diesel buses for two years. This demonstration is made possible by the National Fuel Cell Bus Program (NFCBP), a Federal Transit Administration (FTA) funded initiative. Additional support was provided through an FTA research initiative managed by the University of Alabama at Birmingham. Senator Richard Shelby commented, “This program has created the first hydrogen fuel cell bus built in the Southeast, and the first to be operated in Alabama. It means more American jobs and less dependence on foreign oil, and I'm pleased to support it.
The all-electric drive system and fuel cell power system were integrated by Embedded Power Control (EPC) on board an EVAmerica 32’ transit bus. The bus features a 75kW Ballard HD6 fuel cell and state of the art Altairnano lithium-ion batteries. The fuel cell system converts on-board hydrogen to electricity to power the electric drive system, emitting only water instead of harmful pollutants. The team expects to achieve a fuel economy nearly twice that of conventional diesel buses as has been previously demonstrated by other US fuel cell buses such as those at AC Transit in Oakland, California (7.55 mi/diesel gal equivalent).

Air Liquide Industrial U.S. LP (Air Liquide) designed and constructed the hydrogen fueling station located at the MAX bus maintenance facility. The hydrogen fueling system will provide a daily average of 20 kg of hydrogen dispensed at one kg per minute through an automated 350 bar system. The University of Alabama Birmingham will conduct research and data acquisition and analysis during the program. The National Renewable Energy Laboratory will evaluate the overall project alongside other fuel cell bus demonstration programs in the U.S.

CTE and the Project Team provided hands on training to more than 80 local first responders in January. Air Liquide and EPC also led MAX drivers, maintenance staff, and management in operations and safety training. The bus is beginning operations in April 2014. A ribbon cutting will be held later this year.

Erik Bigelow, Senior Project Manager at CTE notes, “This bus represents a significant technical achievement by bringing the latest hydrogen fuel cell technology, as well as the first hydrogen fueling station to Alabama. We are excited to work with MAX, UAB and the City of Birmingham to get this bus into daily service.”

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**About CTE**
The Center for Transportation and the Environment (CTE) is a nonprofit, 501(c)(3) organization based in Atlanta, Georgia with a west coast office in Berkeley, CA. CTE facilitates the rapid development, commercialization, and public acceptance of alternative fuels and advanced transportation technologies. Since its founding in 1993, CTE has managed a portfolio of more than $260 million in federal, state, and local cost-shared research, development, and demonstration projects involving more than 200 organizations in the advanced transportation technology field. CTE has facilitated and leveraged funding for its projects and initiatives from the U.S. Departments of Defense, Energy, Interior, and Transportation, as well as from the U.S. Army, Environmental Protection Agency, and NASA, among many others. [www.cte.tv](http://www.cte.tv)

**About Air Liquide**
World leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with more than 50,000 employees and serves more than 2 million customers and patients. Oxygen, nitrogen and hydrogen have been at the core of
the company’s activities since its creation in 1902. Air Liquide’s ambition is to be the leader in its industry, delivering long-term performance and acting responsibly. www.us.airliquide.com

**About Ballard**

Ballard Power Systems (NASDAQ: BLPD)(TSX: BLD) provides clean energy fuel cell products enabling optimized power systems for a range of applications. Products deliver incomparable performance, durability and versatility. To learn more about Ballard, please visit www.ballard.com

**About EPC**

Embedded Power Control designs and manufactures motor drives, DC-DC converters, vehicle system controllers, and other components for advanced technology vehicles. EPC technology is deployed in commercial service by CARTA and in a variety of research vehicles. EPC also designs and manufactures industrial motor drive components for TMEIC and provides its own drive system components directly to end users including NRG, Southern Company, and GE Energy. EPC is in Salem, Va. www.thinkepc.com