

HTUF™ Dialog

Nov/Dec 2011



11th Annual HTUF Conference Highlights Expanded Technology Focus

The H in HTUF has broadened to include hybrid, electric and advanced technologies, and this October, business, technology and policy leaders gathered to discuss industry advancement at the 11th Annual HTUF Conference held in Baltimore. Over 45 sponsors and exhibitors and 450 attendees participated in workshops, panels, technology demonstrations and the HTUF Ride and Drive.

At the conference, CALSTART's E-Truck Task Force unveiled key findings and recommendations for advancing the electric truck industry (see article, page 3).

The 50,000 sq. ft. HTUF 2011 Expo featured a wide range of vehicle systems, including: pure electric, plug-in hybrid, hybrid electric, hydraulic hybrid, and work-site electrification.

Policy and funding incentives were a key topic. Maryland Governor Martin O'Malley unveiled two initiatives for Maryland truck owners. New York City announced it was close to unveiling its clean truck purchase voucher, and California signaled it is expanding its HVIP voucher to include lighter commercial e-

trucks and work site idle reduction systems.

A bipartisan panel of key Congressional staff observed there might still be hope for hybrid and electric incentives at the federal level. HTAG, the Hybrid Electric and Advanced Truck Action Group, is pursuing this.

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HTUF is a national, multi-year, user driven program to speed the commercialization of hybrid, electric and advanced technologies for the medium and heavy-duty industries. HTUF is operated by CALSTART in partnership with and under contract to the US Army TARDEC National Automotive Center.



Attendees at the 11th Annual HTUF Conference in Baltimore this October were able to test drive over 40 hybrid, electric and advanced medium and heavy duty trucks and buses. Major sponsors of the event included BAE Systems, Eaton, Freightliner, Azure Dynamics, Hino Trucks and Southern Company.

View HTUF in Action!

Check out the
HTUF Ride and Drive
Video

<http://bit.ly/vrG0PW>

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HTUF Working Group Updates: Construction Equipment Test Results Coming; Telecom Working Group to Issue RFP

HTUF Working Groups are targeted, user-driven teams made up of leaders from commercial and military fleets interested in using hybrid and advanced vehicles for specific applications. CALSTART organizes and facilitates the groups to determine if common truck platforms might work as advanced vehicles. The groups then outline common performance specifications and business cases, with the intent of working with manufacturers to build and sell such trucks.

Following are updates on current HTUF Working Groups (WGs):

The Commercial Construction Equipment Working Group (CCEWG) is in the midst of completing two initial demonstration projects. In the first, the Army and Navy evaluated Caterpillar's D7E hybrid-electric bulldozer with HTUF providing logistical and analytical support. Data was collected on fuel economy and productivity. In the second, the same parties are evaluating the performance of a backhoe loader retrofitted with a new Eaton hydraulic pump system. Testing results will be released to WG members in early and late spring 2012, respectively.

At the HTUF National Conference, the CCEWG met with the National

Fluid Power Association as part of an initiative to develop duty cycles for some common pieces of construction equipment. Most duty cycles used in the construction equipment sphere tend to be proprietary, so independent tests and evaluations are required for objectivity.

The Telecom Working Group released a Request for Information to OEMs and suppliers for class 2 to 4 hybrid or ePTO trucks used in trouble response, spooling/splicing, or light-aerial applications. Respondents met with the working group at the recent HTUF National Conference and had the opportunity to ask direct questions of the telecom companies. Vehicle specifications and key performance parameters are being refined based on those conversations and an RFP will be released before the end of 2011. The trucks will then be demonstrated starting in late 2012 in telecom fleets.

The Military Installations Working Group just completed its first hybrid truck deployments. Four 2.5-ton stake trucks (2 hybrid, 2 conventional diesel) will be deployed at Naval Base San Diego and data will be collected on fuel economy and performance. The other branches of the military are looking for the best opportunities to deploy non-tactical hybrid trucks in their domestic facilities in the near future. The working group is also working with the US Dept. of Defense to investigate ways to accelerate hybrid truck purchases in the military.

Working Group Updates continued on p. 4



The Caterpillar D7E hybrid-electric bulldozer is currently under evaluation by the Army and Navy, with HTUF's Commercial Construction Equipment Working Group providing logistical and analytical support.

E-Truck Task Force Unveils Key Findings and Recommendations

CALSTART's E-Truck Task Force (E-TTF) held its seventh meeting at the HTUF 2011 National Conference this October. The purpose of the workshop was to publicly share and discuss the key findings, recommendations and next steps for the Task Force.

The overall goal of the E-Truck Task force is to speed and support effective E-Truck production and use. Based upon the initial Key Findings (see Sept/Oct edition of the HTUF Dialog), the Key Recommendations of the Task Force are as follows:

- Call on industry to institute a battery-leasing model, link sales expansion to adequate parts and support networks and increase quality control
- Maintain or increase R&D for these technologies
- Seek support incentives for incremental costs
- Encourage fleets to require a service turnaround minimum before purchase
- Create a commercial EV charge rate and eliminate/reduce demand charges



Gary Guzy, Deputy Director of the White House Council on Environmental Quality (DEQ) takes a spin in Peterbilt's hybrid class 8 refuse truck. Guzy kicked off the annual HTUF Ride and Drive Event in Baltimore.

- Create a clearinghouse for data-sharing on E-Trucks.

To address the need for better guidance on building a business case for E-Trucks, the Task Force developed an "E-Truck Business Case Calculator" that illustrates the best applications and ways to use an electric truck to recoup the initial purchase investment.

To help E-Truck fleets understand their options, trade-offs and costs when setting up an EV charging infrastructure, the E-TTF created an infrastructure-planning template based upon fleet size. The template addresses power requirements, cost estimates, siting considerations and availability of subsidies.

After receiving feedback on the E-TTF's findings and proposed recommendations, CALSTART will publish a white paper documenting this information. The recommendations are now being used as an action plan for industry, fleet and policy activities.

For more information, visit:

www.calstart.org/Projects/E-Truck-Project.aspx



CALSTART President and CEO John Boesel chats with Margo Oge, Director, EPA Office of Transportation and Air Quality, on the HTUF Expo floor. Freightliner's hybrid electric Dunbar Armored truck is shown in the background.

Working Group Updates,

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The Refuse Truck Working Group has been collecting data from fleets currently operating hybrid refuse trucks to provide a comparative analysis of drive cycle characteristics and productivity parameters. Feedback to the fleets, manufacturers and suppliers will be provided to assess relative performance and make improvements as necessary. The City of Spokane and the City of Columbus recently joined the group, which now consists of eleven fleets—two private and nine public.

The group is currently open to fleets only, but is scheduled to release a report in mid to late-2012 providing the comparative analysis of vehicle performance.

To develop a representative Class 8 Regional Delivery duty

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cycle, the **Class 8 Working Group** is currently collecting data on two conventional diesel trucks located in Southern California: a Pepsi Beverage Company truck and a Frito-Lay North America truck. This activity will gather data from over 60 days and 15,000 miles of operations. The next data collection activity is planned with FedEx Freight in the Dallas/Fort Worth area and will collect data on two trucks through January 2012. Purolator in the Toronto area and UPS in California have also signed on to participate in the data collection phase.

The WG held a meeting at the HTUF 2011 Conference to present the current data collection activities and prioritize the list of Key Performance Parameters (KPPs). The finalized list of KPPs will be submitted to OEMs in the first half of 2012, with the target of having hybrid Class 8 trucks on the road in 2012 or early 2013.

HTUF Conference Highlights,

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Wells Fargo Bank and clean tech investment firm Capricorn Investments LLC participated in an industry funding panel and agreed that the movement toward more efficient commercial vehicles is "inevitable" and the pace of technological change is accelerating.

The U.S. Department of Commerce announced an award to CALSTART for the development of a U.S.-China Clean Truck Technology Forum. This partnership will connect U.S. and Chinese companies to promote the export of American clean truck and bus technologies to China.

CALSTART's prestigious Blue Sky Awards for 2011 honored two leaders: Coca-Cola was recognized for having the largest heavy-duty hybrid electric fleet in North America. Paul Skalny, Director of the Army's TARDEC-National Automotive Center, was singled out for his leadership in driving change in advanced military and commercial vehicles.

This year's Ride and Drive was kicked-off by Gary Guzy, Deputy Director of the White House Council on Environmental Quality (CEQ), and featured over forty advanced technology vehicles, from hydraulic hybrid refuse trucks to range-extended electric trucks.

Join us in Charlotte next September 17-20 for the 12th HTUF National Conference & Expo. Visit htuf.org for details!



March 5-8, 2012, Indianapolis, IN

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www.calstart.org/events
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The HTUF Dialog is a bi-monthly publication from CALSTART highlighting news and programs relevant to emerging technologies in the medium- and heavy-duty truck and bus industries. For more information on HTUF or other CALSTART programs, contact us at calstart@calstart.org or call 626.744.5600.