



hybrid (H-TUF) truck users forum

Hybrid DiaLog

May/June 2003

Issues of Interest for Commercializing Hybrid Trucks

Utility/Specialty Working Group - Update Draft Performance Spec Firming Up

The Utility Working Group held a **users-only** meeting in mid-May to discuss and finalize their draft performance specification for the utility hybrid truck. The main focus of the discussion was whether there remained any "sticking points" to this draft, or whether it was ready to begin circulating to OEMs for comment ([click here to see draft spec](#)).

Meeting participants confirmed that the truck the large majority of them want **must operate as long a work period as they need** – meaning, it will run as long as they keep adding fuel to the tank (diesel or other), just like a standard diesel truck. It will not run out of energy. They confirmed that the energy stored on board is needed for engine-off operation at a work site. Stored energy could also be used to give electric-only driving range for those fleets desiring the capability, but this is likely an option for most.

[More: Click for Page 3](#)

WATCH YOUR E-MAIL!

H-TUF National Meeting Coming

The next national gathering of the Hybrid Truck Users Forum has been slated for Fall/Winter 2003. Final dates and location are being negotiated. There is much new information to report and vehicles to show to users. *Pencil in September and we will have more information SOON!*

New Working Group Forming

Beverage and Regional Delivery fleets are being contacted to profile the segment(s) and bring together users to form a working group. To learn more see "What are working Groups?" in this issue and please contact Larry Wnuk (lw nuk@calstart.org) or Bill Van Amburg (bvanamburg@calstart.org).

From NewsNotes Recent Hybrid News

FedEx Boosts Hybrid Market

The market for hybrid powertrains in commercial vehicles got a boost when FedEx Corporation officially announced its hybrid truck goals - including pre-production commitments.

[Click here for a link to the FedEx release.](#) (H-TUF Delivery Working Group participants received a briefing on this effort in February).

Dana, Permo-Drive Team on Hybrid

Dana Corporation has signed a preliminary agreement with Permo-Drive Technologies Ltd. to supply an innovative hydraulic regenerative braking and propulsion system for use in the U.S. Army's Family of Medium Tactical Vehicles (FMTV). The Regenerative Drive System (RDS) can potentially increase load carrying capacity for the FMTV with improved braking and propulsion performance supplied by the hydraulic hybrid

[More: Click for Page 4](#)

Also Inside this Issue

Utility Working Group: Prioritized Performance Parameters DRAFT list. **Page 2** [Click here.](#)

Parcel Delivery Working Group: Update on status - conference call possible in mid-June. **Page 3** [Click here.](#)

What Are Working Groups?: Description of the Working Group process. **Page 4** [Click here.](#)



Utility/Specialty Hybrid Truck Key Performance Parameters

DRAFT – Performance Specifications

Truck Size:	17,500 – 33,000 GVW
Truck Description:	Utility Trouble or “Bucket” Truck; telecom/cable service truck
Duty Cycle:	On call, mostly urban driving, multiple (3+) service calls per day, average time 1-2 hours per call, engine idles to operate hydraulics/lift/tools, carries 30-50-foot boom

Top 15 *Ranked** Performance Parameters:

1. **Maintain base vehicle dimensions and core capability**
2. **No decreased payload capacity**
3. **Meet or exceed baseline truck’s reliability, durability, maintainability, reparability**
4. **Ability to merge with traffic on freeways**
5. **Transparent to user from vehicle and lift perspective – same performance as diesel**
6. **Significant increase in fuel economy, decrease fuel use over diesel**
-50% increase fuel economy; 33% cut in fuel use
7. **Overall lifecycle costs less than or equal to diesel**
8. **Reduce emissions over comparable diesel truck**
-Meet or exceed 2010 EPA standards
9. **65 mph top speed**
10. **Must provide hydraulic power for lift and tools**
11. **Sufficient bin space and 11 foot clear bed space**
12. **Generate field power**
-5 kw – 17 kw (we will propose a selection process)
13. **Must be able to tow trailer**
-10,000 lbs weight most common (also 24,000)
14. **Adequate ground clearance**
15. **Noise levels lower than diesel truck**

Other Issues Raised (not all performance):

1. **EPA credits with purchase (ranked overall #12)**
2. Vehicle costs not exceed 10-15% more than diesel (#18 overall)
3. Off highway traction (#19 overall)
4. Strong residual value (#21 overall)
5. Maintenance 50% better than diesel (#22 overall)
6. All-electric range 5-10 miles/grid connect (#23 overall)

** based on a weighted analysis of preferences from the participating utility fleets.*

Utility Working Group - Spec Update - *continued from page 1*

This stored energy has large value as an **engine idle reduction or idle management strategy** for many of the utilities because of idling prohibitions. It also decreases engine hours of operation, a maintenance issue.

The group agreed that **next steps would include packaging the specs to be distributed to OEMs and system suppliers** to receive an initial technical feasibility assessment and comments from them.

This package could be ready in June, but will be put together with additional information from the following issues raised by participants:

1. **Power generation** - Need to better understand the power generation output levels – upper and lower limits - needed (or desired) from the truck, and whether those could be user-chosen “options” from a manufacturer.
2. **Stored energy** - Need to better understand the minimum and maximum amount of stored energy (batteries) needed (or desired) aboard the truck; this energy would be used primarily to provide lift/tool/hydraulics and lighting power when the main engine was shut down at a job site.
3. **Trailer** - Need to better understand the impacts of trailers – some utilities use them with trouble trucks, some don't. Few do on the smallest sizes. Need to understand whether trailer capability could be provided as user-chosen “options” from a manufacturer.
4. **Fuel economy** – Group agreed to leave target fuel reduction goal as is (50% increase in economy, 33% reduction use) and receive feedback on trade-offs that it might require from OEMs.
5. **Truck size** – Group agreed to provide the desired size range to OEMs and suppliers (16,000 – 33,000 GVW) and receive feedback on trade-offs that it might require from OEMs.

Utility Hybrid Working Group Next Steps

- Results of this meeting will be circulated to the Utility Users in H-TUF and also to the broader H-TUF participants.
- An additional survey will be distributed to Utility Users dealing with energy storage and power generation levels.
- An update conference call will be held in mid-June; time will be announced.
- A Performance Specification package will be sent to OEMs and suppliers in late June, perhaps in conjunction with the Williamsburg utility fleet conference.
- The Working Group will begin building a business case for the hybrid trucks after the OEM assessment package goes out.

Parcel Delivery Hybrid Working Group UPDATE

The next steps in the Parcel Delivery Working Group were aimed at setting a users-only meeting to discuss common needs and requirements for a hybrid delivery truck.

Because of difficult schedules during the spring this meeting has yet to happen but is now gearing for a phone or face-to-face meeting in mid-June.

Does your fleet operate this class of delivery truck or perform this duty cycle? Interested parties, please contact Bill Van Amburg (bvanamburg@calstart.org) or Fred Silver (fsilver@calstart.org).



Recent Hybrid NewsNotes - *continued from page 1*

system, which recaptures and stores energy during braking. The energy is stored as hydraulic oil under pressure that can be selectively released as an acceleration boost to bring the vehicle back to the desired speed. Permo-Drive claims an increase of up to 30 percent in fuel economy, and a significant improvement in acceleration provided by a 340-horsepower boost.

Strong Hybrid Presence at APTA Bus Conference

At the American Public Transportation Association's (APTA) Bus and Para Transit conference, it was clear that hybrid buses would account for a significant share of future orders. New Flyer exhibited a 40-ft hybrid model, and Gillig and Allison exhibited similar vehicles. At the hybrid bus session, New Flyer presented their 40- and 60-ft vehicles, which have strong near-term possibilities with Seattle, Washington (up to 200 vehicles) and with SEPTA (20 vehicles). In addition to these vehicles using Allison drive systems, ISE research recently won a 29-vehicle contract (with options to 150) for Long Beach for its New Flyer vehicle featuring the ISE/ELFA ThunderVolt System drivetrain. Also at the BRT session, New York Metropolitan Transportation Authority (NYMTA) presented an update of their hybrid bus fleet. NYMTA is expecting the first of its next 125 vehicles using the BAE hybrid system to arrive this fall.

For more on these and other stories, visit NewsNotes on the WestStart Web site. [Click here.](#)

Working Groups: Goals & Contacts

The **Specialty/Utility Truck Working Group** and the **Parcel Delivery Working Group** are the first focus groups to come from the H-TUF process. A third group, focusing on the Beverage and Regional delivery application segments, is in an exploratory phase. Working Groups are made up of key private or commercial fleet representatives as well as government and military fleets that operate similar vehicles. Truck makers, key suppliers, system developers and the sponsor, the Army's National Automotive Center (NAC) also are represented. The working group participants also share an interest in the benefits of using hybrid-electric trucks and desire to hasten commercial availability and affordability.

The Working Group goal is to identify a truck type, size and duty cycle that might be common among fleets within an industry segment, and determine if that platform might work as a hybrid truck. Next, the group outlines a common performance specification and develops the business case for such a vehicle. In cooperation with OEMs and suppliers, the goal then is to produce pre-production volumes of vehicles that are ultimately on a path to a commercial vehicle.

Working Groups are user-driven, representing the voice of the customer, and usually led by a fleet user. Staff support for the Working Group activities is provided by WestStart, with technical support from the NAC. OEMs and suppliers also provide assistance and ultimately produce the vehicles.

Utility/Specialty Working Group: The user's lead is Florida Power and Light. Contact: Tim Calhoun (T_Calhoun@fpl.com) or George Survant (George_Survant@fpl.com).

The Hybrid Truck Users Forum (H-TUF) is a joint project of the U.S. Army National Automotive Center (NAC) and WestStart to assist with the commercialization of heavy-duty hybrid technologies. The Army has already selected hybrids for its future combat vehicles to significantly reduce its fuel use and increase performance.

For additional information on the HTUF program, please call Fred Silver or Bill Van Amburg at 626 744-5600, or e-mail: fsilver@weststart.org; bvanamburg@calstart.org.

Do you find this publication valuable? Please let us know!