



March 23, 2009

Via Facsimile and E-Mail

The Honorable Brian Baird  
Chairman  
Energy and Environment Subcommittee  
House Committee on Science and Technology  
2320 Rayburn House Office Building  
Washington, DC 20515

Dear Chairman Baird,

**Clean Transportation  
Technologies and Solutions**

[www.calstart.org](http://www.calstart.org)

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SEMPRA / SoCal Gas

Thank you for the opportunity to submit comments for the record for the *Examining Federal Vehicle Technology Research and Development Programs* hearing on March 24, 2009. . Our comments focus on the opportunity to accelerate the development and deployment of high efficiency, low carbon truck technology through an open and cooperative process. We believe that the process described below would be a natural and valuable complement to existing federal research and development efforts.

CALSTART is a non-profit, fuel- and technology-neutral organization that is focused on accelerating the growth of the clean transportation technology industry as a way to reduce greenhouse gas emissions, improve air quality, cut dependence on oil, and create new high quality jobs. Though regional sounding in name, CALSTART functions nationally in terms of efficient heavy-duty vehicle technology. Over its 15 –year history CALSTART has worked effectively with the federal departments of Energy, Defense, and Transportation, as well as the EPA, to develop, demonstrate, and commercialize clean and energy efficient heavy-duty vehicle technologies.

The Hybrid Truck Users Forum (HTUF) was initially designed to speed commercialization of medium- and heavy-duty hybrids. HTUF is operated by CALSTART in a unique partnership with the US Army's National Automotive Center (NAC). The strength of this program has been the involvement of the users, the public, private and military fleets, in understanding and creating market pull for technologies that reduce our dependence on oil. When the program started in 2001, no truck manufacturer was willing to build a hybrid truck, while several transit bus manufacturers began to adopt hybrid technology. By 2008, however, every major truck manufacturer had announced plans to sell one or more hybrid products.

In supporting this program to date, NAC and the Department of Defense have increased the capabilities of the commercial truck and component manufacturing industry to build advanced vehicles and technologies that can support emerging military and civilian needs. As this committee considers how best to promote technological advancement in the trucking sector, we recommend leveraging the success of the HTUF model by integrating and connecting it with other research, development, demonstration, and deployment programs such as the Department of Energy's 21<sup>st</sup> Century Truck Program. Integrating HTUF into the broader technology advancement efforts would:

- Provide a clear path to market for promising early stage technologies
- Accelerate the commercialization process, generating early and additional efficiency gains and emissions reductions
- Inform the early R&D process by giving a voice to technology customers and end users
- Increase communication and cooperation between key public and private stakeholders

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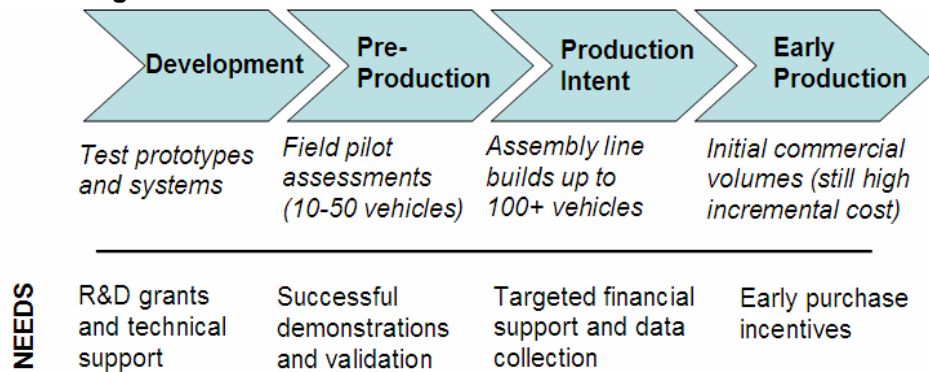


The HTUF mission is closely aligned with the technology advancement goals of the Department of Energy (DOE) and would be very valuable as a complement to the DOE's 21<sup>st</sup> Century Truck Program.

**Getting from Lab to Market**

Technology innovation and commercialization is a lengthy process with many stages, actors, and potential problems. Efforts to encourage or accelerate technological advances in targeted areas require support and funding across all stages of the innovation and commercialization process, from early research and development through pre-production and on to early market introduction. Historically, the public sector has focused on early R&D and viewed the latter stages as the responsibility of the private sector. The path from lab to market is not always clear, however, and many technologies stall in the pre-production, production intent, and early production stages. Figure 1 below outlines the commercialization stages and requirements for advanced truck technologies.

**Figure 1: Commercialization Stages and Requirements for Advanced Truck Technologies**



Since 2001, HTUF has been working to provide targeted support and bring innovative new technologies through the pre-production and production intent stages. Recently, HTUF has been actively pursuing purchase incentives to support early production and make hybrid trucks commercially available. HTUF could also play a valuable role in the initial technology development stages by aggregating and providing information about user preferences and requirements to R&D teams.

**HTUF: A Proven and Powerful Model**

HTUF was designed as a nimble, fast-track process to speed hybrids to market by focusing attention on the needs of key players who could change the industry's direction: the users themselves. HTUF focuses on developing targeted market demand, or "pull" around core, first-mover fleets in key applications. HTUF started by developing committed groups of fleets around the most promising and high profile early market applications that showed the greatest potential to support hybrid trucks. Through the action-oriented users groups, HTUF is able to aggregate user needs and give them the opportunity to signal jointly to manufacturers what they would commit to buying if it met their requirements. This aggregated user information removes some risk for manufacturers and provides a strong incentive to aggressively invest in technology advancement.

After defining key requirements, HTUF helps move fleets and manufacturers through the pre-production stages, providing targeted funding and other support for demonstration, data collection, and validation. With manufacturers and users both indicating a clear intent to move forward with hybrid technology, HTUF's Incentives Working Group is now focusing on securing financial incentives for early production. The idea is to increase early demand and production volumes, ultimately resulting in reduced production costs and a self-sustaining market that no longer requires external support.



The HTUF program has a demonstrated record of success in bringing stakeholders together, speeding technology commercialization, and ushering DOE-supported technologies into production:

- HTUF has become the key industry connection on heavy duty hybrid technologies, attracting leading commercial fleets and **every major truck maker and supplier** to the process.
- The HTUF process has **removed one to two years from the product development cycle**. As a result of HTUF, the commercial industry is now rapidly developing heavy-duty hybrid products in several market applications.
- **HTUF helped International (Navistar) and Eaton to move into production** after they received funding from DOE's Heavy Hybrid Development Program for system development and vehicle integration.
- **HTUF has helped integrate common military and commercial needs into early hybrid system designs**.
- HTUF has developed a **critical mass** of supply and demand around hybrid truck technologies, and is currently facilitating the development of purchase incentives to move the industry **toward full-scale commercial deployment**

For the past 8 years, HTUF has played a very valuable role in moving hybrid technologies from lab to market. Ongoing efforts in this area would benefit from a more formal and complete integration of HTUF into the overall process and strategic plan.

#### **Possible Roles for HTUF and connections with the DOE Program**

The HTUF model is being broadened to focus on high efficiency, low emission truck technology, building off the base of hybrid advancements. With this comprehensive focus, an expanded HTUF program could address the industry's needs in the pre-production, production intent, and early production stages. Such an effort would enjoy a close and synergistic relationship with new and existing R&D efforts at DOE and other federal agencies. This integration would:

- Bring key industry stakeholders together to aggregate information and demand, accelerating the technology development and deployment process
- Close the gap between early stage researchers and end users of technology, resulting in more focused research and a better understanding of end goals
- Provide an implementation process that builds on and complements R&D investments and successes
- Promote communication and cooperation between DOE and other federal entities with an interest in the development of clean and efficient trucks, including the Department of Defense, the EPA, and the Federal Transit Administration

We appreciate the opportunity to provide these comments and hope that the Committee recognizes the potential advantages of a technology advancement strategy for the medium- and heavy-duty trucking sector that leverages the success of HTUF.

Sincerely

John Boesel  
CALSTART, President & CEO