

The Hybrid Truck and Bus Voucher Incentive Project (HVIP)

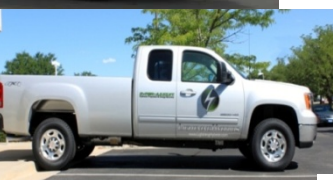


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CALSTART
February 22, 2011

This project sponsored by the California Air
Resources Board and implemented by CALSTART.

Agenda

- Who are CALSTART and TIAX?
- What is a hybrid truck? How does it work?
- What's the business case for hybrid trucks
- What is HVIP?
- How to use HVIP



Hybrid Trucks and Buses Are:

- **REAL AND IN FIRST PRODUCTION**
 - Every major truck maker has hybrids in production or pre-production
- **EXPANDING IN TYPE AND APPLICATION**
 - Most urban work truck weight classes and applications
- **EASIER TO PURCHASE**
 - California HVIP is nation-leading incentive program
- **A GOOD FIT WITH SPECIFIC APPLICATIONS TODAY**
 - Medium and heavy delivery, refuse, utility, shuttle and transit, high-idle work

Who We Are

CALSTART is a unique national, non-profit organization **dedicated to the growth of an advanced transportation technologies industry.**

TIAX is a consulting firm with over 20 years of experience **designing and implementing heavy-duty vehicle incentive programs.**

What is a Hybrid Truck?

- A hybrid is any vehicle that uses more than one source of stored energy to power the driveline
- Hybrids add complexity – normally made up of two systems working together
 - Twin energy storage and drive systems; power management; control software
- Can add significant efficiency to vehicle performance
 - Very good in driving cycles with stop and go, delivery, high idling times
- Several hybrid “flavors”
 - **hybrid electric** and **hybrid hydraulic** are most common systems; **plug-in hybrid** in development/some early models

The Case for Hybrid Trucks

Value to Users

- MPG improvement – typically 20-50% – bulk of savings
 - Fuel savings while driving and/or by allowing engine shut off during work
 - Benefits vary by application
- Some reduced maintenance (brake wear significantly reduced in certain applications)
- Reduced emissions – carbon and smog
 - May have economic value in future
- Some increased productivity

Business Case - \$3.50/gal fuel

Using conservative estimates for savings, hybrid system shows payback within vehicle lifetime

- **Beverage delivery:**

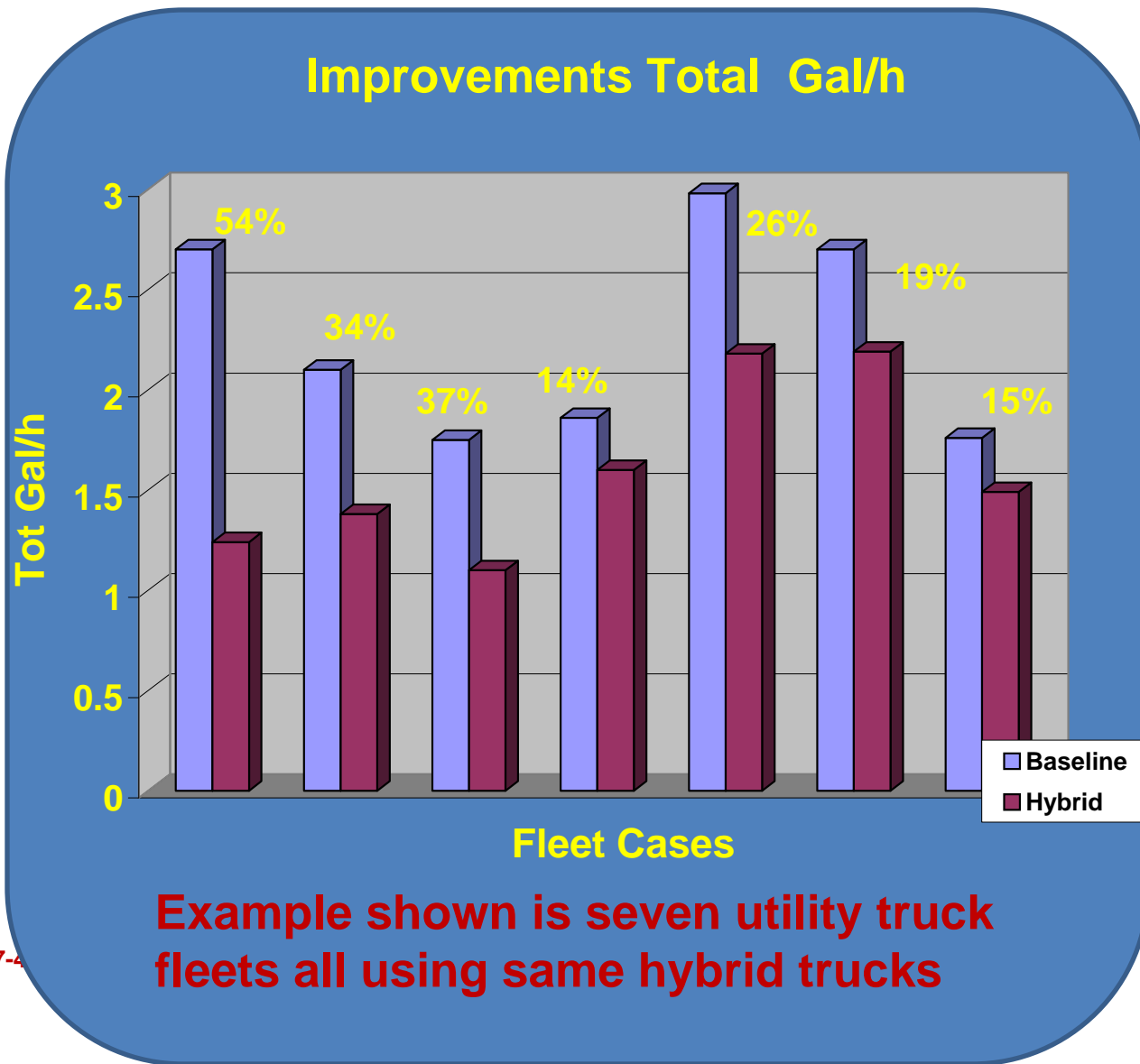
- Hybrid system provides 35% fuel economy improvement
- With HVIP (\$25k voucher) – 6 year payback

- **Package delivery:**

- Hybrid system provides 25% fuel economy improvement
- With HVIP (\$15k voucher) – 7 year payback

Fuel Savings: Vehicle Use Matters!

- Fuel consumption reduction varies from 14% to 54%
- Idle reduction an important component of fuel savings in this example
- Savings dependent on duty cycle!



What is HVIP?

What does HVIP do?

- **HVIP helps fleets buy cleaner trucks and buses faster!!**
- HVIP is a simplified incentive program created by ARB to help fleets buy hybrid and battery-electric trucks and buses.
- **How?** By addressing the biggest barrier for fleet purchase of these vehicles: high incremental cost.
- Voucher amounts designed to offset about half the incremental cost of hybrid trucks.
- Approximately **\$18 million** available for voucher funding in FY11 project
- **When?** FY11 HVIP set to launch early February

How to Request a Voucher

- Registered HVIP dealers can request vouchers on behalf of a purchaser
- Purchaser must operate vehicle in California for at least three years
- Voucher must be requested before vehicle is titled and registered
- First come, first served. Live \$ tracker on website

What is the Difference Between Voucher and Rebate Programs?

Vouchers:

- Purchaser pays the purchase amount *less* the voucher amount
- Dealer reimbursed the voucher amount

Rebates:

- Purchaser pays full cost up front and then reimbursed the rebate amount

HVIP 2011 Voucher Amounts

(New)

| Gross Vehicle Weight in Pounds (lbs) | | Base Incentive¹ |
|---|----------------|-----------------------------------|
| 8,501 – 10,000 lbs ² | Plug-in Hybrid | \$10,000 |
| | Zero-Emission | \$15,000 |
| 10,001 – 19,500 lbs | | \$15,000 ³ |
| 19,501 – 33,000 lbs | | \$20,000 |
| 33,001 – 38,000 lbs | | \$25,000 |
| > 38,000 lbs | | \$30,000 |

¹The first HVIP-eligible vehicle purchased by a fleet and ARB-certified hybrid vehicles above 14,000 lbs are each eligible for an additional \$5,000 voucher.

²This weight category includes plug-in hybrid and zero-emission vehicles only.

³Zero-emission commercial vehicles in this weight category are eligible for \$20,000

HVIP Business Case

EXAMPLE FLEET COST SAVINGS FROM HYBRID TRUCK PURCHASE

| | Incremental Hybrid Cost | HVIP Voucher | Net Hybrid Cost After Voucher | Annual Fuel Cost Savings |
|------------------------|-------------------------|--------------|-------------------------------|--------------------------|
| Package Delivery Truck | \$35,000 | \$15,000 | \$20,000 | \$2800 |
| Beverage Tractor | \$45,000 | \$25,000 | \$20,000 | \$3500 |

Assumes diesel price of \$3.50 per gallon.

This table illustrates how hybrid trucks can more than pay for themselves in annual fuel cost savings over a typical ownership period, particularly using the HVIP voucher.

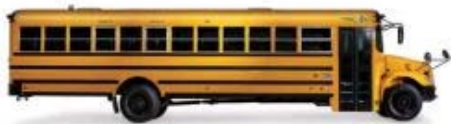
What are the Types of Hybrid Vehicles Eligible under HVIP?

- Bus
- Delivery
- Tractor
- Utility



- FCCC
- Ford/Azure
- Freightliner
- Kenworth

- NABI/ISE
- Navistar
- New Flyer/ISE
- Peterbilt
- Thomas Built



What are the Types of Electric Vehicles Eligible under HVIP?

- EVI
- Navistar
- Smith Electric



HVIP on the Web

www.californiahvip.org

TOLL-FREE HOTLINE (9am - 5pm Pacific, M-F)
1-888-457-HVIP or

Wednesday, February 17, 2010

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