

**Hybrid Truck and Bus Incentive Program (HTIP) Development  
January 13, 2009 HTIP Work Group Meeting**

***Concepts for HTIP Implementation***

The Air Quality Improvement Program (AQIP), authorized by Assembly Bill 118 (Nunez, 2007), is a new, innovative ARB air quality incentive program to reduce criteria and toxic air pollutants. At its November 5-6, 2008 AQIP public workshops, ARB staff signaled its intent to pursue a \$20-30 million Hybrid Truck and Bus Incentive Program (HTIP) as part of the AQIP FY 2009-10 Funding Plan. This discussion paper describes potential eligibility and implementation options for the HTIP. Concepts described in this document are for discussion purposes only and are intended to solicit stakeholder input. For more information regarding development of the FY 2009-10 Funding Plan and the AQIP Guidelines, please visit [www.arb.ca.gov/msprog/aqip/aqip.htm](http://www.arb.ca.gov/msprog/aqip/aqip.htm).

Background

Hybrid medium- and heavy-duty vehicles have the potential to significantly reduce criteria pollutant, air toxic and greenhouse gas emissions – particularly in refuse trucks, work trucks, delivery vans, urban buses, and other vehicles with high stop-and-go or idling duty cycles. These vehicles can also provide significant fuel economy benefits and fuel cost savings relative to their non-hybrid counterparts. Multiple configurations and classes of hybrid trucks and buses are now on the market, but these vehicles' higher cost is typically too high to justify their purchase based on fuel cost savings alone.

A large and carefully-crafted hybrid truck and bus incentive program would not only accelerate the immediate commercialization of these vehicles, but would also have significant multiplier benefits. As more vehicles are produced, production costs and sales price should decline to the point where hybrid trucks and buses are competitive with their non-hybrid counterparts, ultimately eliminating the need for incentives. An investment in incentives for new vehicle purchases will also accelerate the development and commercialization of more efficient hybrid vehicles, and hybrids in less traditional applications, such as off-road equipment, marine vessels, and locomotives.

Definition of a Hybrid Truck or Bus

Staff is considering the following definition of a hybrid truck or bus for the purposes of the HTIP:

1. The vehicle is used for commercial purposes and has a gross vehicle weight rating (GVWR) of at least 10,000 pounds.
2. The vehicle draws propulsion energy from onboard sources of stored energy that are both an internal combustion or heat engine using consumable fuel, and a rechargeable energy storage system; and
3. The maximum available power from the rechargeable energy storage system during a ten second pulse power or equivalent test is:

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- a) at least ten percent of the vehicle's total traction power for vehicles with GVWR up to 14,000 pounds, and
- b) at least fifteen percent of the vehicle's total traction power for vehicles with GVWR above 14,000 pounds.

The term "total traction power" means the sum of the peak power from the rechargeable energy storage system and the heat engine peak power of the vehicle, except that if the storage system is the sole means by which the vehicle can be driven, the total traction power is the peak power of the storage system. With a few minor exceptions, this definition of a hybrid truck or bus matches the International Revenue Service (IRS) definition of a heavy-duty vehicle eligible for a federal tax credit pursuant to the Energy Policy Act of 2005.<sup>1</sup> Staff welcomes stakeholder's suggestions regarding this definition.

### Vehicle Eligibility Options

By statute, a hybrid truck or bus must reduce criteria pollutants or toxic emissions to receive AQIP funding. ARB staff is considering the following questions to ensure this requirement is met:

- Should the HTIP require medium- and heavy-duty hybrids be ARB-certified to demonstrate vehicle-specific criteria pollutant emission reductions, or does existing data justify the assumption that these vehicles intrinsically have lower emissions?
- If funded vehicles aren't required to be ARB-certified, are safeguards needed to ensure the ARB-certified engine and verified aftertreatment devices will continue to maintain their required emission levels in the hybrid platform?

Staff is evaluating how to balance the desire for a thorough review of each vehicle's technology and emission reductions versus the need for a simple program that quickly stimulates demand for low-emission hybrid trucks and buses. Three potential options for determining vehicle eligibility for the HTIP are outlined below:

1. The vehicle must be certified as a hybrid for sale in California
  - Pros: Ability to directly link the incentive award to a specific vehicle's criteria pollutant emission benefits; ability for California to evaluate each vehicle technology
  - Cons: Time and cost to certify vehicle in California
2. The vehicle must be approved by the IRS to receive a tax credit as a qualifying heavy hybrid vehicle pursuant to the Energy Policy Act of 2005.

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<sup>1</sup> IRS; IRS Bulletin 2007-23; Notice 2007-46; *Credit for New Qualified Heavy-Duty Hybrid Vehicles*; June 4, 2007; [www.irs.gov/irb/2007-23\\_IRB/ar08.html](http://www.irs.gov/irb/2007-23_IRB/ar08.html). This definition differs from the IRS definition of a hybrid medium- or heavy-duty vehicle in two areas -- staff is proposing to specify funding is for commercial vehicles and for vehicles over 10,000 GVWR (rather than 8,500 GVWR) to exclude residential sports utility vehicles.

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- Pros: Streamlined approach; vehicles already approved by IRS wouldn't have to take additional actions
  - Cons: No evaluation of vehicle-specific criteria pollutant benefits; no assurance original certified engine and aftertreatment device emission levels are maintained in every hybrid platform; vehicles with <30 percent fuel economy benefits not eligible for IRS tax credit
3. The vehicle must meet one of the following three criteria:
- a) The vehicle is an IRS-approved qualifying heavy hybrid vehicle which also meets additional ARB requirements to ensure the California-certified and engine and aftertreatment devices shall continue to function as required;
  - b) The vehicle is approved by ARB as a hybrid, based upon vehicle test data similar to that submitted to the IRS; or
  - c) The vehicle is ARB-certified as a hybrid medium- or heavy-duty vehicle. Hybrid vehicles which are ARB-certified to significantly reduce criteria pollutants could be eligible for a higher incentive amount.
    - Pros: Streamlined for those vehicles already approved by the IRS; ability for California to weed out marginal technologies; additional funding for certified criteria pollutant benefits
    - Cons: No evaluation of vehicle-specific criteria pollutant benefits (unless using option (c)); not as simple as options #1 and #2

Staff is leaning towards Option 3 for determining vehicle eligibility, with a shift towards Option 1 if the HTIP is continued in subsequent funding years.

### Vehicle Incentive Amounts

Specific HTIP vehicle incentive amounts would likely be based upon how vehicle eligibility is defined. For example, if a vehicle must be ARB-certified as a hybrid to be eligible for funding (Option #1, above), the grant amount could be higher for vehicles ARB-certified to achieve lower emissions. Or if ARB-certification of the hybrid vehicle is not required to receive funding, vehicles that voluntarily certify and demonstrate a significant criteria pollutant emission reduction could be eligible for a higher funding amount (Option #3, above).

Vehicle manufacturers, dealers, and other stakeholders have indicated that -- due to the fuel economy benefits of hybrid trucks and buses -- an incentive for approximately half the vehicle's incremental cost would spur many purchasers to buy a hybrid rather than non-hybrid truck or bus. Based on this business model, staff is considering specific HTIP funding amounts in the ranges identified in Table 1. Staff welcomes stakeholder comments regarding which specific funding amounts per vehicle weight class would maximize the air quality benefits of the AQIP.

**Table 1: Eligible Hybrid Vehicle Incentive Amounts**

<b>Vehicle Weight</b>	<b>Base Vehicle Incentive</b>
8,501 – 14000 lbs.	\$5,000 - \$20,000
14,001 – 33,000 lbs.	\$15,000 - \$30,000
> 33,000 lbs.	\$20,000 - \$40,000

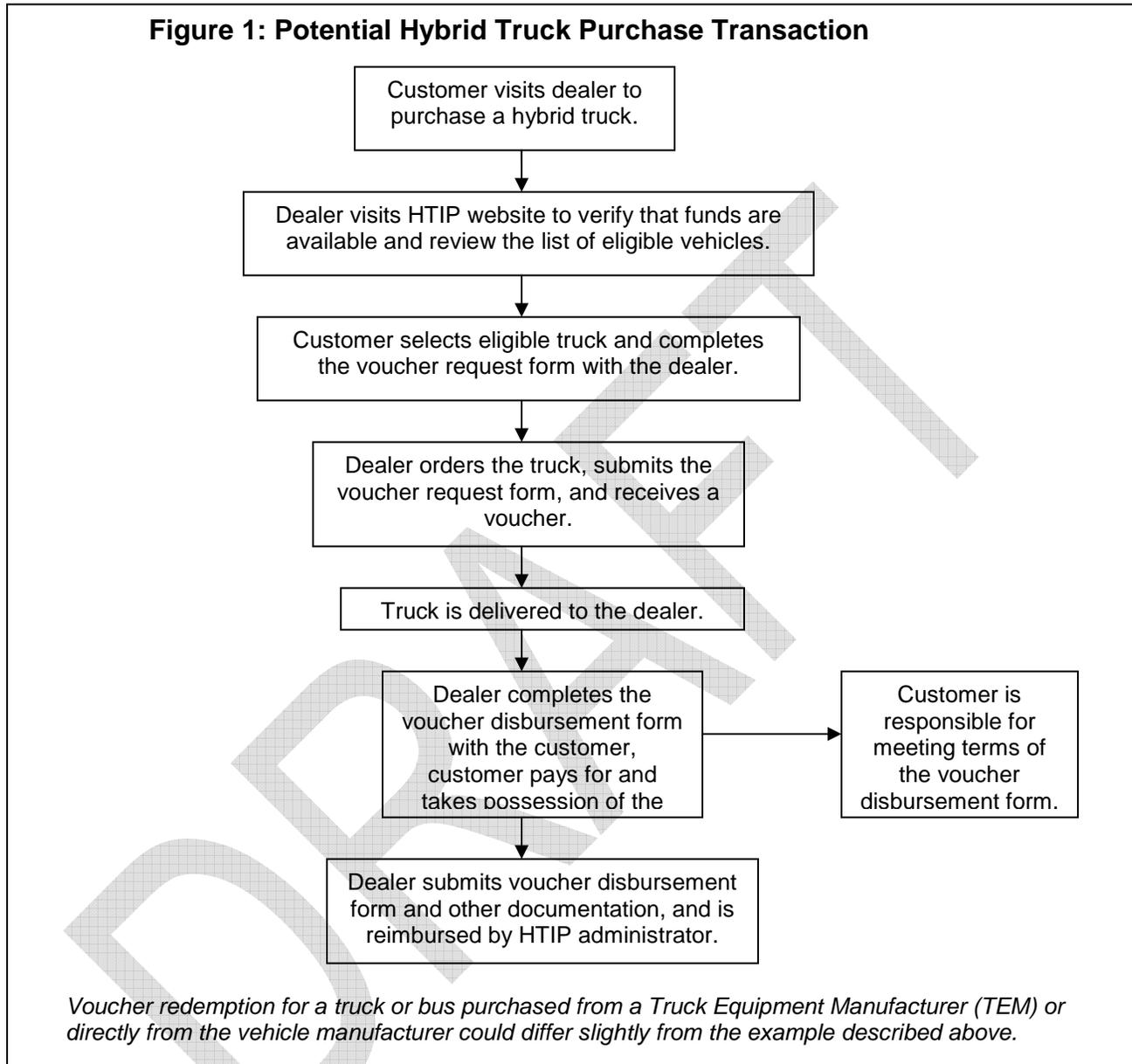
Program Implementation

Staff believes the HTIP should be geared towards accelerating the deployment of approximately the first thousand hybrid trucks and buses in California in order to jump start the market for this technology. This can best be achieved by making the program as straightforward as possible and accessible to all potential California-based vehicle purchasers. Staff is considering a voucher program in which the buyer of the eligible hybrid truck or bus would receive a voucher for the incentive amount, redeemable at the time of the final vehicle purchase. This structure is similar to that of ARB’s Alternative Fuel Incentive Program (AFIP) vouchers for zero-emission light- and medium-duty vehicles. Figure 1 describes a hypothetical truck dealer sale and voucher reimbursement transaction to illustrate how the HTIP could be implemented. Staff welcomes stakeholder comments regarding the potential implementation mechanism described below and in Figure 1.

A website developed by the HTIP administrator could include a list of eligible hybrid trucks and buses, as well as the eligible voucher amount for each vehicle. The webpage would include a voucher request form for the dealer (in concert with the purchaser) to submit at the time a specific vehicle is ordered. To be eligible for a voucher, the vehicle and purchaser must meet certain requirements, including:

1. The purchaser must be: a) a California-based business, non-profit, or government entity, or b) a business, non-profit, or government entity operating in California for at least two years (prior to the vehicle purchase order).
2. The chassis must be titled and licensed in California and the vehicle must be California-registered.
3. The purchaser must commit to keep the new vehicle for at least five years after the vehicle delivery date and that one-hundred percent of the vehicle’s operation shall occur within California during this time period.
4. The purchaser must commit to these and other requirements geared to ensure the AQIP achieves real, enforceable, and quantifiable emission reduction benefits for California.

Upon vehicle delivery, the dealer would submit a voucher disbursement form, along with other documentation (such as the vehicle invoice and a copy of DMV paperwork showing owner registration information) to receive the voucher funds. The vehicle purchaser would pay for the vehicle cost (plus applicable taxes) minus the voucher amount, and take possession of the vehicle. Staff is also considering having the voucher expire if it is not redeemed within a reasonable amount of time.



### Program Administration

Staff is evaluating the following two options for an HTIP administrator:

1. *ARB administers the HTIP directly.* ARB administration of the program could help keep program administration costs down, and would facilitate program oversight and accountability.

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2. *A third party is selected via a competitive process to administer the HTIP.* If a third party is selected to administer the program, eligibility requirements and selection criteria for a third party administrator would be described in detail in the solicitation. The choice of administrator would likely be evaluated based upon factors such as: ability to maximize emission reductions; demonstrable resources, staffing and experience with hybrid technology, manufacturers, and vendors to successfully implement the program statewide; match funding provided or ability to leverage additional emission reductions; program simplicity and transparency; administrative costs; and level of oversight and accountability.

Staff believes administration and outreach costs for the HTIP should not exceed five percent. Staff welcomes comments regarding whether the HTIP could most effectively be implemented by ARB or a third-party administrator, as well as the appropriate maximum allowable administration funding for this project category.

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