Public Workshop

Development of New Hybrid Requirements for Medium- and Heavy-Duty Vehicles and Updates to the Interim Certification Procedures

February 3, 2010

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
Air Resources Board

Outline

- Overview of AB 32 Scoping Plan Measure
- Overview of Hybrid Incentives and Regulatory Approach
- Background on Current Test Procedures
- Timeline
- Next Steps
- Comments and Discussion
Reducing Greenhouse Gas (GHG) Emissions

- California’s Global Warming Solutions Act (AB 32):
  - Reduce GHG emission levels to 1990 levels by 2020
  - Scoping Plan outlines strategy
  - Adopt measures by January 1, 2011; operative beginning January 1, 2012

California GHG Emissions
2002-2004 Average

- Transportation (179 MMTCO2E)
  - Aviation (Intrastate Only)
  - Ships 2%
  - Rail 2%
  - Heavy-Duty Trucks 19%
  - Passenger Cars 75%

MMTCO2E = million metric tons carbon dioxide equivalent emissions
Medium- and Heavy-Duty Vehicle
GHG Reduction Measures

- GHG Reductions through Vehicle Efficiency
  - SmartWay Truck Efficiency (T7)
    - Reduce aerodynamic drag and rolling resistance
    - Adopted December 2008
    - Implementation starting in 2010
  - Medium- and Heavy-Duty Vehicle Hybridization (T8)
    - Increased fuel efficiency

Medium- and Heavy-Duty Vehicle Hybridization Measure

- Achieve 0.5 MMTCO$_2$E benefit by 2020
- Implement through regulation and/or incentives
- Scoping Plan assumptions:
  - Starting 2015, all new trucks sold use hybrid technology (10,001-19,500 GVWR)
  - Greatest benefit in vocations with significant urban, stop-and-go, idling, and PTO operations
Why Hybrids?

- Bridging technology to meeting long-term GHG reductions
- Proven technology
- Reduce dependency on foreign oil
- Opportunity for substantial fuel cost savings
- Spur advances in battery technology and engine efficiency
- Job retention and creation

Available Hybrid Vehicles
Medium- and Heavy-Duty Vehicle Hybridization

Two step process:
1) Incentives- Hybrid Truck and Bus Voucher Incentive Project
   • Early reductions starting 2010
2) Regulation
   • Reductions starting prior to 2015

Hybrid Truck and Bus Voucher Incentive Project (HVIP)

- AQIP provides $20M in FY 2009-10
  – Potential for additional funds through 2015
- Focus on Long-Term Benefits
  – Accelerate Market Penetration
  – Increase Consumer Acceptance
  – Spur Production Volumes → Decrease Cost
**HVIP: 2009-10 Funding Year**

- Administered by CALSTART
- Fund up to 800 hybrid trucks and buses
  - $10 – 45k per eligible vehicle
- Project launched this week
  - Vouchers available on a first-come, first-served basis

For more information:
www.californiahvip.org

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**HVIP: Key Element of Hybridization Measure**

- Achieve early emission reductions
  - Could provide significant progress towards Measure T8 2015 emission reduction target
- Provide key data
  - Vehicle availability and costs
  - Market penetration and primary vocations
  - Vehicle usage
- HVIP not sufficient to meet 2020 emission reduction obligation
Potential Regulatory Approach

- Target new medium- and heavy-duty on-road vehicles
- New purchase vs. manufacturer requirement
- Considering phased approach
  - Target specific vocations with greatest benefit
  - Follow up with broader regulation

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Preliminary 2008 Population Estimates

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<tr>
<th>CATEGORY</th>
<th>FUEL</th>
<th>POPULATION*</th>
<th>% OF TOTAL POPULATION</th>
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<td>Diesel</td>
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<td>Gasoline</td>
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Source: DMV (2008) for 14-17 and SWCV, EMFAC2007 for urban buses

* Total population of vehicles in each weight category potentially impacted by proposed requirements.
Current Hybrid Test Procedures

- Interim, approved by Board Oct. 2002
- Focused on hybrid urban buses complying with rule
- Based on SAE J2711 (April 2002)
- Duty cycles: UDDS, OCTA
- Addresses criteria pollutants, but not designed to address GHGs

Reasons for Amending

- Include test procedures for GHGs
  - Support/coordinate with reg.
  - Quantify reductions from HVIP
- Include technology changes since 2002
- Apply lessons learned since 2002
- Widen applicability to other vehicle types
Questions to Consider (see handout)

- How to define “hybrid” vehicle?
- Who is the regulated entity?
- How to identify/define appropriate vocations?
- Updates to current criteria pollutant test procedures
- What is best test method for GHGs?
- Representative duty cycle(s)
- Test considerations for different hybrid configs?
- Others?

Tentative Timeline

- HVIP available this week
- Next workshop: May 2010
- 3-4 additional public workshops
- Tentative board date: mid-2011
- Regulation implementation: prior to 2015
Next Steps

- Technical test procedures development workgroup
- Inventory analysis
- Individual stakeholder meetings
- Technology and cost evaluation

Contacts

http://www.arb.ca.gov/cc/hybridtruck/hybridtruck.htm

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Comments and Discussion
(see handout)

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