

# Public Workshop

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

February 3, 2010



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## 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

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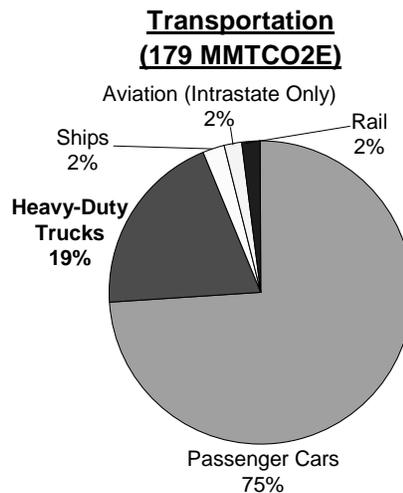
## Reducing Greenhouse Gas (GHG) Emissions

### ■ 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

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## California GHG Emissions 2002-2004 Average



<sup>1</sup>MMTCO<sub>2</sub>E = million metric tons carbon dioxide equivalent emissions

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## **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

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## **Medium- and Heavy-Duty Vehicle Hybridization Measure**

- Achieve 0.5 MMTCO<sub>2</sub>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

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## 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

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## Available Hybrid Vehicles



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## **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

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## **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

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## **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](http://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

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## 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

CATEGORY	FUEL	POPULATION*	% OF TOTAL POPULATION
8,500 - 10,000 GVWR	Diesel	5,470	5.6
	Gasoline	25,573	8.3
10,001 - 14,000 GVWR	Diesel	7,750	10.2
	Gasoline	9,033	10.8
14,001 - 33,000 GVWR	Diesel	19,757	9.8
	Gasoline	8,668	15.1
33,000+ GVWR	Diesel	13,142	10.1
	Gasoline	269	2.4
URBAN BUSES	Diesel	11,049	
	Gasoline	3,219	
SWCV	Diesel	13,337	
	Gasoline	354	

Source: DMV (2008) for T4-T7 and SWCV, EMFAC2007 for urban buses

\* Total population of vehicles in each weight category potentially impacted by proposed requirements.

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## **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

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## **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

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## **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?

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## **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

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## Next Steps

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

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## Contacts

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

<b>Jack Kitowski, Chief</b> Emissions Reductions Incentives Branch (916) 323-6169, <a href="mailto:ikitowsk@arb.ca.gov">ikitowsk@arb.ca.gov</a>	
<b>Lucina Negrete, Manager</b> Air Quality Implementation Section (916) 445-6138, <a href="mailto:lnegrete@arb.ca.gov">lnegrete@arb.ca.gov</a>	<b>Johanna Levine, Lead Staff</b> Medium and Heavy-Duty Vehicle Hybridization Regulation (916) 324-6971, <a href="mailto:jlevine@arb.ca.gov">jlevine@arb.ca.gov</a>
<b>John Kato, Manager</b> Innovative Strategies Section (916) 322-2891, <a href="mailto:jkato@arb.ca.gov">jkato@arb.ca.gov</a>	<b>Jessica Dean, Lead Staff</b> Medium and Heavy-Duty Vehicle Hybrid Certification Procedures (916) 322-8748, <a href="mailto:jdean@arb.ca.gov">jdean@arb.ca.gov</a>

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**Comments and Discussion  
(see handout)**

**webcast e-mail:  
sierrarm@calepa.ca.gov**