



Proposed Greenhouse Gas Measure

California Environmental Protection Agency
Air Resources Board

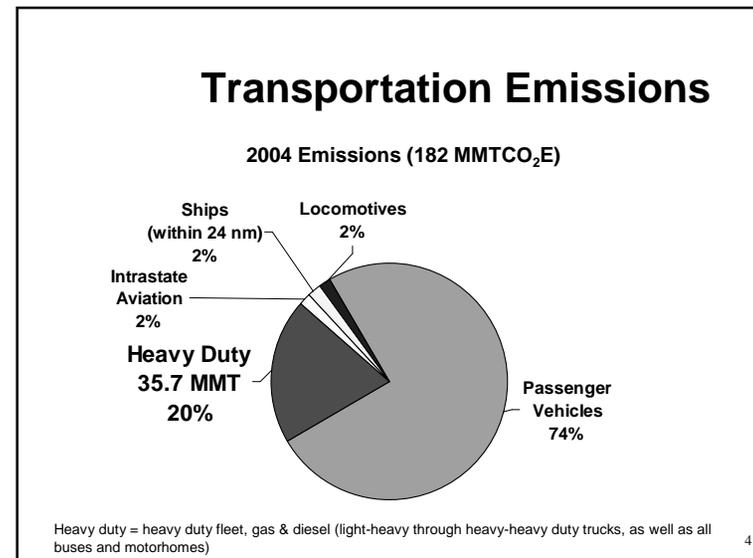
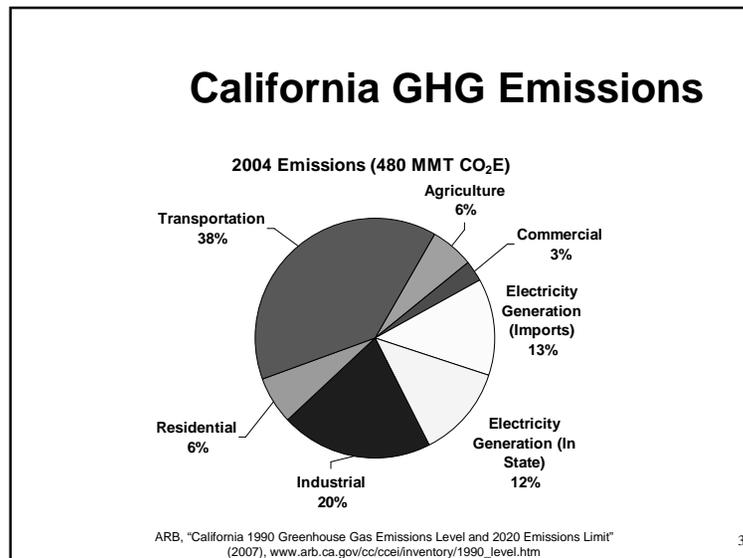
1

Reducing Greenhouse Gas (GHG) Emissions



- California's Global Warming Solutions Act or AB 32 requires
 - Reduce GHG emission levels to 1990 levels by 2020
 - Develop early action measures enforceable by 2010

2



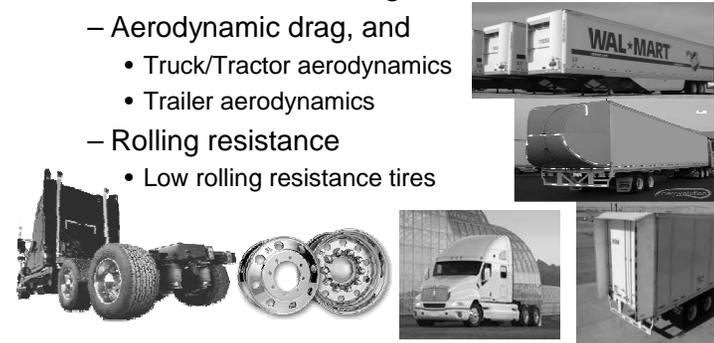
Medium- and Heavy-Duty Vehicle GHG Reduction Measures

- GHG reduction through
 - SmartWay Truck Efficiency
 - Aerodynamic drag and rolling resistance reduction
 - Scheduled board hearing date: 2008
 - Implementation in 2010
 - Hybridization and engine efficiency improvements
 - Scheduled board hearing date: 2011

5

SmartWay Truck Efficiency

- GHG reduction through reduction of
 - Aerodynamic drag, and
 - Truck/Tractor aerodynamics
 - Trailer aerodynamics
 - Rolling resistance
 - Low rolling resistance tires



6

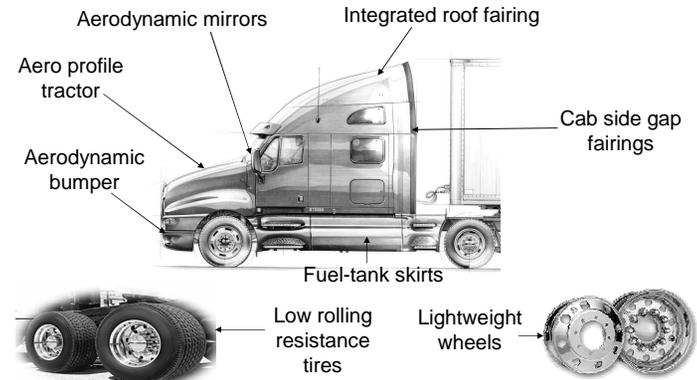
SmartWay Truck Efficiency Applicability

- General applicability
 - New and in-use Class 8 tractors and single unit trucks
 - GVWR > 33,000 lbs
 - New and in-use trailers
 - Length 53' or greater¹
 - CA and out-of-state based trucks, tractors, and trailers operating in California
- Scheduled for adoption in October 2008

¹The US EPA designation for a SmartWay Trailer specifies the trailer length to be 53' or longer. ARB staff will evaluate the benefits of including trailers that are 46' or 48' long and will decide whether to include them or not.

7

New SmartWay Tractor Proposed Requirements



8

Certified SmartWay Tractors

- **US EPA Certified SmartWay Tractors**

- Freightliner Cascadia, Century Class, and Columbia
- Kenworth T660 and T2000
- Volvo VN 780 and VN 730
- Mack Pinnacle
- Peterbilt 387 and 386
- International Prostar



New SmartWay Trailer Proposed Requirements

- Trailer types: Dry van, refrigerated van (reefer), and curtain-side
- Aerodynamic drag reduction requirements
 - Side skirt fairings
 - At least one of the following
 - Front-mounted trailer gap fairings (or bubbles) or
 - Rear-mounted trailer tail fairings (or boat tail) (may not apply to refrigerated van trailers)
- Trailer model year 2010+



New SmartWay Trailer Proposed Requirements (contd.)

- All trailer types
- Rolling resistance reduction requirements
 - Low rolling resistance duals or single wide tires mounted on lightweight wheels
- Trailer model year 2010+



Certified SmartWay Trailers

- **US EPA Certified SmartWay trailers**
 - Utility
 - Wabash



Single Unit Truck Proposed Requirements

- Aerodynamic drag reduction requirements
 - Aero profile truck
 - Integrated cab roof fairings – with dry van and curtain-side body types only
 - Fuel-tank side skirts
 - Aerodynamic mirrors
 - Aerodynamic bumper
- Rolling resistance reduction requirements
 - All body types
 - Low rolling resistance duals or single wide tires mounted on lightweight wheels
- Truck model year 2010+



13

In-Use Retrofit Requirements

- Model year 2005+
- Existing tractors, trailers, and single unit trucks
 - Low rolling resistance duals or single wide tires mounted on lightweight wheels
- Additional trailer requirements
 - Type: dry van, refrigerated van, and curtain-side
 - Aerodynamic drag reduction
 - Side skirt fairings
 - At least one of the following:
 - Front-mounted trailer gap fairings (or bubbles), or
 - Rear-mounted trailer tail fairings (or boat tail) (may not apply to refrigerated van trailers)

14

In-Use Retrofit Requirements (contd.)

- Phase-in 2010 – 2014
 - Fleets with more than 19 tractors/trucks or more than 19 trailers
 - 50% retrofit by 12/31/2012
 - Reporting requirement by fleet owner by 12/31/2012
 - Full compliance by 12/31/2014
 - Fleets with 19 or less tractors/trucks or 19 or less trailers
 - No reporting requirement
 - Full compliance by 12/31/2014

15

Technology Performance Requirements

- To qualify as SmartWay compliant, the technology must provide minimum fuel efficiency improvement as demonstrated by US EPA SmartWay Fuel Efficiency Test Protocol¹ or SAE J1321 Test Procedures
 - Trailer side skirt fairings – **minimum 4%**
 - Front-mounted trailer gap fairings or bubbles – **minimum 1%**
 - Rear-mounted trailer tail fairings or boat tail – **minimum 1%**
 - Low rolling resistance tires (duals or single mounted on lightweight wheels) on both tractor and trailer – **minimum 3%**
- All required add-on devices must not violate federal and state safety and other applicable standards

¹<http://www.epa.gov/smartway/hd-fuel-protocol.htm>

16

Financing Options

- Financing options for small businesses
 - Small Business Administration's (SBA) Express Loan Program is available for EPA SmartWay technology upgrades for trucks from any US state
- Staff will also be looking at other financing options for small businesses

17

Remaining Issues

- Tractors that exchange trailers
 - Use of roof fairings with trailers that are not van-type may have negative effect on fuel efficiency
- Classic trucks
 - Classic trucks (flat front, brick-shaped long nose tractor with exposed air cleaners and exhaust stacks) would not qualify to be SmartWay certified. Should they be allowed in California but add a carbon tax to their sales price?



18

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19