Heavy-Duty Vehicle Greenhouse Gas (Tractor-Trailer GHG) Emission Reduction Regulation

June 2011

California Environmental Protection Agency

Air Resources Board

Presentation Overview

- Purpose
- Status of regulation
- Applicability
- Requirements
- Optional phase-in plans
- Exemptions and provisions
- Current technologies
- Funding assistance
- Reporting

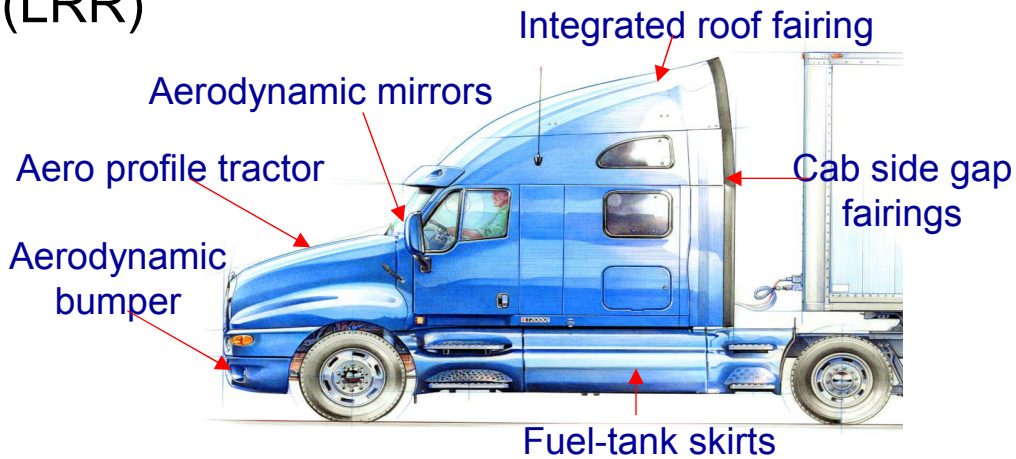
Purpose - Reduce GHG Emissions by Improving:

- Tractor aerodynamics
  - Streamlined hood, sleeper cab roof fairings, gap fairings, fuel tank fairings, aerodynamic bumper and mirrors
- Trailer aerodynamics
  - Side skirts, front gap fairings, rear trailer fairings
- Tire rolling resistance
  - Low rolling resistance tires (LRR)

Front Trailer Gap Fairings

Side Skirts

LRR Tires



Status of Regulation

- Codified into California Code of Regulations (CCR) title 17, subarticle 1, sections 95300 to 95312

- Became effective on January 1, 2010

- Proposed modifications adopted by the Board on December 17, 2010

Applicability

- Tractors pulling 53’ or longer box-type trailers
- 53’ or longer box-type trailers (dry-van & refrigerated-van trailers)
- Responsible for compliance: owner, driver, motor carrier, California-based broker, and California-based shipper
- All affected vehicles operating in California regardless of where they’re registered

What the Rule Requires

- Requirements for new and existing tractors
  - Aerodynamic equipment and LRR tires on new
  - LRR tires on existing
- Requirements for new and existing trailers
  - Aerodynamic equipment and LRR tires on both new and existing

What the Rule Requires (continued)

- Register trailers for the optional extended phase-in plan for fleets
- Register tractors and trailers for local-haul and short-haul exemption
- Register trailers for storage trailer exemption
- Register for passes

What the Rule Requires (continued)

- Register in ARB's TRUCRS database system
- California Licensed Dealers to retain records for 3 years for selling and leasing of vehicles and equipment
- Lessor to retain records for 3 years for lease agreements that must contain disclosure language regarding regulatory requirements for lessee

Tractor Requirements

New tractor purchases:

- 2011+ model year (MY) sleeper-cab tractors
  - SmartWay certified tractor (*aerodynamics and LRR tires*)
  - Began January 1, 2010
- 2011+ MY day-cab tractors
  - SmartWay verified LRR tires (*tires only*)
  - Began January 1, 2010

Existing tractors:

- All 2010 and older MY sleeper-cab and day-cab tractors
  - SmartWay verified LRR tires (*tires only*)
  - **Compliance by January 1, 2013**

Trailer Requirements

New trailer purchases:

- 2011+ MY 53-foot or longer box-type trailer
  - SmartWay certified *or*
  - Retrofitted with SmartWay technologies:
    - LRR tires* *and*
    - Select one or more aerodynamic devices that add up to the percent improvement target*:
      - Minimum of 5% fuel efficiency improvement for a dry van
      - Minimum of 4% fuel efficiency improvement for a refrigerated van
  - Became effective on January 1, 2010

*Based on U.S. EPA SmartWay certified/verified technologies

Trailer Requirements (continued)

Existing Trailers:

- 2010 and older MY 53-foot or longer box-type trailers
  - Same requirements as 2011+ MY trailers for *aerodynamic technologies only but not LRR tires*
  - Compliance by **January 1, 2013**; *or*
    - Participate in an optional phase-in plan:
      - Small fleet compliance plan
      - Large fleet compliance plan

Tire Requirements

New tractor purchases:

- 2011+ MY sleeper-cab and day-cab tractors
  - SmartWay *LRR tires* as of January 1, 2010
  - Open shoulder drive tire exemption until **January 1, 2013**

Existing tractors:

- All 2010 and older MY sleeper-cab and day-cab tractors
  - SmartWay LRR tires **by January 1, 2013**

New trailer purchases:

- 2011+ MY trailers (dry-van and reefer van)
  - SmartWay *LRR tires* as of January 1, 2010

Existing trailers:

- All 2010 and older MY trailers (dry-van and reefer van)
  - SmartWay LRR tires **by January 1, 2017**

Optional Small Fleet Compliance Plan

- Small fleet – 20 or fewer trailers
- Phase-in: 2013 – 2016
- Submit compliance plan by **July 1, 2012**
- Fleets may report compliance activity upfront to ARB or on an annual basis

Percentage of Trailers	Compliance Before
25%	**January 1, 2014**
50%	**January 1, 2015**
75%	**January 1, 2016**
100%	**January 1, 2017**

Optional Large Fleet Compliance Plan

- Large fleet – 21 or more trailers
- Registration: Option 1 by July 1, 2010; Option 2 by July 1, 2011
- Allow fleets to report their compliance activity upfront to ARB or on an annual basis

Option 1 % of Trailers	Option 2 % of Trailers	Compliance Before
5%	--	January 1, 2011
15%	20%	January 1, 2012
30%	40%	January 1, 2013
50%	60%	January 1, 2014
75%	80%	January 1, 2015
100%	100%	January 1, 2016

Optional Trailer Fleet Compliance Plan Reporting

- **Fleet information submitted in the plan:**
  - Trailer fleet list
    - Large Fleet includes only California operated
    - Small Fleet includes total trailer fleet
  - Specific information for each trailer
  - Identification of trailers to be brought into compliance each year to meet the fleet phase-in plan
- **General requirements:**
  - Provide all required information to ARB by due dates
  - Ensure designated trailers meet compliance schedule
  - Allow ARB to audit records and equipment
  - Maintain all documentation at location specified on

Definition of Owner

The “Owner” is the person registered as the owner by the DMV, except in the following situations:

Situation	Owner
Tractor/trailer owned by Federal government (not registered by DMV)	Federal Government
Leased tractor	Lessee: If lease or contract includes disclosure, otherwise lessor
Leased trailer	Lessor
Leased trailer	Lessee: If lease or contract includes disclosure and for pre 1/1/2013 leases lessor allows for modification/ exchange of trailers

Disclosure Language for Sale of Tractors and Trailers

"A heavy-duty tractor and 53-foot or longer box-type trailer operated in California may be subject to the California Air Resources Board Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure. These vehicles may be required to use low-rolling resistance tires and meet aerodynamic equipment requirements to reduce greenhouse gas emissions. For more information, please visit the California Air Resources Board website at http:www.arb.ca.gov/cc/hdghg/hdghg.htm"

Disclosure Language for Leasing of Tractors

"The lessee of this heavy-duty tractor understands that when using a heavy-duty tractor to pull a 53-foot or longer box type trailer on a highway within California compliant with sections 95300-95311, title 17, California Code of Regulations, and that it is the responsibility of the lessee to ensure this heavy-duty tractor is compliant. The regulations may require this heavy-duty tractor to have low rolling resistance tires that are U.S. Environmental Protection Agency (U.S. EPA) Verified SmartWay Technologies prior to current or future use in California, or may entirely prohibit use of this tractor in California if it is a model year 2011 or later tractor and is not a U.S. EPA Certified SmartWay Tractor."

Disclosure Language for Leasing of Trailers

"The lessee of this box type trailer understands that when using a heavy-duty tractor to pull a 53-foot or longer box type trailer on a highway within California, the box-type trailer must be compliant with sections 95300-95311, title 17, California Code of Regulations, and that it is the responsibility of the lessee to ensure this box-type trailer is compliant. The regulations may require this trailer to have low rolling resistance tires and aerodynamic technologies that are U.S. Environmental Protection Agency Verified SmartWay Technologies prior to current or future use in California".

Provisions for Refrigerated Vans under the GHG Rule*

- Applicable to 2003 - 2009 MY reefer trailers with 2003 or newer TRUs
- **No reporting** required for these trailers

Trailer Model Year	Compliance Before
2003-2004	January 1, 2018
2005-2006	January 1, 2019
2007-2009	January 1, 2020

*This is applicable for the Tractor-Trailer GHG Rule only and does not change or delay any of the engine requirements under the separate Transport Refrigeration Unit Regulation.

Open-Shoulder Tire Exemption

- **Open-shoulder tire exemption applies to new tractors only:**
  - 2011+ MY sleeper-cab and day-cab tractors
    - Allows use of two or more open-shoulder drive tires that are not SmartWay *low-rolling resistance tires* until January 1, 2013
  - After January 1, 2013 all open-shoulder low-rolling resistance tires on affected tractors must be SmartWay verified

Short-Haul Exemption

- **Tractors only**
  - 50K miles or less per year
  - The short-haul tractor and trailer it pulls are exempted from the aerodynamic and LRR tires
  - Must register vehicle with annual updates on mileage to ARB
  - On-line TRUCRS to register

Local-Haul Exemption

- **Tractors and trailers**
  - Operation restricted to within a 100-mile radius of registered home base
  - Exemption from aerodynamic requirement only (***LRR tires required***)
  - Relocation Pass for local-haul trailers
  - Must register vehicle and home base information with ARB prior to operation using ARB's on-line TRUCRS

Storage Trailer Exemption

- Exempt from aerodynamics and tire requirements
- Must be empty when traveling on California highways
- Relocation pass required for storage trailers when traveling with freight
- Must register vehicle with ARB prior to operation using ARB's on-line TRUCRS

Exempt Tractors and Trailers (No registration required)

- Container-chassis trailers
- Drop-frame van trailers
- Curtain-side van trailers
- Emergency vehicles
- Solid waste vehicles
- Military vehicles

Drayage Exemption

- **Drayage exemptions apply if:**
  - Trailer pulled by drayage tractor is off-loaded from ship or rail car just prior to being pulled by drayage tractor
    - Must show evidence of port/rail yard of origin
  - Trailer pulled by drayage tractor is taking the trailer to a port or rail yard to be loaded onto ship or rail
    - Must show evidence of port/rail yard destination

Temporary Passes

Pass Description	Situation
Relocation Pass for Local-Haul and Storage Trailers (4 passes a year per tractor/trailer; 3 day pass; must operate the local haul//storage for 30 days)	Allows movement of loaded exempt local-haul trailers and exempt storage trailers within California
Transfer of Ownership Pass for Trailers (3 day pass with longer time upon Executive Officer approval)	Allows delivery of loaded trailers from transferor's location to transferee's location
Non-Compliant Tractor Pass (3 day pass; one tractor per fleet per year) Sunsets 2015	Allows a non-compliant tractor to pull a trailer in California

Modifications to Verified Equipment

- Aerodynamic technologies must be verified or certified by U.S. EPA SmartWay program, *and*
- Aerodynamic technologies must either be installed:
  - To maintain their status as SmartWay verified aerodynamic technologies according to the requirements of U.S. EPA SmartWay program, *or*
  - In an alternate configuration approved by the ARB

Modifications to Verified Equipment (continued)

- **Trailer Aerodynamic Compliance Delay**
  - Allows owners of trailers to apply for a one year delay in requirements to install aerodynamic technologies if trailers cannot be retrofitted with existing U.S. EPA SmartWay aerodynamic technologies
  - Must demonstrate installation of existing aerodynamic technologies is not feasible
  - Requires Executive Officer approval

SmartWay Certified Tractors Currently Available

- Fully aerodynamic with LRR tires
- Purchase directly from tractor manufacturer/dealer

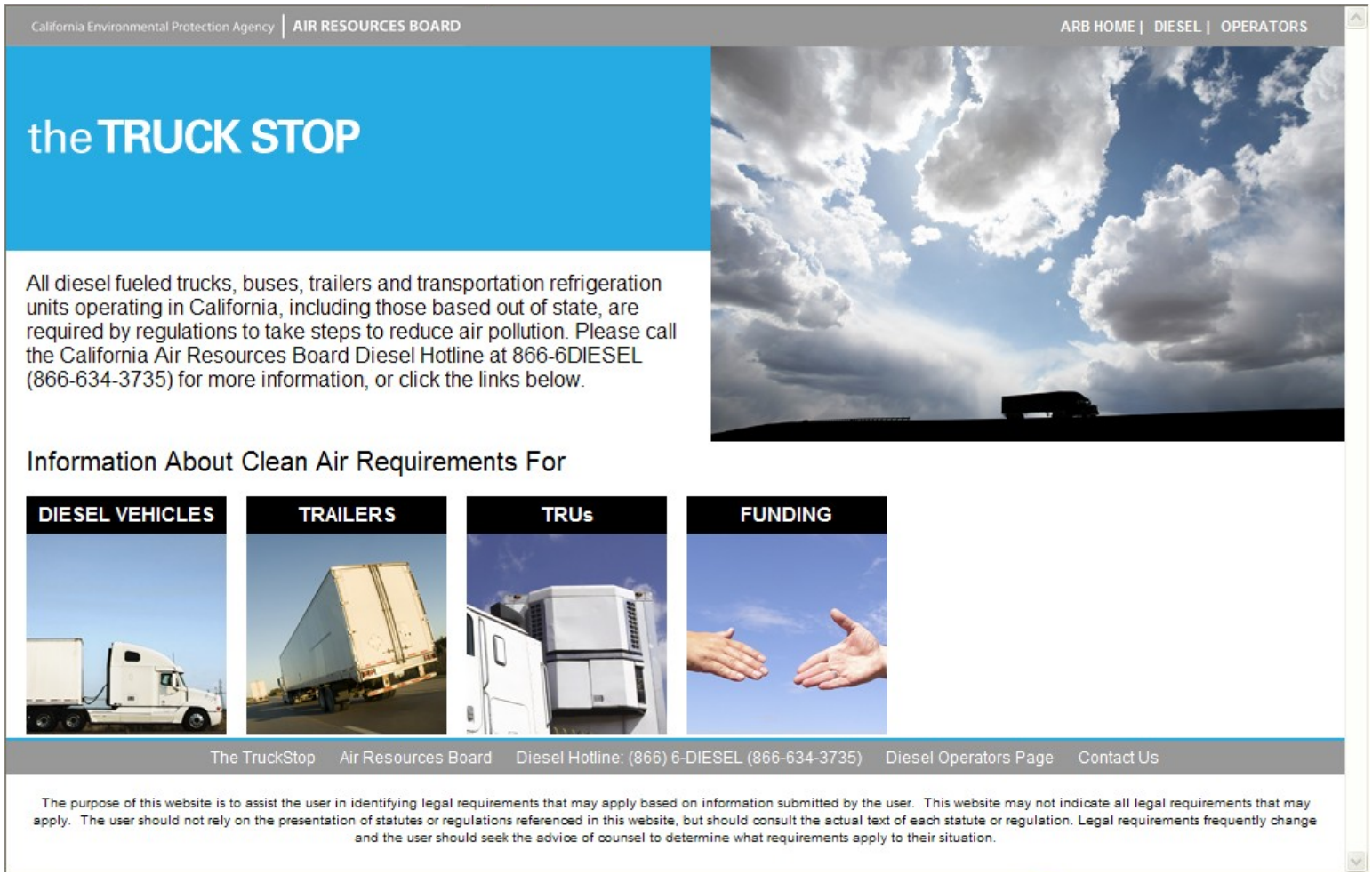
SmartWay Verified Aerodynamic Technologies

- Aerodynamic technologies with LRR tires
- Technologies: front/rear fairings, side skirts, under trailer fairings
- Dual or single wide LRR tires
- Purchased directly from device manufacturer/dealer
- SmartWay program website: http://epa.gov/smartway/transport/what-smart-technologies.htm

Funding Assistance to Help Comply with the Greenhouse Gas Regulation

- Loan guarantees are available to some fleets that would not otherwise qualify
  - Own 20 or fewer trucks
  - Fewer than 100 employees and less than $10 million in annual revenue
  - Operate more than 50% in California
- Loans range between $5,000 and $1.5 million
  - Purchase of 2011 or newer SmartWay certified heavy-duty trucks
  - SmartWay approved aerodynamic technologies

Truck Stop - Online Resource



www.arb.ca.gov/truckstop

866-6DIESEL or 866-634-3735

GHG Regulation Page

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Tuesday, February 16, 2010

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  - Climate Change
    - Early Action Items
    - Transportation Sector
      - **Heavy-Duty Vehicle Greenhouse Gas Measure**

PROGRAM LINKS

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- Overview Presentation
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- Join Email List
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- the Truck Stop
- Workshops / Meetings

Heavy-Duty (Tractor and Trailer) Greenhouse Gas Regulation

This page last reviewed February 10, 2010

Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation

Fact Sheets | Regulation | Regulatory Workshops | Reporting Forms | Training

Background:

The California Air Resources Board (ARB) in December 2008 adopted a new regulation to reduce greenhouse gas emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. Fuel efficiency is improved through improvements in tractor and trailer aerodynamics and the use of low rolling resistance tires.

climate CHANGE

The regulation is expected to reduce greenhouse gas emissions by approximately 1 million metric tons of carbon dioxide-equivalents by 2020, statewide. Over the 11 years between 2010, when the rule goes into effect, and the end of 2020, it is estimated that truckers and trucking companies will save about $8.6 billion when diesel fuel consumption is reduced by as much as 750 million gallons in California and 5 billion gallons across the nation.

What's New

- NEW! Free Training Seminars on the Truck and Bus Regulation and the Tractor and Trailer Greenhouse Gas Regulation (Posted February 8, 2010). Staff has posted dates for a series of public training seminars to discuss the

www.arb.ca.gov/cc/hdghg/hdghg.htm

For More Information…

On-Road Heavy Duty Diesel Section

DIESEL HOTLINE:
- **(866) 6-DIESEL (866-634-3735)**
- **Email: 8666diesel@arb.ca.gov**

the TRUCK STOP Web Address:
http://www.arb.ca.gov/msprog/truckstop/truckstop.htm

Heavy-Duty Vehicle Greenhouse Gas (Tractor-Trailer GHG) Emission Reduction Regulation
Web Address: http://www.arb.ca.gov/cc/hdghg/hdghg.htm
Listserv: http://www.arb.ca.gov/listserv/hdghg.htm
SmartWay Program Information: http://epa.gov/smartway/