

## Proposed Heavy-Duty Vehicle Green House Gas Regulation



**Public Workshops  
May-June, 2008**

California Environmental Protection Agency  
 California Air Resources Board

## Overview

- Background
- California GHG Emissions
- Proposed Requirements
- Cost and Benefits
- Next Steps

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## Global Warming Solutions Act of 2006 - AB 32

- Goal to reduce GHG emissions to 1990 levels by 2020
- Mandates the Board to develop appropriate regulations and enforce the new regulations
- Develop early action measures enforceable by 2010 to reduce emissions in the short term

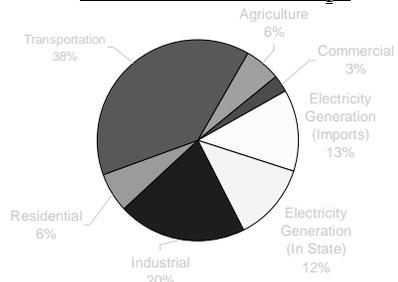


A comparison of Lyell Glacier, Yosemite National Park in 1903 (top) taken by G.K. Gilbert, and 2003 (bottom) taken by Hassan Basagic.

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## California GHG Emissions

### 2004 Emissions (480 MMT CO<sub>2</sub>E)

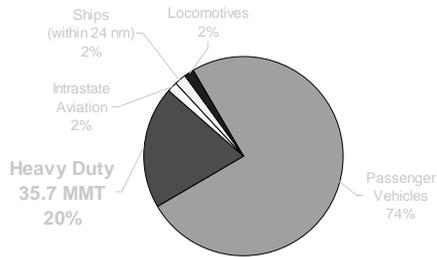


ARB, "California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit" (2007), [www.arb.ca.gov/cc/inventory/1990\\_level.htm](http://www.arb.ca.gov/cc/inventory/1990_level.htm)

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## Transportation Emissions

### 2004 Emissions (182 MMTCO<sub>2</sub>E)



Heavy duty = heavy duty fleet, gas & diesel (light-heavy through heavy-heavy duty trucks, as well as all buses and motorhomes)

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## Goals of Regulation



- Reduce GHG emissions by improving long-haul tractor and trailer efficiency
- Requirements based on US EPA's existing SmartWay Program
  - Improve tractor and trailer aerodynamics
  - Reduce rolling resistance
- Focus on California and out-of-state registered long-haul tractors pulling "box-type trailers"<sup>1</sup>

<sup>1</sup>Box-type trailer includes dry van, refrigerated van, and curtain-side van

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## PROPOSED REQUIREMENTS

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## Applicability

- Long haul heavy-duty tractors
- Box-type trailers - 53' or longer:
  - Dry van
  - Refrigerated van, and
  - Curtain-side van
- California and out-of-state registered
- Drivers, Owners, Motor Carriers
- California based businesses that ship or receive freight in 53' or longer box-type trailers

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## Exemptions

- Authorized emergency vehicles
- Military tactical vehicles
- Short haul tractors
  - Operation within 100 mile radius of home base and maximum of 50,000 annual miles
  - 53' or longer box-type trailer hauled by an exempt short haul tractor
  - Reporting requirements
- Container Chassis
- Drop Frame Vans



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## Tractor Requirements



### 2011+ MY Tractor Pulling Box-Type Trailer (≥53')

**Compliance Date: 1/1/2010**

Tractor Type	Requirement	Tire
Sleeper Cab	SmartWay Certified Tractor	1.5%
Day Cab/Sleeper Cab	SmartWay Approved Tires	1.5%

### Pre-2011 MY Tractor Pulling Box-Type Trailer (≥53')

**Compliance Date: 1/1/2012**

Tractor Type	Requirement	Tire
Day Cab/Sleeper Cab	SmartWay Approved Tires	1.5%

## New Trailer Requirements



### 2011+ MY 53' or Longer Box-Type Trailer

**Compliance Date: 1/1/2010**

Trailer Type	Requirement	Aero	Tires
Dry Van	SmartWay Certified Trailer, <b>OR</b>	5%	1.5%
Refrigerated Van	Retrofit with SmartWay Approved Technologies to meet SmartWay Spec.	4%	1.5%
Curtain-side van		5%	1.5%

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## Existing Trailer Requirements



### Pre-2011 MY 53' or Longer Box-Type Trailer

**Compliance Date: 1/1/2014**

Phase-in compliance schedule for fleets with 20+ trailers

Trailer Type	Requirement	Aero	Tires
Dry Van		5%	1.5%
Refrigerated Van	Retrofit with SmartWay Approved Technologies	4%	1.5%
Curtain-side Van		5%	1.5%

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## Existing Trailer Requirements



### Phase-in Compliance Schedule

Fleet Size	Date Percent of Fleet is Required to Comply			
	1/1/2011	1/1/2012	1/1/2013	1/1/2014
1 to 19	---	---	---	100%
20+	20%	40%	65%	100%

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## Trailer Requirements Compliance Example



Trailer Type	To meet the aero requirement	Tires
Dry Van or Curtain-side Van	Side skirts (4%), Either the front or rear fairing (1%), <b>OR</b>	1.5% Low rolling resistance duals or Single wide tires
	Trailer tail fairings (5%)	
Refrigerated Van	Side skirts (4%)	

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## Maintenance Requirements



- Maintain SmartWay certified equipment in "Good Operating Condition",
- Installed SmartWay certified equipment not in "Good Operating Condition" considered a violation of the regulation subject to penalty in accordance with the regulation

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## Responsibilities

- **Driver**
  - Ensure vehicle is compliant with the requirements
  - Present motor carrier (MC)/broker information and bill of lading upon request by enforcement personnel
- **Owners of tractors/trailers**
  - Responsible for retrofitting vehicle
  - Ensure MC/broker information is on dispatched tractor
  - Register trailers in ARB database
- **Motor Carrier/Broker**
  - Provide copy of regulation to driver/owner of tractor/trailer
  - Dispatch compliant tractor/trailer to California
  - Ensure MC information and bill of lading is on dispatched tractor
- **California-based Shippers and Receivers**
  - Ensure vehicle is compliant with the requirements

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## Recordkeeping/Reporting

- Local Haulers (updated annually)
  - Tractor ID (License plate and/or VIN)
  - Annual VMT of Tractors (50,000 mile annual limit)
  - Geographic Area (100 mile radius from base)
- All box-type trailers subject to Regulation required to register unless compliant by 2010

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## COST AND BENEFITS

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## Costs and Benefits

- Substantial fuel savings: 8% to 11%
  - Trailer ~ 6.5% (5% aero, 1.5% tires)
  - Existing Tractor ~ 1.5% (tires)
  - SmartWay Tractor ~ 3.5% - 4.5% (Compared to a tractor with some aerodynamic features such as roof fairings, cab side extenders, sloped hood, etc)\*
- Over 1,100 gal/yr @ 6 mpg & 100k mi
- Total installed cost: \$7,000 to \$9,000
- Total payback period up to 2 years
  - Diesel fuel costs @ \$4/gallon
  - Longer payback for multiple trailers

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\*The SmartWay tractor can get 10% to 20% better fuel efficiency compared to a traditional tractor

## Enforcement



- Loading Dock and Roadside Enforcement
  - Driver
  - Truck and Trailer Owners
  - Motor Carrier/Broker
  - California Shipper/Receiver of Freight
- Focus of Compliance Through California Shippers/Receivers
  - More equitable for trucking industry and leaves choice to them
  - Better enforceability metric
  - Initial cost more likely to be passed on to CA consumers, rather than truck owners
  - Cost of shipping expected to provide CA consumer savings over life of regulation

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## Next Steps

- Public Workshops
  - GHG Regulation Workshops: June 2008
  - Focus on Shippers/Receivers
- Ongoing meetings with Stakeholders
- Presentation to Board for Approval (October 2008)

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