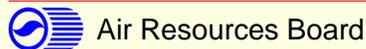


Workshops Regarding Amendments to the Tractor-Trailer GHG, Truck and Bus and Off-Road Regulations



Workshops
June 23 – Central Valley
June 28 – Sacramento
July 1 – El Monte
July 6 – San Diego

California Environmental Protection Agency



1

Agenda

- Tractor-Trailer Greenhouse Gas Regulation Presentation and Public Comment
- Truck and Bus Regulation Presentation and Public Comment
- Lunch Break
- Off-road Regulation Presentation and Public Comment



2

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



3

Overview of Current Regulation

- Became effective January 1, 2010
 - <http://www.arb.ca.gov/regact/2008/ghghdv08/ghghdv08.htm>
- Applicability:
 - Long-haul tractors pulling 53' or longer box-type trailers
 - 53' or longer box-type trailers (dry-van & refrigerated van trailers) pulled by long-haul tractors
 - Responsible for compliance: owner, driver, motor carrier, California-based broker, and California-based shipper
 - All owners operating affected vehicles in California regardless of where their vehicle is registered
- Optional phase-in for small fleets (2013-2016) and large fleets (2010-2015)
- Early compliance credit for large fleets

4

Goals of Regulation

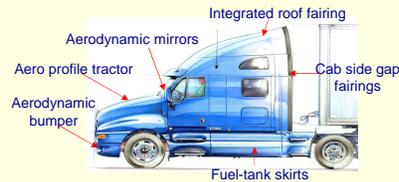
- Reduce GHG emissions from long-haul tractors by improving
 - Tractor aerodynamics
 - Streamlined hood, sleeper cab roof fairings, gap fairings, fuel tank fairings, aerodynamic bumper & mirrors
 - Trailer aerodynamics
 - Side skirts, front gap fairings, rear trailer fairings
 - Tire rolling resistance
 - Both tractors & trailers
- Based on element of U.S. EPA SmartWay Program



Front Trailer Gap Fairings



Side Skirts



5

Tractor Requirements

- 2011+ model year (MY) sleeper cabs:
 - SmartWay certified as of 1/1/2010
- 2011+ MY day cabs:
 - Low rolling resistance tires as of 1/1/2010
- All pre-2011 MY sleeper cabs & day cabs:
 - Low rolling resistance tires by 1/1/2012

6

Trailer Requirements

- 2011+ MY 53-ft+ box-type:
 - SmartWay certified *or*
 - Retrofitted with SmartWay technologies as of **1/1/2010**
 - Low rolling resistance tires (1.5%+ fuel efficiency improvement)
 - Aerodynamic devices
 - 5%+ fuel efficiency improvement for dry van
 - 4%+ fuel efficiency improvement for reefer van
- Pre-2011 MY 53-ft+ box-type
 - Same requirements as 2011+ MY trailers
 - Must comply by **1/1/2013** or choose compliance phase-in option

7

Compliance Phase-In Options

Trailer Requirements

- Large Fleets (21 or more trailers)
 - Phase-in: 2010 – 2015
 - Early compliance option
 - Submit compliance plan by **July 1, 2010**
- Small Fleets (20 or fewer trailers)
 - Phase-in: 2013-2016
 - Submit compliance plan by **July 1, 2012**

8

Exemptions

■ Full Exemption (no reporting required)

- Container chassis
- Drop frame vans
- Curtain side vans
- Refuse trailers
- Livestock trailers
- Authorized emergency vehicles
- Military tactical support vehicles
- Box trailers less than 53' in length



9

Exemptions (continued)

■ Drayage tractors & trailers

- Operate within 100 mile radius of port or intermodal rail yard
- No registration required

■ Short-haul tractors

- 50,000 miles per year or less
- Must register with ARB

■ Local-haul tractors and trailers*

- Operate within 100 mile radius of local-haul base
- Must register with ARB

*Exempt from aerodynamic requirements only (not from low rolling resistance tires)

10

Proposed Amendments to the Tractor-Trailer GHG Regulation



11

Proposed Amendments

- Additional phase-in option for large fleets
- Additional flexibility for fleets to report
- Additional delayed compliance for certain refrigerated vans
- Storage trailer exemption
- Drayage exemption clarified
- Modifications to verified equipment
- Other clarifying language

12

Additional Phase-in Option for Large Fleets*

- Allow fleets additional time to register and report activity
- Allow additional time for ARB to provide outreach to affected industry
- Creates 2 phase-in options
 - Option 1= current phase-in from 2010-2015
 - Option 2= new phase-in from 2011-2015

*applies to fleets with 21 or more 53-ft box trailers

13

Large Fleet Compliance Plan Option 1 vs. Option 2

- Registration: Option 1 by July 1, 2010; Option 2 by July 1, 2011
- Option 2 phase-in begins one year later
- Option 2 phase-in more accelerated

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

14

Additional Flexibility for Fleets to Report

- Current regulation
 - Requires fleets to identify specific trailers to be brought into compliance during each compliance year
- Proposed amendment
 - Allows fleets to report compliance on an annual basis, or continue with phase-in plan as reported up-front

15

Delayed Compliance for Some Refrigerated Vans

- Additional delayed compliance for 2009 model year refrigerated vans with 2003 or later TRU*
 - Current regulation allows delay for 2003-2008 reefer trailers with 2003 or later TRU
 - Proposed modification adds delayed compliance for 2009 reefer trailers with 2003 or later TRU
 - 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

*Applies to the Tractor-Trailer GHG Rule only and does not change or delay any of the engine requirements under the separate Transport Refrigeration Unit Regulation ¹⁶

Storage Trailer Exemption

- Exempt from aerodynamics and tire requirements
- Must be empty when traveling on California highways
- Must register with ARB for exemption

17

Drayage Exemption Clarified

- 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

18

Modifications to Verified Equipment

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

19

Recap of Proposed Amendments

- Additional phase-in option for large fleets
- Additional flexibility for fleets to report
- Additional delayed compliance for certain refrigerated vans
- Storage trailer exemption
- Drayage exemption clarified
- Modifications to verified equipment
- Other clarifying language
- Amendments will be recommended to the Board in September of 2010

20

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>

Tractor-Trailer Greenhouse Gas Regulation

Web address: <http://www.arb.ca.gov/cc/hdghg/hdghg.htm>

Listserv: http://www.arb.ca.gov/listserv/listserv_ind.php?listname=hdghg

SmartWay program information: <http://epa.gov/smartway/>

21

Proposed Amendments to the Truck and Bus Regulation



California Environmental Protection Agency



Air Resources Board

22

Outline

- Background
- Inventory status
- Truck and Bus regulation summary
- Proposed amendments
- Financial opportunities
- Fleet survey results



23

Background – Truck and Bus and Off-Road Regulations



24

10 Guiding Principles for Amendments to Truck and Bus and Off-Road Regulations

1. Continue progress toward cleaner air
2. Maintain public health benefits
3. Meet SIP commitments
4. Incentivize greenhouse gas reductions
5. Improve cost effectiveness
6. Lower peak year costs
7. Consider cumulative impact of both regulations
8. Provide most relief to fleets hardest hit by recession
9. Ensure emission reductions as economy recovers
10. Support clean technologies

25

Board Directives from April

- Revise emissions projections
- Meet SIP commitment and maintain public health benefits
- Consider on-road and off-road regulations together
- Consider fleets' cumulative cost from both regulations
- Reward fleets that have taken action to comply
- Explore ways to increase opportunities for incentive funds
- Consider ways to improve access to capital
- Carefully consider stakeholder suggestions
- Do not just postpone a front-loaded regulation

26

Impact of Economy on Emissions

- Recession has resulted in reduced emissions
- Truck and bus emissions lower than originally estimated
- Room for some relief from both the on-road and off-road regulations
- Need for truck and bus and off-road regulations
 - Meet Federal air quality standards
 - Meet SIP targets - PM 2.5 in 2014 and ozone in 2023
 - Meet goals of Diesel Risk Reduction Plan
 - Maintain public health benefits

27

May 2010 Workshops

- Trucks and off-road vehicles
- Update on emissions inventory, data sources and methodologies
- Stakeholder input on changes to consider
 - Consistent with Board directives
 - Short term and longer term

28

Emissions Inventory Status



29

Off-Road Inventory Status

- Currently working on updates
 - Population and under-reporting
 - Activity reporting
 - Load factor
 - Fuel consumption

30

Truck and Bus Inventory Status

- Final inventory review
 - Recession and growth forecast
 - Out-of-state truck VMT
 - Regional emissions assessment
 - Interstate vs in-state growth

31

Next Steps

- Finalize baseline inventories
- Estimate margin
- Assess emissions impact of regulatory revisions

32

Proposed Amendments to the Truck and Bus Regulation



33

Truck and Bus Regulation Background

- Approved December 2008
- December 2009 update on economy
 - Board directive for short term relief
- Held 3 public workshops in January 2010
- Delayed planned amendments
 - Further economic and SIP analysis
 - Consider together with off-road regulation
 - Inventory refinements
- Held 3 public workshops in May 2010

34

Summary of Current Regulation

- Filter requirements to reduce PM emissions
 - Phased in beginning January 1, 2011
 - Requires filters on all trucks by 2014
- Requirements to reduce NOx emissions
 - Phased in beginning January 1, 2013
 - Requires cleanest available engines by 2023
- Three compliance options
 - Best available control technology (BACT) schedule
 - Percentage of fleet requirements
 - Fleet average
- Special provisions, credits

35

Existing Truck and Bus Regulation Summary - Special Provisions

- | | |
|-----------------------------|--|
| ■ Small fleets | ■ Manufacturer delays |
| ■ Retirement credits | ■ Certain cab-over engine truck tractors |
| ■ Low use | ■ Hybrid and alternative fueled vehicles credits |
| ■ Usage below 7500 miles | ■ Three day pass |
| ■ Attainment area operation | ■ School buses |
| ■ Agricultural vehicles | ■ Motor coaches |
| ■ Early PM retrofit credits | ■ Two engine sweepers |
| ■ Unique vehicles | |
| ■ PM retrofit safety | |

36

Proposed Amendments



37

Summary of Proposed Amendments

- Changes to deadlines
- Primary compliance option amendments
 - BACT, Percent of Fleet, Fleet Average
- Credits
- Higher usage thresholds
- Logging truck provision
- Other amendments

38

Changes to Deadlines

- Postpone January 1, 2011 compliance date to April 1, 2011
 - Annual compliance January 1 thereafter
- Postpone January 31, 2011 reporting date to April 30, 2011
 - Compliance options other than BACT schedule
 - Annual reporting January 31 thereafter
- Require reporting for early action and retirement credits no later than January 31, 2012

39

Defer Requirements for Smaller Fleets

- 1 year for fleets of 21 to 40 vehicles
- 2 years for fleets of 4 to 20 vehicles
- 3 years for fleets with 1 to 3 vehicles
 - Unchanged from current regulation

40

Option 1 - Best Available Control Technology Schedule

- No PM filters on engines less than 10 year old
- No vehicle replacements for engines less than 14 years old
- 2010 engines meet PM BACT and NOx BACT
- Exhaust retrofits and engines originally equipped with PM filters meet PM BACT

Jan. of Year	Model Year	Action
2011	Pre-1994	PM BACT
2012	2000-2002	PM BACT
2013	2003	PM BACT
	1997-1999	NOx/PM BACT
2014	2004	PM BACT
	1994-1996	NOx/PM BACT
2015	2005	PM BACT
2016	2006	PM BACT
	Pre-1994	NOx/PM BACT
2017	2000-2002	NOx/PM BACT
2018	2003	NOx/PM BACT
2019	2004	NOx/PM BACT
2020	2005	NOx/PM BACT
2021	2006-2007	NOx/PM BACT
2022	2008	NOx/PM BACT
2023	2009	NOx/PM BACT

41

Option 2 - Percentage of Fleet

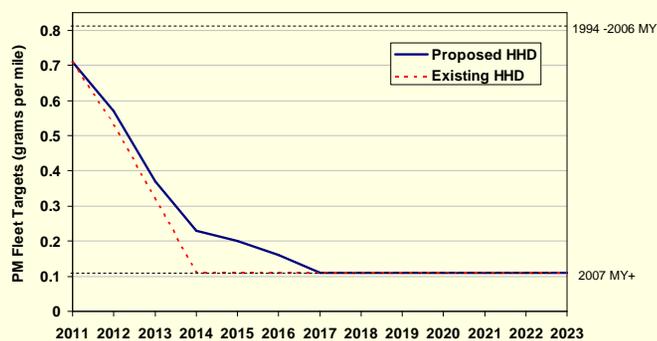
- 2010 engines meet PM BACT and NOx BACT
- Exhaust retrofits and engines originally equipped with PM filters meet PM BACT

Jan. of Year	PM BACT	NOx BACT
2011*	20%	0%
2012	40%	0%
2013	65%	20%
2014	85%	40%
2015	90%	40%
2016	95%	60%
2017	100%	70%
2018	100%	70%
2019	100%	80%
2020	100%	80%
2021	100%	90%
2022	100%	90%
2023	100%	100%

* Deferred several months

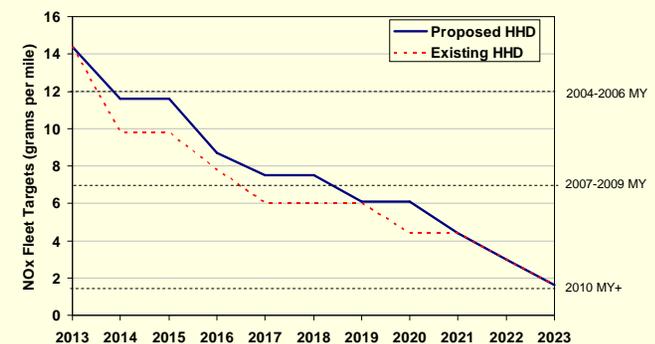
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Fleet Average Targets for PM



43

Fleet Average Targets for NOx



44

Early Retrofit Credits

- For actions beyond minimum requirements
- PM retrofit prior to 2011
 - Extend NOx exemption from 2014 to 2017
- PM retrofit before 2012
 - Adds credit for an extra engine meeting PM BACT (double credit)
- NOx retrofit before 2012
 - Makes vehicle NOx exempt until 2017
 - Double PM credit can still apply

45

Retirement Credits

- Change date of baseline fleet to October 1, 2006
- Credit equivalent to adding a 2010 engine to fleet
- Allow non-operated vehicles to count as retired
 - May not be operated in compliance year
 - Must not be registered as operational
- Add clarifying language to include scrapped vehicles
- Expires January 1, 2014

46

Raise Usage Thresholds

- NOx exemption up to 15,000 miles per year
 - Up to 350 hours per year for vehicles with PTO for working while stationary
 - Must meet PM BACT requirements
- Benefits construction, moving industry
- Improves cost-effectiveness
- Expires in 2021

47

Additional Flexibility for NOx Exempt Areas

- “NE” label for NOx-exempt areas as compliance option
- Allow emergency use exemption for NOx exempt area vehicles
- Allow travel outside NOx exempt area for sale or auction



48

Logging Truck Provision for NOx Exempt Area

- Option for logging trucks
 - Exclusively hauls logs
 - Comply independently from rest of fleet
 - All in or all out
- Must report entire fleet
 - Does not change fleet size for determining compliance start date
- Fleets of 4 or more

Jan. of Year	PM BACT	NOx BACT
2011*	10%	0%
2012	20%	0%
2013	30%	0%
2014	40%	10%
2015	50%	20%
2016	60%	30%
2017	70%	40%
2018	80%	50%
2019	90%	60%
2020	100%	70%
2021	100%	80%
2022	100%	90%
2023	100%	100%

* Deferred until April

49

Drayage Trucks

- Drayage trucks registered in DTR by 2011 and equipped with a PM filter allowed to operate until 2017
 - Same as early action for Truck and Bus
- Must have 2004 MY engine with PM filter starting December 31, 2013
 - Changed from 2007 MY with PM filter
 - Same as Truck and Bus
- Drayage PM filter requirements remain unchanged

50

Changes to School Bus Provision

- Two year deferral to 2013 allowed
- Streamline reporting requirements and rely on record keeping
- Retirement credits available



51

Provisions for Additional Flexibility

- Allow qualifying agricultural fleets to utilize small fleet provisions
- Report only low-use vehicles if rest of fleet meets BACT
- Allow use of hubodometers
 - Serial number and tamper proof

52

Other Concepts Under Review

- Treatment of yard trucks
- Two engine street sweepers

53

Financial Opportunities

- On-road funding and loan guarantees are available now for small fleets and trucks in goods movement corridors
- Eligibility for on-road Carl Moyer or Goods Movement funding is based on BACT Schedule
 - Projects must achieve early or extra emission reductions
 - Fleet must not use BACT Percentage or Fleet Average compliance options during contract term
- School bus retrofit and replacement funding is available
- Changes to compliance deadlines may result in additional funding eligibility for some fleets

54

Fleet Survey Results



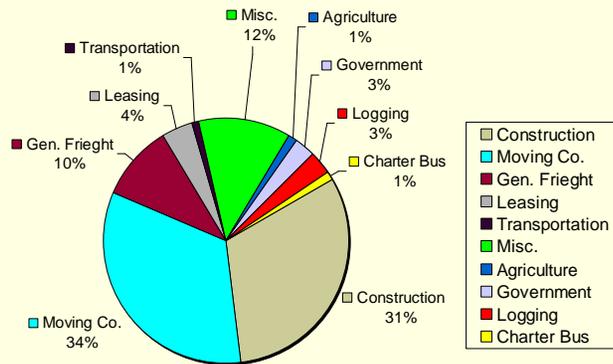
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Fleet Surveys

- Surveys completed
- Responses from 69 companies
 - More than 2,000 trucks
- Financial information on 40 companies
 - About 30 percent provided complete financial data

56

Fleet Survey Participation by Industry (Percent of Companies Reporting)



57

Fleet Analysis

- Liquidity ratios
 - Near cash flow
- Leverage ratios
 - Long term debt to equity/assets
- Profitability ratios
 - Return on equity, assets, sales
- Compare to public information on large companies

58

Next Steps

- Additional meetings with stakeholders
- August 2010
 - Final inventories released
 - Publish staff reports and proposed amendments
- September 2010
 - Board Hearing to consider staff proposal

59

For More Information...

Truck and Bus Regulation information:

www.arb.ca.gov/dieseltruck

Listserv (onrdiesel):

http://www.arb.ca.gov/listserv/listserv_ind.php?listname=onrdiesel

DIESEL HOTLINE:

(866) 6-DIESEL (866-634-3735)

Email: 8666diesel@arb.ca.gov

60