

CARB Truck and Trailer Efficiency Regulation



March 2009

Overview of the Regulation

- Board approved in December 2008
 - <http://www.arb.ca.gov/regact/2008/ghghdv08/ghghdv08.htm>
- Staff will release modified version of regulation in summer 2009
 - 15 day public comment period after release
- Applicability:
 - Long-haul tractors pulling 53' or longer box-type trailers
 - CA registered & out-of-state registered
 - 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
- Implementation begins in 2010



Goals of Regulation

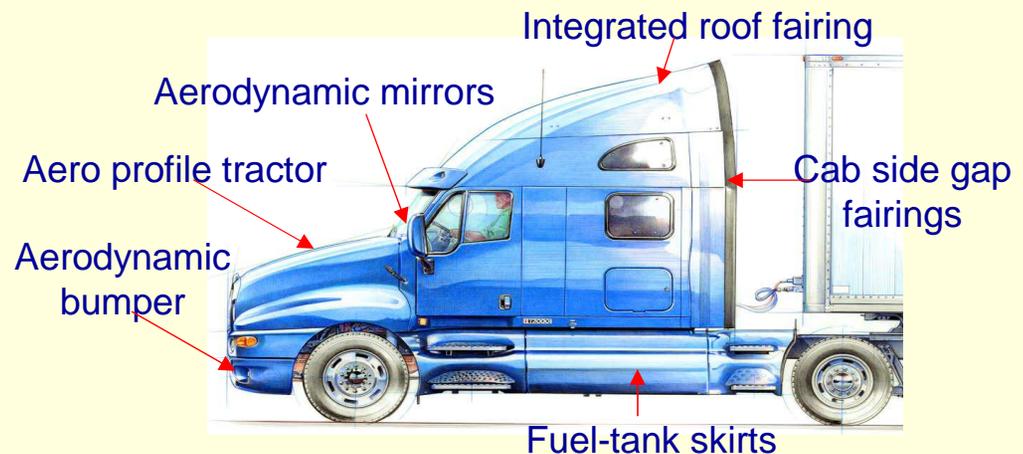
- Reduce GHG emissions from long-haul tractors by improving
 - Tractor aerodynamics
 - Streamlined hood, sleeper cab roof fairings, gap fairings, fuel tank fairings, aerodynamic bumper & mirrors
 - Trailer aerodynamics
 - Side skirts, front gap fairings, rear trailer fairings
 - Tire rolling resistance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



Front Trailer Gap Fairings



Side Skirts



Available Technology (New)

New* SmartWay Certified Tractors

- Fully aerodynamic tractor with low rolling resistance tires
- Manufacturers:
 - Freightliner, International, Kenworth, Mack, Peterbilt, Volvo
- Fuel efficiency improvement 3% - 4.5% - resulting in annual fuel cost savings of \$1,800
- Average incremental cost: \$2,100



* 2011 & subsequent model year

Available Technology (New)

New SmartWay Certified Trailers

- Purchased directly from trailer manufacturer/dealer:
 - Great Dane, Hyundai Translead, Manac, Stoughton Trailers, Strick Corp., Trailmobile Canada, Utility Trailer Manufacturing, Wabash National Corp.
- Fuel efficiency improvement of 6.5% minimum - resulting in annual fuel cost savings of \$1,300 to \$3,300
- Trailer incremental cost: \$2,900
- Refrigerated-van certification coming soon



Available Technology (In-Use Retrofit)

SmartWay Verified

Aerodynamic Technologies

- Side skirts
 - 4% or greater fuel efficiency improvement
 - Fleets have experienced positive results
 - Average cost: \$1,900



Available Technology (In-Use Retrofit)

SmartWay Verified

Aerodynamic Technologies

(continued)

- Front gap fairings
 - 1% or greater fuel efficiency improvement
 - Average cost: \$870
- Rear trailer fairings
 - 1% or greater fuel efficiency improvement
 - Average cost: \$2,800



Available Technology (New and In-Use Retrofit)

SmartWay Verified Low Rolling Resistance Tires

- Dual or single wide tires
 - 3%+ fuel efficiency improvement (tractor-trailer combination)
 - Incremental cost: \$0-\$50 per tire (\$0-\$900 per tractor-trailer)





Tractor & Trailer Requirements



•Tractor Requirements

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

•Trailer Requirements

- 2011+ MY 53-ft+ box-type: SmartWay certified *or*
 - Retrofitted with SmartWay technologies:
 - 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, but with delayed compliance options

Exemptions

- Drayage tractors & trailers
 - Operate 100 mile radius of port or intermodal rail yard
- Custom extended-cab sleeper tractors
- Container chassis
- Drop frame vans
- Curtain side vans
- Authorized emergency vehicles
- Short-haul tractors & trailers*
 - 100 mile radius
 - 50,000 miles per year or less (tractors only)

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



15-Day Changes Approved by the Board

- Requirement for use of SmartWay tractors will be removed if U.S EPA does not establish new performance-based test requirements by Summer 2009
- Require low-rolling resistance tires on short-haul tractors & trailers
- Remove reporting requirements for refrigerated van compliance provision
- Exempt solid waste trailers
- Other minor modifications

Costs and Benefits

	Tractor-Trailer Combination	
	New SmartWay Certified	In-Use Retrofitted
Fuel Savings (%)	10%	8%
Tractor incremental cost	\$2,100	\$250
Trailer incremental cost	\$2,900	\$2,900
Fuel savings (gallons/year)	1293	1034
Annual Savings @ \$3.14/gallon	\$4,060	\$3,250
Payback period in years		
(Trailer : Tractor = 1:1)	1.2	1.0
(Trailer : Tractor = 2.5:1)	2.3	2.3

Assume: baseline fuel economy of 5.8 miles per gallon, and an average long-haul annual mileage accrual rate of 100,000 miles.

AB118 Loan Guarantee Program



- Priority for small fleets and those with “financial hardship”
- Targets “nearly bankable” small businesses



- Loans available by Spring 2009
- Loans for used trucks, new trucks, SmartWay products and exhaust retrofits

Next Steps

- Summer 2009 - Release modified version of regulation for 15-day comment period
- October 2009 – Submit regulation and Final Statement of Reasons to OAL for approval
- November 2009 – Formal adoption of regulation as new subarticle 1, sections 95300 to 95311, title 17, California Code of Regulations
- Early 2010 – Launch web database system

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