SmartWay Tractor-Trailer

Cheryl L. Bynum, EPA SmartWay Webinar February 10, 2009

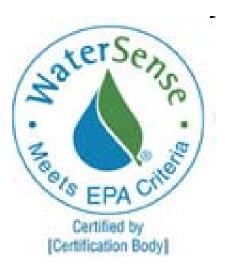
Context

- The SmartWay partnership logo recognizes a Partner's company-wide environmental achievements
 - Eligible partners display the SmartWay Partnership logo on web sites, literature, etc.
- SmartWay vehicle certification pertains to a specific vehicle so it is a product certification mark
 - At this time, individual components of a SmartWay vehicle are not certified, only the vehicle itself
- To develop an EPA product certification mark, the benefits of the product must be quantified

EPA Product Certification

- Energy Star is an EPA product certification mark for energysaving consumer appliances and electronics
 - Energy Star products typically use 20% less energy than the minimum federal requirement
- WaterSense is an EPA product certification mark for watersaving consumer and commercial products
 - WaterSense products must conform to the relevant WaterSense product specification





SmartWay Passenger Vehicles

- EPA SmartWay/SmartWay elite certification
 Criteria: top environmental performance on air pollution and greenhouse gas scores
 Eligibility based upon results of existing EPA tests
 Most automakers have several SmartWay
- Most automakers have several SmartWay models
 - □ All passenger vehicles eligible for consideration



SmartWay Commercial Vehicles

EPA SmartWay tractor/trailer certification

- Criteria: Top environmental performance on air pollution and fuel savings/CO₂
- Eligibility based on results of EPA tests, industry data and research
- Most class 8 truck OEMS and all major trailer OEMs have at least one SmartWay model
 - At current time, only class 8 combination tractortrailers eligible for consideration
 - EPA considering expanding to other truck types





SmartWay Certified Tractor

- Eligibility requirements
 - Base model has aerodynamic profile
 - □ Base model has 2007 or newer engine
 - □ High roof sleeper cab
 - □ Integrated roof fairing
 - Side extender fairings
 - Fuel tank side fairings
 - Aerodynamic bumpers and mirrors
 - SmartWay-approved option to reduce extended idle
 - □ SmartWay-approved low-rolling resistance tires
 - □ Low weight aluminum wheels (optional)

SmartWay Certified Trailer

Eligibility Requirements

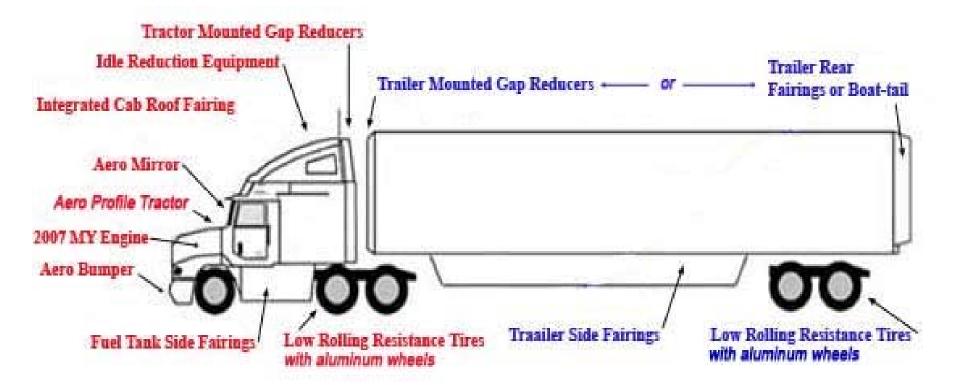
- Base model is 53' or longer dry box van trailer
- □New equipment or retrofit
- □SmartWay-approved trailer side skirt fairings
- □SmartWay-approved front gap fairing or rear fairing
- □SmartWay-approved low rolling resistance tires

□Low weight aluminum wheels (optional)

Alternative performance option for aero specification

Demonstrate equivalent environmental performance
 (5%+ fuel savings) on a modified SAE J1321 test

SmartWay Truck



Potential fuel savings – 10% - 20% (on-highway operation) compared to a truck without these features

SmartWay-eligible Trucks

- Top OEMs offer SmartWay truck models
 - Freightliner Century Class, Columbia, and Cascadia (Daimler Trucks)
 - □ Kenworth T660 and T2000 (PACCAR)
 - □ Mack Pinnacle (Volvo)
 - Navistar 9200i, Prostar, and Lonestar (Navistar)
 - □ Peterbilt 386, 387 (PACCAR)
 - □ Volvo VN 670, VN 780 (Volvo)
- EPA will update its list periodically

SmartWay-eligible Trailers

Top OEMS offer SmartWay trailer models

- □Great Dane
- Hyundai Translead
- Stoughton
- Strick
- Trailmobile Canada
- □Utility
- □Wabash National
- EPA will update its list periodically

Tires

- All major tire suppliers to OTR market offer one or more SW-approved tire models
- EPA maintains list of tires that meet the requirements for the SmartWay tractor and trailer specification on the SmartWay website

□ List updated periodically

Tire must meet a performance requirement

- Tire rolling resistance test or equivalent fuel savings demonstrated on vehicle test
- Tire manufacturers submit test data to EPA

Aerodynamic Equipment

- Trailer aerodynamic equipment obtained from a trailer manufacturer or a supplier
- EPA maintains list of aerodynamic equipment that meets the requirements for the SmartWay trailer specification on the SmartWay website
 List updated periodically
- Aerodynamic equipment can meet the trailer design specification or an alternative performance requirement

□ Fuel savings is demonstrated on a vehicle test

 Aerodynamic equipment manufacturers submit test data to EPA

Idle Reduction Options

- All major truck OEMs and many suppliers offer SmartWay-approved idle reduction devices
- EPA maintains list of idle reduction equipment that meets the requirements for the SmartWay tractor specification on the SmartWay website

□ List updated periodically

- Fleet has 3 options
 - OEM idle reduction system
 - □ Aftermarket device
 - Equivalent operational strategies
 - If the latter, the fleet must submit valid documentation to EPA

How Vehicles are Certified

- Manufacturers submit data to EPA
- EPA reviews data, and approves submission
- Vehicle manufacturers sign licensing agreement with EPA
 - Can use logo on interior of vehicle, at POS, in marketing materials, etc
- Trucking companies that want to display the SmartWay logo on exterior of vehicle also sign licensing agreement with EPA
 - Confirm choice of vehicles, equipment, and idling option

Near-term Enhancements

- EPA plans to publish on its website an updated, more comprehensive fact sheet on SmartWay vehicle certification
- Will include clear information about the process and the technical requirements, including options for mixing and matching trailer aerodynamic features

Presented in a fleet-friendly format

Looking Toward Future

- Establish more comprehensive test methods for next generation of SmartWay trucks
 - Move to performance-based criteria (technologyneutral = flexibility for emerging technologies)
 - Establish uniform test conditions for apples-toapplies comparability
- Expand to other truck applications
 Urban delivery, refuse, utility, transit bus, etc.
- Provide value-added for fleets
 - Structure so fleets can customize to match their operations

Draft Test Protocol

Issued Nov 2007

Culmination of nearly 2 years stakeholder process

Hosted public workshop in March 2008 to discuss technical issues associated with a heavy truck protocol

SmartWay Fuel Efficiency Test Protocol for Medium and Heavy Duty Vehicles

Working Draft



Test Protocol Milestones

2008

- □ Spring Workshop and request stakeholder input
- Summer- Collect and evaluate comments
- Fall/Winter Initiate test program to demonstrate feasibility of test method

2009

- Spring Complete feasibility test program
- Summer Analyze test results, and conduct other follow-on analyses as needed
- Fall/Winter Revise test protocol, incorporating all comments, test results and new analyses

Draft Test Method: Scope

- Single truck test
 - Measures absolute vehicle emissions
 - Engine must meet emission certification requirements
 - Can use with reference truck or paired truck tests
- Test track or chassis dynamometer
 - Track test modifies SAE J1321, "Joint TMC/SAE Fuel Consumption Test Procedure Type II"
 - Chassis test modifies EPA Optional Chassis Certification Test Procedure for diesel vehicles
- Conventional or hybrid
 - Additional requirements for hybrid

CARB's Actions

- Developed under California Global Warming Solutions Act of 2006 (AB 32)
 - □ Reduce CA's GHG emissions to 1990 levels by 2020
 - Governor Schwarzenegger issued an Executive Order to reduce GHG emissions levels to 80% below 1990 levels by 2020.

Rulemaking

- Issued Staff Report: Initial Statement of Reasons fro Proposed Rulemaking for Regulation to Reduce Greenhouse Gas Emissions from Heavy-Duty Vehicles - October 2008
- □ Approved December 2008

AB 32 Impact on Trucks

Heavy-duty tractor and trailers

- Trucks operating on CA highways
- □ 53' or longer trailer
- Box-type trailer: dry-van trailer or refrigerated –van trailer
- Exempted: emergency vehicles, military tactical support vehicles, short-haul (<100 mile radius and <50,000 miles annually) and drayage tractors</p>

Tractor Requirements

- January 2010: 2011 MY and later sleeper cab which pulls a 53' or longer box-type trailer will be required to be a SmartWay-certified tractor
 - SmartWay does not have certifications for day cabs, so these tractors must have low-rolling resistance tires by January 2010
- January 2012: 2010 MY and earlier tractors must be equipped with low rolling resistance tires.
 - Allows most tractors to use their existing tires for remainder of useful life before replacing with low rolling resistance tires

Trailer Requirements

- January 2010: 2011 MY and newer 53' or longer trailers must be SmartWay certified or retrofitted with SmartWay technologies
 - □ SmartWay certified trailers available for dry-van trailers
- 2010 MY and older 53' or longer trailers must be retrofitted with SmartWay technologies by January 2013

Phase-in

- Large fleets with 21 and greater trailers can phase-in between 2010 and 2015
- □ Small fleets with 20 or less trailers can phase-in between 2013 and 2016
- Refrigerated-van fleets with 2003-2008 MY transport refrigeration units (TRUs) have a delayed compliance schedule of 2017 through 2019 due to subject to the ARB Airborne Toxic Control Measure

Questions? Thank You!

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SmartWay Transport Partnership

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