



SmartWay Tractor-Trailer

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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 energy-saving 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 water-saving 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 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 tractor-trailers 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 (technology-neutral = flexibility for emerging technologies)
 - Establish uniform test conditions for apples-to-apples 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 for 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

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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