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
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 Retrofit 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

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

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

\[ \text{bankable} \quad \text{target} \quad \text{unbankable} \]

- 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
Contacts

On Road Heavy Duty Diesel Section

Dassi Pintar,
Air Pollution Specialist
hpintar@arb.ca.gov
(626) 575-7007

Yvonne Sanchez,
Air Resources Engineer
ysanchez@arb.ca.gov
(626) 575-6618

Web Address: http://www.arb.ca.gov/cc/hdghg/hdghg.htm
Listserv: http://www.arb.ca.gov/listserv/hdghg.htm