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Washington State Clean Diesel Program

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Washington State Department of Ecology

Mission: Protect, preserve, and enhance Washington's environment, and promote the wise management of our air, land, and water for current and future generations.

Goals

- Prevent pollution
- Clean up pollution
- Support sustainable communities and natural resources

Priorities: Reduce Toxic Emissions and Greenhouse Gases

Diesel Particulate:

- Identified as air pollutant most harmful to human health
- Puts healthy people at risk for respiratory disease
- Worsen symptoms of people with health problems such as asthma, heart disease, and lung disease
- 4.2 million people in urban corridors exposed, including:

- 4,000 daycares
- 1,500 schools
- 100 hospitals
- 200 nursing homes
- Probably contributes to global warming

Washington State Clean Diesel Program

- Partnership between state and local clean air agencies and fleet owners
- Voluntary participation of fleets
- Provide funds for exhaust retrofits, idle reduction technologies, and engine upgrades
- Match exhaust & idle reduction technologies to vehicle and equipment application
- Customer service oriented programs
- Experienced project management: $36M over 8 years
- State contracts provide EPA and CARB verified retrofit exhaust and idle reduction technologies
- Technical assistance for selecting technologies.

Type	Particulate Reduction	Maintenance
Diesel Oxidation Catalyst	20-40%	None
Diesel Partial-flow Filter	50-70%	None
Diesel Particulate Filter	90-95%	50,000 - 90,000 Miles
Closed Crankcase Ventilation	80%	Replacement Filter @ 500 hrs or every oil change

Exhaust Retrofits (Public and Private Fleets)

- Installed 11000 technologies on 7800 engines

Vehicle/Equipment Type	Number of Engines Retrofitted	Annual Particulate Reductions (tons/yr)
School Bus	6430	18
Public Fleets	1224	4
Private Fleets	217	4
Total	7871	26

Idle Reduction Projects (Public Fleets Only)

- Engine pre-heaters and cabin heaters for school and transit buses
- Auxiliary engines for switch yard & short haul locomotives
- Electronic control modules and auxiliary batteries for public works vehicles
- Truck stop electrification – 76 spaces at 2 truck stops

Reasons for Reducing Engine Idle Time

- Improve air quality: Every dollar invested reducing diesel emissions saves $3 - $8 in health care costs
- Conserve fuel – reduces carbon emissions and save $$
- Extend engine life & reduce engine maintenance - save $$
- Preserve emissions control systems - save $$
- Retail sales and use tax for equipment and labor for on-board electrification systems – save $$
- Improve public image

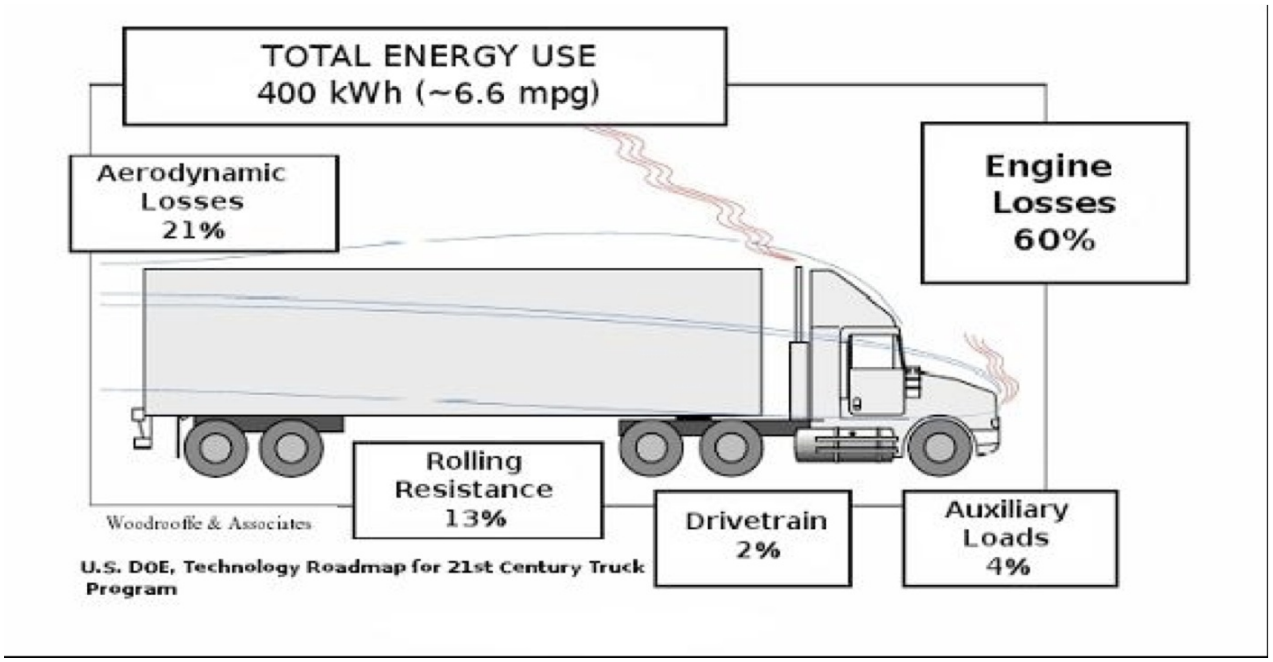
Idle Reduction for Private Fleets ?

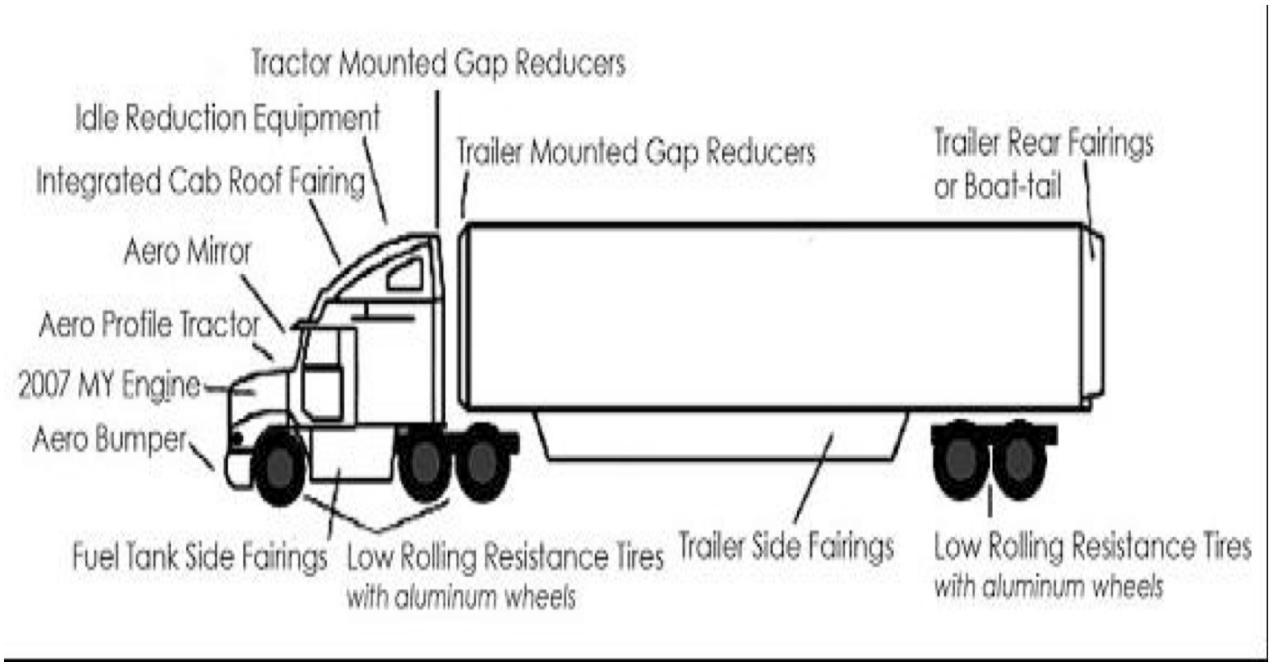
- Planning period: Feb/09 – Jul/09
- If approved, program could start by July, 2011
- Potential funds
- Combine exhaust and idle reduction technologies
- Vehicle /equipment or engine upgrades
- Provide funding through grants and tax incentives

- Need input and strong support from private sector
- Substantial benefits
- Improve air quality
- Reduce health care costs
- Reduce carbon footprint
- Promote & sustain Washington State businesses

For more information

http://www.ecy.wa.gov/programs/air/cars/diesel_exhaust_information.htm


TOTAL ENERGY USE
400 kWh (~6.6 mpg)
Aerodynamic Losses 21%
Engine Losses 60%
Rolling Resistance 13%
Drivetrain 2%
Auxiliary Loads 4%
Woodroffe & Associates
U.S. DOE, Technology Roadmap for 21st Century Truck Program


Tractor Mounted Gap Reducers
Idle Reduction Equipment
Integrated Cab Roof Fairing
Aero Mirror
Aero Profile Tractor
2007 MY Engine
Aero Bumper
Trailer Mounted Gap Reducers
Trailer Rear Fairings or Boat-tail
Fuel Tank Side Fairings
Low Rolling Resistance Tires with aluminum wheels
Trailer Side Fairings
Low Rolling Resistance Tires with aluminum wheels