Mobile Source P2: Vehicle Idle Reduction

Mike Moltzen
EPA Region 2

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Overview

- Health effects of diesel emissions
- Idle Reduction Basics
- Regulatory Approach
- Voluntary Programs
- Funding
Health Effects: Diesel Emissions & Major Pollutants

Particulate Matter (PM): Deep lung penetration

Nitrogen Oxides (NOx): Smog/Ozone precursor

Air Toxics: 40 Hazardous Chemicals

Diesel pollution causes aggravated asthma, lung damage, respiratory ailments, cancer & premature death.
Reducing Diesel Emissions & Major Pollutants

The Three ‘R’s

- Retrofit
- Replace
- Reduce Idling
Why consider the Three ‘R’s?

Diesel engines are very durable, engines will emit pollutants at (or above) the level allowed by the emission standards in place at the time it was manufactured.
Idle Reduction Basics: Cost & Benefits

Cost

- Idle reduction policies can be adopted with little or no cost.
- Investments may be necessary for education and outreach, signage and technology.

Benefits

- Reduce fuel consumption and **SAVE $**
  - A class 8 truck idling for one hour uses 0.82 gallon of fuel
- Reduce unnecessary diesel emissions
  - An idling class 8 truck emits 144 grams NOx and 8,224 grams CO2 per hour
Multi-sector technology is available

- **On-road**: Auto-shutdown, Advanced Truck Stop Electrification, Auxiliary Power Units
- **Non-road**: Electrification, Auto-shutdown
- **Marine**: Cold-ironing, Strong-arm docking
- **Locomotive**: Shore-power, “Greengoats”
- **Airports**: Gate electrification
Technology: On-road & Non-road

- Advanced Truck Stop Electrification: Provides amenities to drivers of long-haul vehicles while allowing engine shutdown

- Electrification: Stationary equipment can be purchased/retrofit to operate on grid-power

- Auto-shutdown: Systems for heavy-duty diesel on-road and non-road vehicles/equipment that automatically shutdown engines after 3 to 5 minutes of idle

- Auxiliary Power Units: Smaller auxiliary engines that provide necessary power without idling the main engine
Idle Reduction Technology: Example

Advanced Truck Stop Electrification technology:
Technology Examples: Marine, Locomotive & Airport

Marine
- Cold-ironing: Provides electrical grid power to docked vessels
- Strong-arm docking: System of docking that allows vessels to “anchor” without pushing against the dock

Locomotive
- Shore-power: Provides electrical grid power to locomotives at terminals
- “Greengoats”: Locomotive switcher engines that operate on hybrid series technology, reducing idling

Airport
- Gate Electrification: Provides grid power to airplanes while planes reside at gates
State Laws

- New York: 5 minutes idling time limit on heavy duty vehicles
- New Jersey: 3 minutes idling time limit on diesel powered motor vehicles

State Law enhancements (examples)

- NYC Local Law: 3 minutes idling time limit on all vehicles
- Rockland County Sanitary Code: 3 minutes idling time limit on all vehicles
The NCDC is a sector based program aimed at reducing diesel emissions and finding innovative ways to protect human health and the environment.

Approach:

- Implementation of rules
- Development of new emissions standards
- Promotion of voluntary programs
- Promotion of collaborative efforts
EPA’s Voluntary Programs

Clean School Bus USA
- **Goal:** Reduce school bus emissions by retiring old buses, retrofitting existing buses and adopting idle reduction policies
- **Idle reduction:**
  - Adoption of idle reduction programs
  - Dispelling idling myths
  - Providing outreach materials

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EPA’s Voluntary Programs

SmartWay Transport Partnership

*Idle-Free Corridors*

- **Goal:** Eliminate all unnecessary long-duration truck and locomotive idling along major transportation corridors

- **Approach:**
  - Behavioral change
  - Technology
  - Idling laws
Clean Construction USA

- **Goal:** Promote the reduction of diesel exhaust emissions from construction equipment and vehicles

- **Idle reduction:**
  - Adoption of idling limits
  - Efficient staging zones
  - Identification of idling zones away from fresh air intakes, HVAC and windows
EPA’s Voluntary Programs

Clean Ports USA

- **Goal:** Reduce diesel emissions from port related activities
- **Approach:**
  - Retrofit and replace older diesel engines
  - Use clean fuels
  - Provide economic incentives for ports’ contracts with tenants, contractors, and others
  - Idle reduction
Northeast Diesel Collaborative

A regional initiative founded by EPA Regions 1 and 2 with the Northeast States for Coordinated Air Use Management to reduce diesel emissions from the on-road, construction, marine and rail sectors.

Idle reduction:
- Promotion of idle reduction projects
- Promotion of idling laws: the New York Metropolitan Air Quality Initiative
- Promotion of EPA voluntary programs (i.e. Idle Free Corridors, Clean School Bus)
- Idle reduction at border crossings
Funding Examples

EPA funding:
- National Clean Diesel Campaign
- Clean School Bus USA
- SmartWay
- Clean Construction
- Clean Ports

Other funding:
- Congestion Mitigation and Air Quality (CMAQ)
- Clean Cities Program
- Loan Programs
Summary

- Diesel emissions represent a health and environmental threat.
- Solutions to reduce idling emissions from mobile sources have been implemented successfully across the country!
- Regulatory and voluntary efforts are successful in reducing idle emissions.
- Funding to establish idle reduction programs is available.
Thank You!

Mike Moltzen
Moltzen.Michael@epa.gov

www.epa.gov/cleanschoolbus
www.epa.gov/cleandiesel
www.epa.gov/smartway