



Energy Plan: Idle Controls

Mobile Sources Technical Advisory
Subcommittee

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President's Energy Plan

- Directs EPA to work with DOT to establish a truck stop idling control program

The Problem: Why Trucks Idle

- Keep cab/sleeper heated or cooled
- Keep fuel warm in winter
- Keep engine warm to avoid cold start in winter
- Habit: <5% of U.S. truckers utilize idling alternatives (in Europe, over 50% of truckers use alternatives to idling).

Idling Impacts: Communities

- Pollution Per vehicle
 - CO₂: 21 tons/yr
 - NO_x: 0.3 tons/yr
- For fleet of Class 8's (0.5 mil), CO₂ emission are over 11 mil tons/yr, and NO_x emissions are over 150,000 tons/yr.
- Excessive noise disturbs communities around truck stops; many truck stops are located in environmental justice communities.

Idling Impacts: Fuel/Maintenance Costs

- One gallon burned per hour/idle (DOE)
 - Average: 6-8 hours/night, 300 nights/yr, 1,800-2,400 gallons per year/per truck.
 - At \$1.50 per gallon, up to \$3,600 per year/per truck.
 - For fleet of Class 8's (.5 mil), trucking industry can consume up to 1.2 billion gallons of fuel/yr.
- Engine wear due to idling for only one hour per day for a year = 6,400 miles of engine wear (ATA) costing \$300 per year (DOE)

Idling Impacts: Driver Health

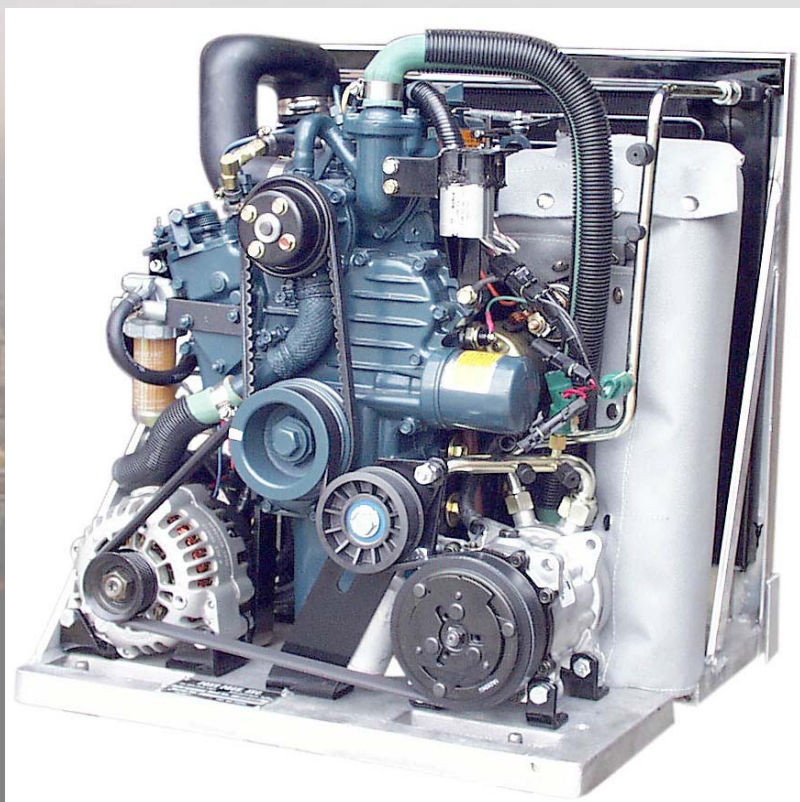
- Noise levels of truck at idle contribute to lack of rest which may impact driving.
- Multiple trucks idling next to each other at truck stops may contribute to CO poisoning of drivers.

Technology Solutions

- Encourage use of idle control technologies
- Three categories:
 - **Auxiliary power units (APUs):** small diesel powered engines (5-10 hp).
 - **Truck stop electrification (TSE):** ground electric units at parking space and modifications to truck engine.
 - **Advanced TSE (ATSE):** structure equipped w/ individual HVAC units for rent over parking space.

Technology	Benefits	Drawbacks
Direct-fired heater	Heats cab & engine; small and lightweight; \$1,000-\$3,000	No AC; no electrical power
Auxiliary power unit	HVAC; heat for engine; electrical power	Heavy; requires oil changes; \$5-7,000
Thermal storage	HVAC, \$1,000-\$3,000	No engine heat; no electrical power; heavy
HVAC Rental \$9.75 for 8-hr period	HVAC; heat to engine; electrical power; no installation fees; no weight issues, tel & internet	Requires purchasing one-time window template (\$10); not available everywhere
Truck stop electrification	HVAC, heat to engine, electrical power; small Kw charge	Modifications to truck (\$1,300), modifications to truck stop (2,300)

Examples of APU and ATSE



Energy Plan: Goal 1

- Evaluating Idling Impacts on Fuel and Air:
 - Initial evaluation of 5 trucks for long-duration testing (6 hours) with AC operating.
 - Conduct more extensive baseline emission testing on idling trucks.
 - Measure fuel consumption and emissions of CO₂, NO_x, and PM (DOE/Oak Ridge Lab).

Energy Plan: Goal 2

- Regional Workshops: Conduct workshops U.S. to educate, inform, and begin the national dialogue on adopting idle control technologies.
 - Identify barriers and take action to remove them (e.g., weight waiver, federal excise tax)
 - Identify incentives (e.g., federal or state tax credits)
 - 21st Century Truck established taskforce

Energy Plan: Goal 3

- Interstate Corridor Energy Savings Program (ICESP): create grant program to implement idling control projects on U.S. interstates.
 - **Identify interstate corridors most traveled by trucking fleets in the U.S., and fund idling control installations on trucks and at truck stops.**
 - **Year 1 Goal: Retrofit 250 parking spaces with idle control technology at truck stops along I-95 from Maine to New Jersey; implement idle technology on 5 major U.S. trucking fleets.**

Other Opportunities: Locomotives

- Smallest engines 2000 hp
- Similar control technology available
- Large NO_x reductions and fuel saving possible
 - 10% of all rail fuel could be saved (366 Million gallons and \$240M)
- Switch yards present significant opportunity
 - current discussions with CSX in 3 cities

Idling Program Information

- www.epa.gov/otaq/retrofit
- Program contacts
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