

Workgroup Recommendations and Other Potential Control Measures
Diesel Initiatives Workgroup

DI001 – On-Road Vehicle Idling

| Control Measure: | Benefits / Costs |
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| <p>Phase out the sleeper berth exemption:</p> <p>Currently, the State of New Jersey exempts from the 3-minute diesel idling limit those vehicles, equipped with a sleeper berth, whose drivers are using the sleeper berth for sleeping or resting. Long haul truckers are required to rest 10 hours for every 12 hours on the road. Since the truck engine frequently powers the heating, cooling and any electrical appliances on the truck, the driver often idles the engine in order to power this equipment.</p> <p>There are a number of alternatives now available to provide a comfortable rest period in the sleeper berth cab without running the main engine, including auxiliary power units (APU's), on-board heaters, and truck stop electrification (TSE). These technologies are becoming more widely available, and in addition to the air emissions benefits they offer, also provide a cost savings to the user, reducing fuel and maintenance costs, and provide a more recuperative rest than idling the main truck engine.</p> <p>Because a variety of options are available to reduce or eliminate idling and these technologies are financially beneficial for truckers over the long term, it is reasonable for the State to phase out the sleeper berth exemption (as has been done in other states, such as California).</p> | <p><u>PM Emitted from Long-Haul Idling in NJ:</u></p> <p>1530 trucks/day⁽¹⁾ 28060 hours/ day⁽¹⁾ * 2.67 grams PM/hour⁽²⁾ 74920 grams PM /day = 165.2 pounds/day = 30 tons PM/year</p> <p><u>NOx Emitted from Long-Haul Idling in NJ:</u></p> <p>28060 hours per day * 135 grams PM/hour 3788100 grams PM /day = 8351 pounds/day = 1524 tons NOx/year</p> |
| <p>Promote the use of Auxiliary Power Units (APUs):</p> <p>An APU is a small engine that is mounted on the truck chassis that provides power for heat and air conditioning, along with any smaller electrical appliances while the truck engine is off. This strategy will save fuel and maintenance, since these motors burn much less fuel than a typical truck engine at idle. APUs come in a variety of configurations which could power all or some of the truck's HVAC and electrical systems. Although there is a substantial initial capital expense, they would pay for themselves in about two years in fuel and maintenance costs. There is a weight penalty associated with the installation of an APU, but the recently signed federal Energy Law</p> | <p>Cost for APU: ~\$7,000 - \$10,000 /unit</p> <p>Typical fuel consumption for an idling heavy duty diesel engine: ~0.8 – 1.0 gallons/hour</p> <p>Typical fuel consumption for a running auxiliary power unit (APU): ~ 0.1 - 0.2 gallons/hour</p> <p>Fuel Savings: ~ 0.4 – 0.6</p> |

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| <p>allows an additional 400 pounds if it is dedicated to an auxiliary power source.</p> <p>It is recommended that financial incentives be used to deploy APU’s or other on-board idle reduction technologies due to their versatility for the long haul trucker, as the trucker can stop anywhere and power all of his/her HVAC and electrical appliances without idling.</p> | <p>gallons/hour</p> <p>At a cost of \$7,000, an average long haul truck would recoup the cost of the APU within 2 years.</p> |
| <p>Promote the use of Truck Stop Electrification (TSE):</p> <p>TSE is a system employed at truck stops where electrical and/or HVAC is provided to the truck from an outside, stationary source. Fuel and maintenance savings are realized since the truck no longer has to idle to provide driver comfort. Currently available is a window-mounted HVAC and electrical outlet system, which provides heat and air conditioning piped through the window mount, electrical outlets, TV-, internet- and movie-access for a flat rate per hour, and an outlet-equipped pedestal, which provides electrical power to a properly configured truck. This option may be more attractive to truckers operating near TSE locations, as there is no large capital expense for the window-mounted HVAC system, or the pedestal system (for a properly equipped truck), as there is with an APU. However, there is currently less versatility to the TSE system as there are a limited amount of TSE facilities throughout the country. Fleet subscription services to TSE also make it easy to use.</p> | <p>Cost for Window-mounted HVAC system: a one-time \$10 charge for the window adapter, plus a charge of \$1.85-\$2.50/hour for the basic services (cheaper than the fuel/maintenance cost of idling the diesel engine, plus increased amenities).</p> <p>Cost for pedestal outlet system: a charge of ~\$0.80/hour, plus cost of heavy duty extension cord and cost of conversion of a non-equipped truck (~\$200 - \$500). Trucks need modification if they do not have electrical heating, cooling, or other appliances.</p> |
| <p>Expand the anti-idling program enforcement to the local police:</p> <p>The recently signed NJ Diesel Law clarifies the authority of the local police to enforce the NJDEP’s anti-idling rules on both public and commercial property. This will expand the enforcement of these laws beyond the NJDEP’s capabilities, due to the fact that the local police cover the state more completely and have a much more intimate knowledge of their municipality than a NJDEP official who is not from that area. This intimate knowledge may include certain “hot spots” where motorists or trucks tend to park and idle.</p> <p>Enforcement of the idling laws by the local police is crucial for many of these PM reduction strategies to be effective. Workshops or some other outreach program to get the police familiar with the idling rules should be implemented in order for proper enforcement to occur.</p> | <p>Benefits include increased compliance and decreased pollutant emissions. Also, by eliminating idling “hot spots”, there will be an increase in the quality of life and reduced direct health impact for those living near the hot spot areas (which are also often environmental justice areas).</p> |

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Contact – Amy Hillman

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1. “Commercial Driver Rest & Parking Requirements: Making Space for Safety—Final Report”, Federal Highway Administration. FHWA—MC—96—0010, May, 1996.
2. “Guidance for Quantifying and Using Long-Duration Truck Idling Emission Reductions in State Implementation Plans and Transportation Conformity”, U.S. Environmental Protection Agency. EPA420—B—04—001, January, 2004.