

Idling Reduction Solutions: Today and Tomorrow



EPA Northeast Diesel Collaborative Partners' Meeting

September 12, 2013

Terry M. Levinson
Energetics Incorporated

*No endorsement implied of any
product or company*

Everybody idles ...

- Personal vehicles idle
- Community vehicles idle
- All kinds of trucks idle
- Military vehicles idle

Sometimes for no reason at all!



The cost is large in terms of ...



- Fuel wasted -- 6 billion gallons of fuel (more than \$20 billion per year)
- Greenhouse gas emissions -- about 20 pounds of carbon dioxide released for every gallon and 27 percent of GHG emissions comes from transportation
- Wear and tear/maintenance -- 1 hour idling equivalent to 15 miles driven for heavy trucks
- Illness -- asthma in sensitive populations and in environmental justice area

Vehicle	Gallon per hour wasted
Light-duty	0.2 – 0.5
Medium-duty	0.4 – 0.6
Heavy-duty	0.8 – 1.0

There are sticks to enforce idling violations (especially in EPA Region 1)



- Wal-Mart (2005) -- \$50,000 fine
- Capitol Waste Services (2008) -- \$107,000 fine
- First Student (2009) -- \$128,000 fine and \$1 million in environmental projects
- Ocean State Transport and STA of Connecticut (2012) -- \$35,000 fine and \$131,000 in environmental projects
- Eastern Bus Company (2013) -- \$35,000 fine



- Bank loans through EPA SmartWay Finance Program
- EPA's Diesel Emissions Reduction Act (DERA) Program grants
- DOE's IdleBox effort with Clean Cities Coordinators
- State grant program, such as NYSERDA
- Non-profit organizations



Some current solutions work for all vehicles



Vehicle Types	Technology	EPA Verified?	Services Provided	Company Examples
All	Battery monitoring systems	No	Restarts engine if battery is low	Havis
All	Fuel-fired heater	Yes	Heat for cab and/or engine	Espar, Teleflex, Volvo, Webasto
All	Plug-in	Yes	Heat, A/C, AC power	AireDock, CabAire, Envirodock, IdleAir, Shorepower
All	Waste heat recovery	No	Provides heat for limited period	Temp-A-Start

Other current solutions have specific markets



Vehicle Types	Technology	EPA Verified?	Services Provided	Company Examples
Ambulances	Plug-in	Yes	Heat, A/C, AC power	MediDock
Armored cars	Battery	No	Heat, A/C, AC power	Griffin
Long-haul trucks	APU	Yes (some?)	Heat, A/C, AC power	Carrier Transicold, Hodyon, PonyPack, Thermo King, Willis
Police cars	Power management system	No	Powers electronic devices	Energy Xtreme
Trucks, buses	Thermal storage or battery A/C	Yes	A/C	Autotherm, Bergstrom, Dometic, Webasto

DOE's SuperTruck solutions to idling look promising



- SuperTruck efficiency goals:
 - Engine – 50 percent or better brake thermal efficiency
 - Tractor-trailer system – 50 percent or better freight efficiency improvement (ton-miles per gallon)
 - Four teams
 - Cummins
 - Daimler Truck North America
 - Navistar
 - Volvo



- Idling reduction:
 - Teams are using batteries, control modules, improved insulation, and high solar reflective paint to enhance cabin comfort for the driver



Here's the starting point for more information



National Idling Reduction Network News

A free monthly, electronic newsletter that provides:

- Information about current funding opportunities and recent awards
- News about changes in ordinances, laws, regulations, and enforcement
- Alerts about upcoming meetings, events, and other resources of interest
- Links to idling cost calculators and other idling reduction resources

http://www1.eere.energy.gov/vehiclesandfuels/resources/fcvt_national_idling.html

More specific information is here



Information Source	URL
Alternative Fuels Data Center	http://www.afdc.energy.gov/conserve/idle_reduction_basics.html
American Transportation Research Institute	http://atri-online.org/2013/02/20/idling-regulations-compendium/
Argonne National Laboratory calculators to estimate fuel savings from not idling	http://www.transportation.anl.gov/engines/idling_tools.html
Clean Cities Coalitions	http://www.eere.energy.gov/cleancities
National Clean Diesel Campaign	http://www.epa.gov/cleandiesel
<i>National Idling Reduction Network News</i>	http://www1.eere.energy.gov/vehiclesandfuels/resources/fcvt_national_idling.html
New York State Energy Research and Development Authority	http://www.nyserda.org/funding-opportunities.aspx

Thanks for listening!



Terry M. Levinson
Senior Analyst
Energetics Incorporated
tlevinson@energetics.com
202-595-4641 cell



STOP Idling. START \$aving.

 **IDLING IS EXPENSIVE >>>**

up to a gallon of fuel per hour in most vehicles

 **IDLING POLLUTES >>>**

a gallon of fuel creates about 20 lbs. of greenhouse gases

 **IDLING THREATENS HEALTH >>>**

breathing vehicle emissions increases risk of respiratory illness

Idling uses more fuel than restarting your engine

•
Idling wastes 6 BILLION GALLONS OF FUEL each year in the U.S.



Argonne National Laboratory's Idling Reduction Page

www.transportation.anl.gov/engines/idling.html

Alternative Fuels & Advanced Vehicles Data Center (AFDC) Idling Reduction Page

http://www.afdc.energy.gov/conserve/idle_reduction_basics.html

Clean Cities

www.cleancities.energy.gov

Clean Cities Coordinator Contact Information

www.afdc.energy.gov/cleancities/progs/coordinators.php

National Idling Reduction Network News

www.eere.energy.gov/vehiclesandfuels/resources/fcvt_national_idling.html

SmartWay Verified Technologies



IDLING IS EXPENSIVE >>>

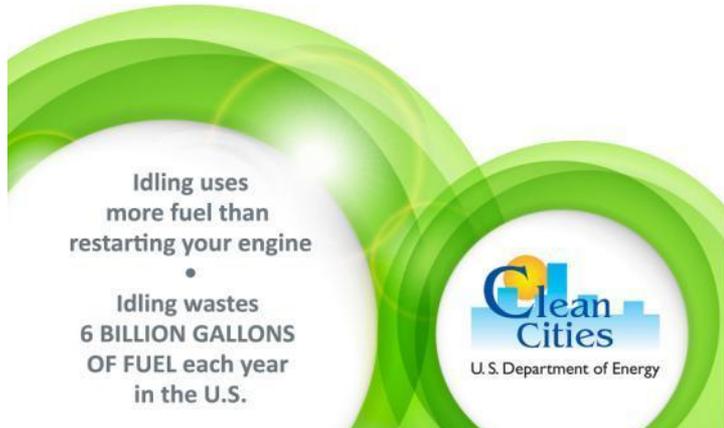
up to a gallon of fuel per hour in most vehicles

IDLING POLLUTES >>>

a gallon of fuel creates about 20 lbs. of greenhouse gases

IDLING THREATENS HEALTH >>>

breathing vehicle emissions increases risk of respiratory illness

A graphic for the IdleBox poster featuring green circular patterns and a white circle containing text. The text states: 'Idling uses more fuel than restarting your engine' followed by a bullet point and 'Idling wastes 6 BILLION GALLONS OF FUEL each year in the U.S.' The Clean Cities logo and 'U.S. Department of Energy' are also present.

Idling uses more fuel than restarting your engine

•
Idling wastes 6 BILLION GALLONS OF FUEL each year in the U.S.


U.S. Department of Energy

IdleBox poster