Idle Reduction for Fleet Sustainability

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Idling Terminology

- **Idling**: Time when vehicle is stopped but the engine is on and fuel is consumed.
- **Intermittent idling**: Idling throughout a trip, the amount of time the vehicle is stopped is less than 60 seconds (due to traffic, stop signs).
- **Idling event**: The vehicle is stopped with the engine running for longer than 60 seconds at a time.

https://www.fleetcarma.com/fleet-idle-fuel-monitoring/
https://usa.streetsblog.org/2016/02/17/4-things-schools-can-do-to-reduce-the-asthma-threat-from-idling-cars/comment-page-1/
Idling is Low Hanging Fruit

- Fleets spend 25%-35% of operation time idling
- Some vocations as high as 70%
- 37% of Idling events occur in the first 3 minutes
- Across vocations 50% occurs during idling events
- Unnecessary idling wastes approximately six billion gallons of fuel annually

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Idling = 0 MPG!

• Under most conditions vehicles do not need to idle for warm up
• Idling more than 30 seconds? It’s better to turn off your car!
• Idling for longer than this uses more gas than re-starting the car
• 2 minutes of idling uses as much gas as driving about 1 mile
• Idling increased wear (2x) & emissions

www.carsdirect.com/car-maintenance/benefits-of-idling-reduction
www.consumerenergycenter.org/myths/idling.html
www.ipd.anl.gov/anlpubs/2015/05/115925.pdf
Fuel Consumption at Idle (0.16-0.90 gal.)

Idling Cost Example: 50 Truck Fleet Idling 1 Hour/Day @ $3.10/gal

Summary of Reasons Not to Idle

- Wastes fuel
- Increased emissions
- Increased wear and tear
How to Reduce Idling

• Idle and vehicle use policies
• Driver education and incentives
• Idle reduction technologies
Idle Reduction Technologies

- Onboard/mobile solutions
  - Idle management systems—idle timer, start-stop
  - Battery/auxiliary power systems
  - Air heaters
  - Waste heat recovery systems
  - Recalibration—RPM reduction
  - ePTO
- Stationary solutions—electrified parking/TSE
  - Single system
  - Dual system/shore power
Telematics Systems

- Very effective tool to monitor idling and influence drive behavior
- Driver score cards/metrics
The City of Columbus Police Department’s journey to a sustainable fleet operation

- 4 Years of commitment from all level of the agency
- CPD Currently deploys over 250 Police Interceptors Idle Reduction
- Over 330 by Dec 2017
CPD Data January 2017

- 30% decrease in vehicle overall idle time (P/N)
- Fuel reduction of over 56,000 gallons equal to 133,608.93 savings in fuel costs
- 4,264,114 miles avoidance of engine wear and tear due to idling

Real Life Results
Charlotte Fire Department

APU Technology
• 2 minute timer starts after the parking brake is set and neither the fire pump or aerial is engaged.
• After 2 minutes the APU starts automatically.
• Big Truck Motor shuts down after receiving a signal from the APU that it is running.
• When leaving the scene, the driver restarts the Big Truck Motor and the APU automatically shuts itself down.
• Trucks have ran for over 8 hours on the APU at multi alarm fires with no identified issues.
Benefits Identified

- Fuel usage reduction from 3.5 gph to > .5gph
- Averaged out, we estimate approximately $4000.00 fuel savings per truck per year.
- One less Preventative Maintenance per year as they are based off of engine hours. This adds another $1500.00 savings per year (40 qts of oil).
- Exhaust system regeneration went from once every 20 hours to once every 65 hours.